APPENDIX G

LABORATORY REPORTS

APPENDIX G-1

PHASE IA PART 1 LABORATORY ANALYTICAL REPORTS



ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue Kelso, WA 98626

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F:+1 360 636 1068 www.alsglobal.com

September 06, 2017

Analytical Report for Service Request No: K1708839

Dave Enos Teck American Incorporated 501 North Riverpoint Blvd., Suite 300 Spokane, WA 99202

RE: August 2017 Sampling SAT Study / B0095010.0005.00001

Dear Dave,

Enclosed are the results of the sample(s) submitted to our laboratory August 22, 2017 For your reference, these analyses have been assigned our service request number **K1708839**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3330. You may also contact me via email at Jeff.Coronado@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Jeff Coronado Metals Department

Manager



ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue Kelso, WA 98626

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Acronyms

ASTM American Society for Testing and Materials

A2LA American Association for Laboratory Accreditation

CARB California Air Resources Board

CAS Number Chemical Abstract Service registry Number

CFC Chlorofluorocarbon
CFU Colony-Forming Unit

DEC Department of Environmental Conservation

DEQ Department of Environmental Quality

DHS Department of Health Services

DOE Department of Ecology
DOH Department of Health

EPA U. S. Environmental Protection Agency

ELAP Environmental Laboratory Accreditation Program

GC Gas Chromatography

GC/MS Gas Chromatography/Mass Spectrometry

LOD Limit of Detection
LOQ Limit of Quantitation

LUFT Leaking Underground Fuel Tank

M Modified

MCL Maximum Contaminant Level is the highest permissible concentration of a substance

allowed in drinking water as established by the USEPA.

MDL Method Detection Limit
MPN Most Probable Number
MRL Method Reporting Limit

NA Not Applicable
NC Not Calculated

NCASI National Council of the Paper Industry for Air and Stream Improvement

ND Not Detected

NIOSH National Institute for Occupational Safety and Health

PQL Practical Quantitation Limit

RCRA Resource Conservation and Recovery Act

SIM Selected Ion Monitoring

TPH Total Petroleum Hydrocarbons

tr Trace level is the concentration of an analyte that is less than the PQL but greater than or

equal to the MDL.

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L14-51
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	_
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
	https://deq.nc.gov/about/divisions/water-resources/water-resources-	
	data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-	
North Carolina DEQ	certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaborator	
Oregon – DEQ (NELAP)	yAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.



Case Narrative

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

ALS ENVIRONMENTAL

Client: Teck American Incorporated Service Request No.: K1708839

Project: August 2017 Sampling SAT Study/ Date Received: 08/22/17

B0095010.0005.00001

Sample Matrix: Soil

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

Sample Receipt

Twenty soil samples were received for analysis at ALS Environmental on 08/22/17. The samples were received in good condition and consistent with the accompanying chain of custody form, except where noted on the cooler receipt and preservation form included in this report.. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Total Metals

No anomalies associated with the analysis of these samples were observed.

Approved by



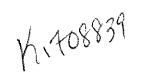
Chain of Custody

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ALS Environmental-Kelso

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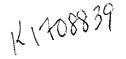
Date 8/20/17
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Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488								Con	50B/		Į į				
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City, State, Zip: <u>Buffalo, WY 82834</u> FAX: <u>307-684-5961</u>									rseni						
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	Fo3				1427		S	1	X						
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ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068



Date 8/20/17
PAGE 9 OF 15

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Project Name: <u>Teck American</u> -	UCR SAT	<u>ES</u> Projec	t Number: <u>B0095010.0005.00001</u>		,							
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City, State, Zip: Buffalo, WY 828	er of	nic (
Sampler's Signature:	Number	lead/arsenic 3050B/6010										
Sample I.D.	Date	Time	T LAB ID	Matrix	ž	ead/					REMARKS	
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Provide FAX Preliminary Re	sults	X	II. Report Dup., MS, MSD as required									
Requested Report Date:			III. Data Validation Report (includes									
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ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

K1208839

Date 8/20/17
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Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001											Analys	is Reques	ted		
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						LAB ID	Matrix	$ \tilde{z} $	lead/					REMARKS	
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G02			1	1506		S	1	Х							
	G03				1508		S	1	X						
	G04				1510		S	1	Х						
	G05				1512		S	1	Х						
	G06				1513		S	1	X						
	G07				1516		S	1	Х						
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1/25/16

Cooler Receipt and Preservation Form eck America Service Request *K17* Received Opened: Unloaded: Samples were received via? **USPS** Fed Ex **UPS** PDX DHL Courier Hand Delivered Samples were received in: (circle) Cooler **Box** Envelope Other NA Were custody seals on coolers? If yes, how many and where? N If present, were custody seals intact? If present, were they signed and dated? Y N Cooler/COC ID **Tracking Number** Corr. Thermometer NA NA Filed Factor Inserts Baggies (Bubble Wrap) Gel Packs Wet Ice Packing material: Dry Ice Sleeves Were custody papers properly filled out (ink, signed, etc.)? NA Were samples received in good condition (temperature, unbroken)? Indicate in the table below. NA If applicable, tissue samples were received: Frozen Partially Thawed Thawed Were all sample labels complete (i.e analysis, preservation, etc.)? Υ NA Did all sample labels and tags agree with custody papers? Indicate major discrepancies in the table on page 2. NA Were appropriate bottles/containers and volumes received for the tests indicated? NA Were the pH-preserved bottles (see SMO GEN SOP) received at the appropriate pH? Indicate in the table below NA Were VOA vials received without headspace? Indicate in the table below. Y Ν NA Was C12/Res negative? N Sample ID on Bottle Sample ID on COC identified by: Coi-cog that way. Out of Head-Volume **Bottle Count** Reagent Lot Sample ID **Bottle Type** Temp space Broke рΗ Reagent added Number Initials Time there 88 a I es, Discrepancies, & Resolutions: Mouah Page____ of

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Total Solids

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Client: Teck American Incorporated

Service Request: K1708839 **Date Collected:** 08/19/17 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix:

Analysis Method:

Soil

160.3 Modified Units: Percent

Prep Method: None Basis: As Received

Date Received: 08/22/17

Solids, Total

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
258-2-F01-081917	K1708839-001	97.0	-	-	1	08/23/17 16:40	
258-2-F02-081917	K1708839-002	97.2	-	-	1	08/23/17 16:40	
258-2-F03-081917	K1708839-003	98.3	-	-	1	08/23/17 16:40	
258-2-F04-081917	K1708839-004	98.2	-	-	1	08/23/17 16:40	
258-2-F05-081917	K1708839-005	97.7	-	-	1	08/23/17 16:40	
258-2-F06-081917	K1708839-006	97.4	-	-	1	08/23/17 16:40	
258-2-F07-081917	K1708839-007	98.0	-	-	1	08/23/17 16:40	
258-2-F08-081917	K1708839-008	97.5	-	-	1	08/23/17 16:40	
258-2-F09-081917	K1708839-009	98.4	-	-	1	08/23/17 16:40	
258-2-F10-081917	K1708839-010	98.4	-	-	1	08/23/17 16:40	
258-2-F10-081917-D	K1708839-011	98.7	-	-	1	08/23/17 16:40	
258-2-G01-081917	K1708839-012	96.0	-	-	1	08/23/17 16:40	
258-2-G02-081917	K1708839-013	98.1	-	-	1	08/23/17 16:40	
258-2-G03-081917	K1708839-014	97.2	-	-	1	08/23/17 16:40	
258-2-G04-081917	K1708839-015	96.5	-	-	1	08/23/17 16:40	
258-2-G05-081917	K1708839-016	97.4	-	-	1	08/23/17 16:40	
258-2-G06-081917	K1708839-017	95.2	-	-	1	08/23/17 16:40	
258-2-G07-081917	K1708839-018	96.0	-	-	1	08/23/17 16:40	
258-2-G08-081917	K1708839-019	97.2	-	-	1	08/23/17 16:40	
258-2-G09-081917	K1708839-020	98.5	-	-	1	08/23/17 16:40	

QA/QC Report

Service Request:K1708839

Date Collected:08/19/17 **Date Received:**08/22/17

Units:Percent

Client: Teck American Incorporated

Project August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Analysis Method:

160.3 Modified

Prep Method: None Basis: As Received

Replicate Sample Summary Inorganic Parameters

			Sample	Duplicate			RPD	Date
Sample Name:	Lab Code:	MRL	Result	Result	Average	RPD	Limit	Analyzed
258-2-F01-081917	K1708839-001DUP	-	97.0	97.0	97.0	<1	20	08/23/17
258-2-F10-081917-D	K1708839-011DUP	-	98.7	99.0	98.9	<1	20	08/23/17
Batch QC	K1708840-001DUP	-	99.0	98.9	99.0	<1	20	08/23/17
Batch OC	K1708840-011DUP	_	99.2	99.3	99.3	<1	20	08/23/17

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Printed 8/24/2017 3:23:44 PM Superset Reference:17-0000434355 rev 00



Metals

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Service Request: K1708839

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/19/17 14:24

Sample Matrix: Soil Date Received: 08/22/17 09:50

Sample Name: 258-2-F01-081917 **Basis:** Dry

Lab Code: K1708839-001

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 11.0 mg/Kg 4.1 2.1 2 08/25/17 14:59 08/23/17 Lead 6010C 218 mg/Kg2.1 0.7 2 08/25/17 14:59 08/23/17

Printed 9/1/2017 3:54:08 PM Superset Reference:

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Analytical Report

Service Request: K1708839

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/19/17 14:26

Sample Matrix: Soil Date Received: 08/22/17 09:50

Sample Name: 258-2-F02-081917 **Basis:** Dry

Lab Code: K1708839-002

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 12.2 mg/Kg 3.9 1.9 2 08/25/17 15:01 08/23/17 Lead 6010C 254 mg/Kg1.9 0.7 2 08/25/17 15:01 08/23/17

Printed 9/1/2017 3:54:08 PM Superset Reference:

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Analytical Report

Service Request: K1708839

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/19/17 14:27

Sample Matrix: Soil Date Received: 08/22/17 09:50

Sample Name: 258-2-F03-081917 **Basis:** Dry

Lab Code: K1708839-003

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 10.0 mg/Kg 4.0 2.0 2 08/25/17 15:04 08/23/17 Lead 6010C 166 mg/Kg2.0 0.7 2 08/25/17 15:04 08/23/17

Printed 9/1/2017 3:54:08 PM Superset Reference:

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Analytical Report

Service Request: K1708839

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/19/17 14:29

Sample Matrix: Soil Date Received: 08/22/17 09:50

Sample Name: 258-2-F04-081917 **Basis:** Dry

Lab Code: K1708839-004

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 10.3 mg/Kg 4.1 2.0 2 08/25/17 14:49 08/23/17 Lead 6010C 192 mg/Kg2.0 0.7 2 08/25/17 14:49 08/23/17

Printed 9/1/2017 3:54:08 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708839 **Date Collected:** 08/19/17 14:31 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 258-2-F05-081917 Basis: Dry

Lab Code: K1708839-005

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 15.3 mg/Kg 4.1 2.0 2 08/25/17 15:12 08/23/17 Lead 6010C **197** mg/Kg2.0 0.7 2 08/25/17 15:12 08/23/17

Printed 9/1/2017 3:54:08 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708839 **Date Collected:** 08/19/17 14:33 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 258-2-F06-081917 Basis: Dry

Lab Code: K1708839-006

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 14.0 mg/Kg 4.1 2.1 2 08/25/17 15:14 08/23/17 Lead 6010C 216 mg/Kg2.1 0.7 2 08/25/17 15:14 08/23/17

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Analytical Report

Service Request: K1708839

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/19/17 14:35

Sample Matrix: Soil Date Received: 08/22/17 09:50

Sample Name: 258-2-F07-081917 **Basis:** Dry

Lab Code: K1708839-007

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 14.3 mg/Kg 3.9 2.0 2 08/25/17 15:16 08/23/17 Lead 6010C 248 mg/Kg2.0 0.7 2 08/25/17 15:16 08/23/17

Printed 9/1/2017 3:54:09 PM Superset Reference:

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Analytical Report

Service Request: K1708839

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/19/17 14:37

Sample Matrix: Soil Date Received: 08/22/17 09:50

Sample Name: 258-2-F08-081917 **Basis:** Dry

Lab Code: K1708839-008

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 12.5 mg/Kg 4.1 2.0 2 08/25/17 15:19 08/23/17 Lead 6010C 207 mg/Kg2.0 0.7 2 08/25/17 15:19 08/23/17

Printed 9/1/2017 3:54:09 PM Superset Reference:

Analytical Report

Service Request: K1708839

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/19/17 14:38

Sample Matrix: Soil Date Received: 08/22/17 09:50

Sample Name: 258-2-F09-081917 **Basis:** Dry

Lab Code: K1708839-009

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 8.3 mg/Kg 3.9 2.0 2 08/25/17 15:21 08/23/17 Lead 6010C 139 mg/Kg2.0 0.7 2 08/25/17 15:21 08/23/17

Printed 9/1/2017 3:54:09 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708839 **Date Collected:** 08/19/17 14:41 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 258-2-F10-081917 Basis: Dry

Lab Code: K1708839-010

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 8.0 mg/Kg 3.9 1.9 2 08/25/17 15:23 08/23/17 Lead 6010C 46.6 mg/Kg1.9 0.7 2 08/25/17 15:23 08/23/17

Printed 9/1/2017 3:54:09 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708839 **Date Collected:** 08/19/17 14:41 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 258-2-F10-081917-D Basis: Dry

Lab Code: K1708839-011

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 10.5 mg/Kg 4.1 2.0 2 08/25/17 15:25 08/23/17 Lead 6010C 44.7 mg/Kg2.0 0.7 2 08/25/17 15:25 08/23/17

Printed 9/1/2017 3:54:09 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708839 **Date Collected:** 08/19/17 15:05 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 258-2-G01-081917 Basis: Dry

Lab Code: K1708839-012

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 13.4 mg/Kg 4.1 2.1 2 08/25/17 15:27 08/23/17 Lead 6010C 343 mg/Kg2.1 0.7 2 08/25/17 15:27 08/23/17

Printed 9/1/2017 3:54:09 PM Superset Reference:

Analytical Report

Service Request: K1708839

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/19/17 15:06

Sample Matrix: Soil Date Received: 08/22/17 09:50

Sample Name: 258-2-G02-081917 **Basis:** Dry

Lab Code: K1708839-013

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 11.6 mg/Kg 4.0 2.0 2 08/25/17 15:29 08/23/17 Lead 6010C 173 mg/Kg2.0 0.7 2 08/25/17 15:29 08/23/17

Printed 9/1/2017 3:54:09 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708839 **Date Collected:** 08/19/17 15:08 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 258-2-G03-081917 Basis: Dry

Lab Code: K1708839-014

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 12.4 mg/Kg 4.1 2.0 2 08/25/17 15:31 08/23/17 Lead 6010C 195 mg/Kg2.0 0.7 2 08/25/17 15:31 08/23/17

Printed 9/1/2017 3:54:09 PM Superset Reference:

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Analytical Report

Service Request: K1708839

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/19/17 15:10

Sample Matrix: Soil Date Received: 08/22/17 09:50

Sample Name: 258-2-G04-081917 **Basis:** Dry

Lab Code: K1708839-015

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 11.8 mg/Kg 4.1 2.1 2 08/25/17 15:40 08/23/17 Lead 6010C 178 mg/Kg2.1 0.7 2 08/25/17 15:40 08/23/17

Printed 9/1/2017 3:54:09 PM Superset Reference:

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Analytical Report

Service Request: K1708839

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/19/17 15:12

Sample Matrix: Soil Date Received: 08/22/17 09:50

Sample Name: 258-2-G05-081917 **Basis:** Dry

Lab Code: K1708839-016

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q 17.9 Arsenic 6010C mg/Kg 4.0 2.0 2 08/25/17 15:42 08/23/17 Lead 6010C 245 mg/Kg2.0 0.7 2 08/25/17 15:42 08/23/17

Printed 9/1/2017 3:54:09 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708839 **Date Collected:** 08/19/17 15:13 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 258-2-G06-081917 Basis: Dry

Lab Code: K1708839-017

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 10.9 mg/Kg 4.1 2.1 2 08/25/17 15:44 08/23/17 Lead 6010C **276** mg/Kg2.1 0.7 2 08/25/17 15:44 08/23/17

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Analytical Report

Service Request: K1708839

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/19/17 15:16

Sample Matrix: Soil Date Received: 08/22/17 09:50

Sample Name: 258-2-G07-081917 **Basis:** Dry

Lab Code: K1708839-018

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 13.1 mg/Kg 4.1 2.1 2 08/25/17 15:46 08/23/17 Lead 6010C 220 mg/Kg2.1 0.7 2 08/25/17 15:46 08/23/17

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Analytical Report

Service Request: K1708839

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/19/17 15:17

Sample Matrix: Soil Date Received: 08/22/17 09:50

Sample Name: 258-2-G08-081917 **Basis:** Dry

Lab Code: K1708839-019

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 11.5 mg/Kg 4.0 2.0 2 08/25/17 15:48 08/23/17 Lead 6010C 191 mg/Kg2.0 0.7 2 08/25/17 15:48 08/23/17

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708839 **Date Collected:** 08/19/17 15:19 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 258-2-G09-081917 Basis: Dry

Lab Code: K1708839-020

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 18.9 mg/Kg 3.8 1.9 2 08/25/17 15:50 08/23/17 Lead 6010C 177 mg/Kg1.9 0.7 2 08/25/17 15:50 08/23/17

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708839

Project: August 2017 Sampling SAT Study/B0095010.0005.00001

Date Collected: NA

Date Received: NA

Sample Matrix: Soil

il

Sample Name:

Method Blank

Basis: Dry

Lab Code: KQ1712021-04

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	ate Extracted	Q
Arsenic	6010C	ND U	mg/Kg	4	2.0	2	08/25/17 14:45	08/23/17	
Lead	6010C	ND U	mg/Kg	2	0.7	2	08/25/17 14:45	08/23/17	

QA/QC Report

Client:Teck American IncorporatedService Request:K1708839Project:August 2017 Sampling SAT Study/B0095010.0005.00001Date Collected:08/19/17Sample Matrix:SoilDate Received:08/22/17Date Analyzed:08/25/17

Date Extracted: 08/23/17

Duplicate Matrix Spike Summary Total Metals

 Sample Name:
 258-2-F04-081917
 Units: mg/Kg

 Lab Code:
 K1708839-004
 Basis: Dry

Analysis Method: 6010C **Prep Method:** EPA 3050B

Matrix SpikeDuplicate Matrix SpikeKQ1712021-02KQ1712021-03

	Sample		Spike			Spike		% Rec		RPD
Analyte Name	Result	Result	Amount	% Rec	Result	Amount	% Rec	Limits	RPD	Limit
Arsenic	10.3	105	99.8	95	108	101	97	75-125	2	30
Lead	192	291	99.8	99	294	101	101	75-125	1	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

QA/QC Report

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Analyzed:** 08/25/17

Sample Matrix: Soil

Lab Control Sample Summary Total Metals

> Units:mg/Kg Basis:Dry

Service Request: K1708839

Lab Control Sample

KQ1712021-01

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Arsenic	6010C	495	500	99	80-120
Lead	6010C	513	500	103	80-120

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ALS Environmental
ALS Group USA, Corp
1317 South 13th Avenue
Kelso, WA 98626

T:+1 360 577 7222

F:+1 360 636 1068 www.alsglobal.com

September 05, 2017

Analytical Report for Service Request No: K1708840

Dave Enos Teck American Incorporated 501 North Riverpoint Blvd., Suite 300 Spokane, WA 99202

RE: August 2017 Sampling SAT Study / B0095010.0005.00001

Dear Dave.

Enclosed are the results of the sample(s) submitted to our laboratory August 22, 2017 For your reference, these analyses have been assigned our service request number **K1708840**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3330. You may also contact me via email at Jeff.Coronado@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Jeff Coronado Metals Department

Manager



ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue Kelso, WA 98626

T: +1 360 577 7222 F: +1 360 636 1068 www.alsglobal.com

Table of Contents

Acronyms

Qualifiers

State Certifications, Accreditations, And Licenses

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Total Solids

Metals

Acronyms

ASTM American Society for Testing and Materials

A2LA American Association for Laboratory Accreditation

CARB California Air Resources Board

CAS Number Chemical Abstract Service registry Number

CFC Chlorofluorocarbon
CFU Colony-Forming Unit

DEC Department of Environmental Conservation

DEQ Department of Environmental Quality

DHS Department of Health Services

DOE Department of Ecology
DOH Department of Health

EPA U. S. Environmental Protection Agency

ELAP Environmental Laboratory Accreditation Program

GC Gas Chromatography

GC/MS Gas Chromatography/Mass Spectrometry

LOD Limit of Detection

LOQ Limit of Quantitation

LUFT Leaking Underground Fuel Tank

M Modified

MCL Maximum Contaminant Level is the highest permissible concentration of a substance

allowed in drinking water as established by the USEPA.

MDL Method Detection Limit
MPN Most Probable Number
MRL Method Reporting Limit

NA Not Applicable
NC Not Calculated

NCASI National Council of the Paper Industry for Air and Stream Improvement

ND Not Detected

NIOSH National Institute for Occupational Safety and Health

PQL Practical Quantitation Limit

RCRA Resource Conservation and Recovery Act

SIM Selected Ion Monitoring

TPH Total Petroleum Hydrocarbons

tr Trace level is the concentration of an analyte that is less than the PQL but greater than or

equal to the MDL.

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- F. The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- \boldsymbol{Q} $\;\;$ See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L14-51
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water	
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.



Case Narrative

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

ALS ENVIRONMENTAL

Client:Teck American IncorporatedService Request No.:K1708840Project:August 2017 Sampling SAT Study/Date Received:08/22/17

B0095010.0005.00001

Sample Matrix: Soil

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

Sample Receipt

Twenty soil samples were received for analysis at ALS Environmental on 08/22/17. The samples were received in good condition and consistent with the accompanying chain of custody form, except where noted on the cooler receipt and preservation form included in this report.. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Total Metals

No anomalies associated with the analysis of these samples were observed.

	/1 /
Approved by	It Cul



Chain of Custody

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068



Date 8/20/17
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Com	pany/Address: <u>189 N</u>	orth Ce	dar S	treet	Phone: <u>30</u>	7-203-3510 or 810-588-1488		Con	.020B						
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258	-2-601-081	917	8/1	9/17	1505		S	1	Х						
	G02				1506		S	1	X						
	G03				1508		S	1	X						
	G04				1510		S	1	X						
	Goð				1512		S	1	X						
	GOG				1513		S	1	X						
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1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

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Date 8/20/17
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					t Number: <u>B0095010.0005.00001</u>		ers							
P	roject Contact: <u>Kady Yo</u>	ung C	ompany	: Arcadis			Containers	/601	İ					
C	ompany/Address: <u>189 No</u>	orth Ce	dar Str	eet Phone: 30	7-203-3510 or 810-588-1488	į	Con	ead/arsenic 3050B/6010						
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(360) 577-7222 FAX (360) 636-1068



Date 8/20/17
PAGE 12 OF 15

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Project Contact: Kady Young Co	ompany: <u>A</u>	rcadis			ta ji	,091					
Company/Address: 189 North Ced	lar Street	Phone: <u>30</u>	7-203-3510 or 810-588-1488		Containers	lead/arsenic 3050B/6010					
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PAGE 13 OF 15

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25/16

Cooler Receipt and Preservation Form ieck America Service Request K17 ceived: Unloaded: Samples were received via? USPS Fed.Ex **UPS** Courier Hand Delivered Samples were received in: (circle) Cooler Box Envelope Other NA Were custody seals on coolers? NA If yes, how many and where? N If present, were custody seals intact? N If present, were they signed and dated? Y N Cooler/COC ID **Tracking Number** Thermometer Corr. NA Factor NA Filed Temp Blank Packing material: Inserts Baggies (Bubble Wrap') Wet Ice Gel Packs ry Ice Sleeves Were custody papers properly filled out (ink, signed, etc.)? NA Were samples received in good condition (temperature, unbroken)? Indicate in the table below. NA Y If applicable, tissue samples were received: Partially Thawed Frozen Thawed Were all sample labels complete (i.e analysis, preservation, etc.)? NA Did all sample labels and tags agree with custody papers? Indicate major discrepancies in the table on page 2. NA Were appropriate bottles/containers and volumes received for the tests indicated? NA Were the pH-preserved bottles (see SMO GEN SOP) received at the appropriate pH? Indicate in the table below NA Were VOA vials received without headspace? Indicate in the table below. Was C12/Res negative? N Sample ID on Bottle Sample ID on COC Identified by 401-2-602 -081 **Bottle Count** Out of Head-Volume Reagent Lot **Bottle Type** Broke На Reagent added Number Initials Time Sample ID Temp space all s, Discrepancies, & Resolutions: and

Page___of___



Total Solids

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Client: Teck American Incorporated

Service Request: K1708840 **Date Collected:** 08/19/17 August 2017 Sampling SAT Study/B0095010.0005.00001 **Project:**

Sample Matrix:

Analysis Method:

Soil

160.3 Modified Units: Percent

Prep Method: None Basis: As Received

Date Received: 08/22/17

Solids, Total

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
258-2-G10-081917	K1708840-001	99.0	-	-	1	08/23/17 16:40	
258-2-H01-081917	K1708840-002	96.9	-	-	1	08/23/17 16:40	
258-2-H02-081917	K1708840-003	95.6	-	-	1	08/23/17 16:40	
258-2-H03-081917	K1708840-004	96.5	-	-	1	08/23/17 16:40	
258-2-H04-081917	K1708840-005	97.4	-	-	1	08/23/17 16:40	
258-2-H05-081917	K1708840-006	95.8	-	-	1	08/23/17 16:40	
258-2-H06-081917	K1708840-007	98.0	-	-	1	08/23/17 16:40	
258-2-H07-081917	K1708840-008	97.3	-	-	1	08/23/17 16:40	
258-2-H08-081917	K1708840-009	98.4	-	-	1	08/23/17 16:40	
258-2-H09-081917	K1708840-010	98.9	-	-	1	08/23/17 16:40	
258-2-H10-081917	K1708840-011	99.2	-	-	1	08/23/17 16:40	
258-2-H01-081917-D	K1708840-012	97.0	-	-	1	08/23/17 16:40	
258-2-I01-081917	K1708840-013	94.8	-	-	1	08/23/17 16:40	
258-2-I02-081917	K1708840-014	94.0	-	-	1	08/23/17 16:40	
258-2-I03-081917	K1708840-015	96.2	-	-	1	08/23/17 16:40	
258-2-I04-081917	K1708840-016	96.7	-	-	1	08/23/17 16:40	
258-2-I05-081917	K1708840-017	97.2	-	-	1	08/23/17 16:40	
258-2-I06-081917	K1708840-018	97.9	-	-	1	08/23/17 16:40	
258-2-I07-081917	K1708840-019	98.7	-	-	1	08/23/17 16:40	
258-2-I08-081917	K1708840-020	98.3	-	-	1	08/23/17 16:40	

QA/QC Report

Client: Teck American Incorporated

Project August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Analysis Method:

160.3 Modified Units:Percent

Service Request:K1708840

Date Collected:08/19/17 **Date Received:**08/22/17

Prep Method: None Basis: As Received

Replicate Sample Summary Inorganic Parameters

			Sample	Duplicate			RPD	Date
Sample Name:	Lab Code:	MRL	Result	Result	Average	RPD	Limit	Analyzed
Batch QC	K1708839-001DUP	-	97.0	97.0	97.0	<1	20	08/23/17
Batch QC	K1708839-011DUP	-	98.7	99.0	98.9	<1	20	08/23/17
258-2-G10-081917	K1708840-001DUP	-	99.0	98.9	99.0	<1	20	08/23/17
258-2-H10-081917	K1708840-011DUP	-	99.2	99.3	99.3	<1	20	08/23/17

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Printed 8/24/2017 3:24:05 PM Superset Reference:17-0000434356 rev 00



Metals

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Client: Teck American Incorporated

Service Request: K1708840 **Date Collected:** 08/19/17 15:21 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Date Received: 08/22/17 09:50 **Sample Matrix:** Soil

Sample Name: 258-2-G10-081917 Basis: Dry

Lab Code: K1708840-001

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed I	Oate Extracted	Q
Arsenic	6010C	7.0	mg/Kg	3.9	2.0	2	08/25/17 15:57	08/23/17	
Lead	6010C	27.4	mg/Kg	2.0	0.7	2.	08/25/17 15:57	08/23/17	

Analytical Report

Client: Teck American Incorporated

Service Request: K1708840 **Date Collected:** 08/19/17 15:24 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Date Received: 08/22/17 09:50 **Sample Matrix:** Soil

Sample Name: 258-2-H01-081917 Basis: Dry

Lab Code: K1708840-002

Total Metals

	Analysis				MDL	Dil.			
Analyte Name	Method	Result	Units	MRL			Date Analyzed D	Date Extracted	Q
Arsenic	6010C	6.7	mg/Kg	3.9	2.0	2	08/25/17 16:20	08/23/17	
Lead	6010C	95.0	mg/Kg	2.0	0.7	2	08/25/17 16:20	08/23/17	

Analytical Report

Client: Teck American Incorporated

Service Request: K1708840 **Date Collected:** 08/19/17 15:26 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Date Received: 08/22/17 09:50 **Sample Matrix:** Soil

Sample Name: 258-2-H02-081917 Basis: Dry

Lab Code: K1708840-003

Total Metals

	Analysis								
Analyte Name	Method	Result	Units MRL MDL Dil. Date Analyzed Da		ate Extracted	Q			
Arsenic	6010C	8.7	mg/Kg	4.1	2.1	2	08/25/17 16:22	08/23/17	
Lead	6010C	266	mg/Kg	2.1	0.7	2	08/25/17 16:22	08/23/17	

Analytical Report

Client: Teck American Incorporated

Service Request: K1708840 **Date Collected:** 08/19/17 15:28 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Date Received: 08/22/17 09:50 **Sample Matrix:** Soil

Sample Name: 258-2-H03-081917 Basis: Dry

Lab Code: K1708840-004

Total Metals

	Analysis				MDL	Dil.			
Analyte Name	Method	Result	Units	MRL			Date Analyzed I	Date Extracted	Q
Arsenic	6010C	14.0	mg/Kg	4.0	2.0	2	08/25/17 16:24	08/23/17	
Lead	6010C	308	mg/Kg	2.0	0.7	2	08/25/17 16:24	08/23/17	

Analytical Report

Service Request: K1708840

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/19/17 15:30

Sample Matrix: Soil Date Received: 08/22/17 09:50

Sample Name: 258-2-H04-081917 **Basis:** Dry

Lab Code: K1708840-005

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 10.7 mg/Kg 4.0 2.0 2 08/25/17 16:26 08/23/17 Lead 6010C **156** mg/Kg2.0 0.7 2 08/25/17 16:26 08/23/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708840 **Date Collected:** 08/19/17 15:30 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Date Received: 08/22/17 09:50 **Sample Matrix:** Soil

Sample Name: 258-2-H05-081917 Basis: Dry

Lab Code: K1708840-006

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 26.4 mg/Kg 4.0 2.0 2 08/25/17 16:35 08/23/17 Lead 6010C 468 mg/Kg2.0 0.7 2 08/25/17 16:35 08/23/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708840 **Date Collected:** 08/19/17 15:34 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Date Received: 08/22/17 09:50 **Sample Matrix:** Soil

Sample Name: 258-2-H06-081917 Basis: Dry

Lab Code: K1708840-007

Total Metals

	Analysis			MRL	MDL	Dil.			
Analyte Name	Method	Result	Units				Date Analyzed D	Pate Extracted	Q
Arsenic	6010C	10.7	mg/Kg	4.0	2.0	2	08/25/17 16:37	08/23/17	
Lead	6010C	160	mg/Kg	2.0	0.7	2	08/25/17 16:37	08/23/17	

Analytical Report

Client: Teck American Incorporated

Service Request: K1708840 **Date Collected:** 08/19/17 15:35 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Date Received: 08/22/17 09:50 **Sample Matrix:** Soil

Sample Name: 258-2-H07-081917 Basis: Dry

Lab Code: K1708840-008

Total Metals

	Analysis			MRL	MDL	Dil.			
Analyte Name	Method	Result	Units				Date Analyzed D	Date Extracted	Q
Arsenic	6010C	15.6	mg/Kg	4.0	2.0	2	08/25/17 16:39	08/23/17	
Lead	6010C	223	mg/Kg	2.0	0.7	2	08/25/17 16:39	08/23/17	

Analytical Report

Client: Teck American Incorporated

Service Request: K1708840 **Date Collected:** 08/19/17 15:36 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Date Received: 08/22/17 09:50 **Sample Matrix:** Soil

Sample Name: 258-2-H08-081917 Basis: Dry

Lab Code: K1708840-009

Total Metals

	Analysis			MRL	MDL	Dil.			
Analyte Name	Method	Result	Units				Date Analyzed I	Oate Extracted	Q
Arsenic	6010C	22.3	mg/Kg	4.0	2.0	2	08/25/17 16:41	08/23/17	
Lead	6010C	305	mg/Kg	2.0	0.7	2	08/25/17 16:41	08/23/17	

Analytical Report

Client: Teck American Incorporated

Service Request: K1708840 **Date Collected:** 08/19/17 15:38 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Date Received: 08/22/17 09:50 **Sample Matrix:** Soil

Sample Name: 258-2-H09-081917 Basis: Dry

Lab Code: K1708840-010

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q 6010C Arsenic 22.8 mg/Kg 3.8 1.9 2 08/25/17 16:43 08/23/17 Lead 6010C 144 mg/Kg1.9 0.7 2 08/25/17 16:43 08/23/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708840 **Date Collected:** 08/19/17 15:40 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Date Received: 08/22/17 09:50 **Sample Matrix:** Soil

Sample Name: 258-2-H10-081917 Basis: Dry

Lab Code: K1708840-011

Total Metals

	Analysis									
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed I	Date Extracted	Q	
Arsenic	6010C	17.4	mg/Kg	4.0	2.0	2	08/25/17 16:45	08/23/17		
Lead	6010C	60.0	mg/Kg	2.0	0.7	2	08/25/17 16:45	08/23/17		

Analytical Report

Client: Teck American Incorporated

Service Request: K1708840 **Date Collected:** 08/19/17 15:24 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Date Received: 08/22/17 09:50 **Sample Matrix:** Soil

Sample Name: 258-2-H01-081917-D Basis: Dry

Lab Code: K1708840-012

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	ate Extracted	Q
Arsenic	6010C	7.0	mg/Kg	4.0	2.0	2	08/25/17 16:47	08/23/17	
Lead	6010C	85.6	mg/Kg	2.0	0.7	2	08/25/17 16:47	08/23/17	

Analytical Report

Client: Teck American Incorporated

Service Request: K1708840 **Date Collected:** 08/19/17 15:57 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Date Received: 08/22/17 09:50 **Sample Matrix:** Soil

Sample Name: 258-2-I01-081917 Basis: Dry

Lab Code: K1708840-013

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q 6010C Arsenic 13.8 mg/Kg 4.0 2.0 2 08/25/17 16:49 08/23/17 Lead 6010C 239 mg/Kg2.0 0.7 2 08/25/17 16:49 08/23/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708840 August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/19/17 15:58 **Project:**

Date Received: 08/22/17 09:50 **Sample Matrix:** Soil

Sample Name: 258-2-I02-081917 Basis: Dry

Lab Code: K1708840-014

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed I	Date Extracted	Q
Arsenic	6010C	13.4	mg/Kg	4.3	2.1	2	08/25/17 16:51	08/23/17	
Lead	6010C	232	mg/Kg	2.1	0.7	2	08/25/17 16:51	08/23/17	

Analytical Report

Client: Teck American Incorporated

Service Request: K1708840 **Date Collected:** 08/19/17 16:00 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Date Received: 08/22/17 09:50 **Sample Matrix:** Soil

Sample Name: 258-2-I03-081917 Basis: Dry

Lab Code: K1708840-015

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q 17.0 Arsenic 6010C mg/Kg 4.1 2.1 2 08/25/17 16:53 08/23/17 Lead 6010C 226 mg/Kg2.1 0.7 2 08/25/17 16:53 08/23/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708840 **Date Collected:** 08/19/17 16:02 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Date Received: 08/22/17 09:50 **Sample Matrix:** Soil

Sample Name: 258-2-I04-081917 Basis: Dry

Lab Code: K1708840-016

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed I	Pate Extracted	Q
Arsenic	6010C	11.8	mg/Kg	4.0	2.0	2	08/25/17 17:02	08/23/17	
Lead	6010C	186	mg/Kg	2.0	0.7	2	08/25/17 17:02	08/23/17	

Analytical Report

Client: Teck American Incorporated

Service Request: K1708840 **Date Collected:** 08/19/17 16:04 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Date Received: 08/22/17 09:50 **Sample Matrix:** Soil

Sample Name: 258-2-I05-081917 Basis: Dry

Lab Code: K1708840-017

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed I	Date Extracted	Q
Arsenic	6010C	15.5	mg/Kg	4.0	2.0	2	08/25/17 17:04	08/23/17	
Lead	6010C	191	mg/Kg	2.0	0.7	2	08/25/17 17:04	08/23/17	

Analytical Report

Service Request: K1708840

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/19/17 16:05

Sample Matrix: Soil Date Received: 08/22/17 09:50

Sample Name: 258-2-I06-081917 **Basis:** Dry

Lab Code: K1708840-018

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 14.8 mg/Kg 4.0 2.0 2 08/25/17 17:06 08/23/17 Lead 6010C 262 mg/Kg2.0 0.7 2 08/25/17 17:06 08/23/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708840 **Date Collected:** 08/19/17 16:07 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Date Received: 08/22/17 09:50 **Sample Matrix:** Soil

Sample Name: 258-2-I07-081917 Basis: Dry

Lab Code: K1708840-019

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q 6010C Arsenic 10.4 mg/Kg 4.0 2.0 2 08/25/17 17:08 08/23/17 Lead 6010C 119 mg/Kg2.0 0.7 2 08/25/17 17:08 08/23/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708840 August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/19/17 16:08 **Project:**

Date Received: 08/22/17 09:50 **Sample Matrix:** Soil

Sample Name: 258-2-I08-081917 Basis: Dry

Lab Code: K1708840-020

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed I	Oate Extracted	Q
Arsenic	6010C	15.8	mg/Kg	3.8	1.9	2	08/25/17 17:11	08/23/17	
Lead	6010C	220	mg/Kg	1.9	0.7	2	08/25/17 17:11	08/23/17	

Analytical Report

Client: Teck American Incorporated Service Request: K1708840

August 2017 Sampling SAT Study/B0095010.0005.00001 **Project:**

Date Collected: NA Date Received: NA

Sample Matrix:

Soil

Sample Name:

Method Blank

Basis: Dry

Lab Code: KQ1712032-02

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	ate Extracted	Q
Arsenic	6010C	ND U	mg/Kg	4	2.0	2	08/25/17 15:52	08/23/17	
Lead	6010C	ND U	mg/Kg	2	0.7	2	08/25/17 15:52	08/23/17	

QA/QC Report

Client: Teck American Incorporated **Project:**

August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Service Request:**

K1708840

Date Collected:

08/19/17

Date Received:

08/22/17 08/25/17

Date Analyzed: Date Extracted:

08/23/17

Duplicate Matrix Spike Summary

Total Metals

Sample Name:

258-2-G10-081917

Units:

Basis:

mg/Kg

Dry

Lab Code:

K1708840-001

Analysis Method: Prep Method:

6010C

EPA 3050B

Matrix Spike

Duplicate Matrix Spike

			KQ171	2032-03		KQ1712	032-04			
	Sample		Spike			Spike		% Rec		RPD
Analyte Name	Result	Result	Amount	% Rec	Result	Amount	% Rec	Limits	RPD	Limit
Arsenic	7.0	105	98.5	100	98.2	94.3	97	75-125	7	30
Lead	27.4	132	98.5	107	123	94.3	101	75-125	7	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

QA/QC Report

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Analyzed:** 08/25/17

Sample Matrix: Soil

Lab Control Sample Summary Total Metals

> Units:mg/Kg Basis:Dry

Service Request: K1708840

Lab Control Sample

KQ1712032-01

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Arsenic	6010C	492	500	98	80-120
Lead	6010C	506	500	101	80-120



ALS Environmental
ALS Group USA, Corp
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September 05, 2017

Analytical Report for Service Request No: K1708841

Dave Enos Teck American Incorporated 501 North Riverpoint Blvd., Suite 300 Spokane, WA 99202

RE: August 2017 Sampling SAT Study / B0095010.0005.00001

Dear Dave.

Enclosed are the results of the sample(s) submitted to our laboratory August 22, 2017 For your reference, these analyses have been assigned our service request number **K1708841**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3330. You may also contact me via email at Jeff.Coronado@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Jeff Coronado

Metals Departmen

Metals Department

Manager



ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue Kelso, WA 98626

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Table of Contents

Acronyms

Qualifiers

State Certifications, Accreditations, And Licenses

Case Narrative

Chain of Custody

Total Solids

Metals

Acronyms

ASTM American Society for Testing and Materials

A2LA American Association for Laboratory Accreditation

CARB California Air Resources Board

CAS Number Chemical Abstract Service registry Number

CFC Chlorofluorocarbon
CFU Colony-Forming Unit

DEC Department of Environmental Conservation

DEQ Department of Environmental Quality

DHS Department of Health Services

DOE Department of Ecology
DOH Department of Health

EPA U. S. Environmental Protection Agency

ELAP Environmental Laboratory Accreditation Program

GC Gas Chromatography

GC/MS Gas Chromatography/Mass Spectrometry

LOD Limit of Detection
LOQ Limit of Quantitation

LUFT Leaking Underground Fuel Tank

M Modified

MCL Maximum Contaminant Level is the highest permissible concentration of a substance

allowed in drinking water as established by the USEPA.

MDL Method Detection Limit
MPN Most Probable Number
MRL Method Reporting Limit

NA Not Applicable
NC Not Calculated

NCASI National Council of the Paper Industry for Air and Stream Improvement

ND Not Detected

NIOSH National Institute for Occupational Safety and Health

PQL Practical Quantitation Limit

RCRA Resource Conservation and Recovery Act

SIM Selected Ion Monitoring

TPH Total Petroleum Hydrocarbons

tr Trace level is the concentration of an analyte that is less than the PQL but greater than or

equal to the MDL.

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L14-51
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	_
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
	https://deq.nc.gov/about/divisions/water-resources/water-resources-	
	data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-	
North Carolina DEQ	certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
-	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaborator	
Oregon – DEQ (NELAP)	yAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.



Case Narrative

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

ALS ENVIRONMENTAL

Client: Teck American Incorporated Service Request No.: K1708841

Project: August 2017 Sampling SAT Study/ Date Received: 08/22/17

B0095010.0005.00001

Sample Matrix: Soil

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

Sample Receipt

Twenty soil samples were received for analysis at ALS Environmental on 08/22/17. The samples were received in good condition and consistent with the accompanying chain of custody form, except where noted on the cooler receipt and preservation form included in this report.. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Total Metals

No anomalies associated with the analysis of these samples were observed.

Approved by



Chain of Custody

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ALS Environmental-Kelso

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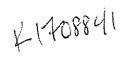
Date 2/20/17
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1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068



Date 8/20/17
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1317 South 13th, Kelso, WA 98626

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Date	8/	20/	17	
PAGE	15	OF	15	

			Analysis Requested									
Project Name: <u>Teck American</u> -			t Number: <u>B0095010.0005.00001</u>		ers							
Project Contact: <u>Kady Young</u> C	ompany: <u>A</u>	rcadis			Containers	109/						
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City, State, Zip: Buffalo, WY 828	34 FAX: 3	07-684-596	<u>1</u>		r of	nic 3						
Sampler's Signature:	:	Number	lead/arsenic 3050B/6010									
Sample I.D.	Date	Time	LAB ID	Matrix	Z	lead					REMARKS	
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Requested Report Date:			III. Data Validation Report (includes									
Invoice Information			raw data)									
P.O. # <u>UCR-ALS-D34-17</u>			IV. CLP Deliverable Report									
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ALS Envir ...mental-Kelso

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(360) 577-7222 FAX (360) 636-1068

K17088411

PAGE / 2 OF - 10 SR# WM E/19/17 WM E/19/17

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Project Contact: <u>Kady Young</u> Company:	Arcadis		Containers	lead/arsenic 3050B/6010			[i		
Company/Address: 189 North Cedar Street	Phone: 307-203-3510 or 810-588-1488			050B						
City, State, Zip: Buffalo, WY 82834 FAX:	<u>307-684-5961</u>		r of	nic 3						
Sampler's Signature:		Number	arsei							
Sample I.D. Date	Time LAB ID	Matrix	Ž	ead/		1			REMARKS	
	11:03	S	1	X	····					
A07	13:03	S	1	X						
A08	14:00	S	1	Х						
A09	15:64	S	1	X						
V AIO	16:08	s	1	X						
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		S	1	X						
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URNAROUND REQUIREMENTS	REPORT REQUIREMENTS		Comn	1	cial Instru	ctions:				
24 hr 48 hr 5 day	I. Routine Report: Results, Method Blan			Remainde						
X Standard (10 days)	Surrogate, as required								·	
Provide FAX Preliminary Results	X II. Report Dup., MS, MSD as required									
Requested Report Date:	III. Data Validation Report (includes	l								
Invoice Information	raw data)									
P.O. # Bill to: Dave Enos - Teck American	IV. CLP Deliverable Report X V. EDD	1								
501 N Riverpoint Blvd, Suite 300 Spokane, WA 992										
RELINOUISHED BY:	RECEIVED BY:		RELI	NQUISHE	ED BY:		R	ECEIVE	D BY:	
Signature: (2)	Signature:		Signat	ure:			s	ignature: _		
Printed Name: Watson Metsutnan	Printed Name: SWOLF		Printed Name:				•	•		
Firm: Arcadis	Firm: 425, Date/Time: 9/22/17 0950	Firm:				F	Firm:			
Date/Time: 8/21/17 1360	Date/Time: 9/22/17 0950	Date/Time:					Date/Time:			

ALS Envir __mental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

X1708841

Date _				
PAGE	2-4	OF	-20	10
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Project Name: <u>Teck American - UCR S</u>	<u>ATES</u> Proje	ct Number: <u>B0095010.0005.00001</u>		٤					I		
Project Contact: Kady Young Compan	Container	1 6	1			}					
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City, State, Zip: Buffalo, WY 82834 FA	K: <u>307-684-59</u>	<u>161</u>		_	enic						
Sampler's Signature:				Number	lead/arsenic 3050B/6010				[ļ	
Sample I.D. Dat	Time	LAB ID	Matrix	Z	lead					REMARKS	
401-2-806-081617 08/16	17 11:12		S	1	X						
B07	[3:1]		S	1	X						
B08	14:03		S	1	Х			· · · · · · · · · · · · · · · · · · ·			
809	15:07		S	1	Х						
₩ BIO V	16:12		S	1	X						
401-2-B07-081617-D Y	13:11		S	1	X						
70, 2 3 3 3 3 3			S	•	***************************************						
	4			1	X						
			S	1	X						
(ar)			S	1	X						
			S	1	X						
URNAROUND REQUIREMENTS		REPORT REQUIREMENTS		Comments/Special Instructions:							
24 hr 5 day		I. Routine Report: Results, Method Blan	ık,	Hold Remainder							
X Standard (10 days)		Surrogate, as required									
Provide FAX Preliminary Results		II. Report Dup., MS, MSD as required	i								
lequested Report Date:		III. Data Validation Report (includes	1								
nvoice Information	ł	raw data) IV. CLP Deliverable Report	- 1								
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Sill to: <u>Dave Enos - Teck American</u> X V. EDD 501 N Riverpoint Blvd, Suite 300 Spokane, WA 992											
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RECEIVED BY: Signature: Signature:					-			- 1			
(2) 011							Ī	Signature: Printed Name:			
rm: Arcadis	Firm:	A25						1			
ate/Time: 8/21/17 /300		8/12/17 0950									



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int <u>leck Amer</u>	Ica.	1	/	rvice Request I	01	000	1/40	
eived: $8/22/17$	Opened: 0/2	417	By: <u>K</u>	/V\Unloa	ded: \begin{align*}	27/1 B	y: <u>K</u> M	<u> </u>
Samples were received via?	USPS Fed F	UPS	DHL	PDX Cou	urier H	and Delivered		
Samples were received in: (circ	le) (Cooler	Box	Envelope	Other		Von	<i>NA</i>	
Were <u>custody seals</u> on coolers?	NA NA	YN	If yes	how many and	where 2	stront	•	
If present, were custody seals i	ntact? (Y)N	Ifj	resent, were the	y signed ar	r id dated?	Y	N
aw Gorrected Raw er Temp Copier Temp Temp Blank	Corrected Corr.	1	neter Co	oler/COC ID NA		Tracking Num		VA Filed
2 5,4 13,1	13.3 +0.2	325	5		8745	10738 5	5575	1
8 7.9 1.5	11.6 +0.1	373	3		8745	10738	3586	
3 7.6 14.	14.440.3	3 340			\$745	6738	5564	
7 72 7,2	7.4 70-2	- 37	7		8105	91121	296	
3/9/14/21	1411-01	$\perp 3\%$			874	5 6738	559	7
Packing material: Inserts B	aggies (Bubble	Wrap) Gel F	Packs (We	lice Pry Ice	Sleeves			
Were custody papers properly	illed out (ink, sign	ed, etc.)?				٨	IA (Y)	И
Were samples received in good	condition (temper	rature, unbroi	(en)? <i>India</i>	ate in the table b	below.	N	IA Y	N
	icable, tissue samp			rozen Partiali	ly Thawed			- K
ere all sample labels complete							IA (Y)	
id all sample labels and tags a	-	•	-	_	the table o		IA Y	$\binom{N}{}$
Were appropriate bottles/contain							IA (Y)	N
Were the pH-preserved bottles		•			ite in the ta	ible below (A) Y	N ·
Were VOA vials received with	out headspace? In	ndicate in the	table belov	<i>?.</i>		<u>O</u>	= 1	N
Was C12/Res negative?			· · · · · · · · · · · · · · · · · · ·				(A) Y	N
Sample ID on Bottle	7 401-2	Sample ID o) (6)	C-01 - 1	Identified by:	male 16	dil
11-2-G02-0x171 101-1-C1-0818			- 0818	17 Dales	502-1	c mald 0	mple 56	160
01-1-01-0818	11 401	1-001	UNIX	1/ (batcs	COG +6	s match C at way. "	ve. No	
					- (((((((((((((((((((y vorage		
	Bottle Count	Out of Head- Temp space	Broke pi	Reagent	Volume added	Reagent Lot Number	Initials	Time
Sample ID	Bottle Type	Lettib 2bace	DIOKE DI	rteagent	added	Mumai	Initials	inte.
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Total Solids

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Analysis Method: 160.3 Modified

Prep Method: None

Service Request: K1708841

Date Collected: 08/16/17 - 08/19/17

Date Received: 08/22/17

Units: Percent

Basis: As Received

Solids, Total

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
258-2-I09-081917	K1708841-001	99.2	-	-	1	08/23/17 16:44	
258-2-I10-081917	K1708841-002	99.3	-	-	1	08/23/17 16:44	
258-2-J01-081917	K1708841-003	96.2	-	-	1	08/23/17 16:44	
258-2-J02-081917	K1708841-004	94.9	-	-	1	08/23/17 16:44	
258-2-J03-081917	K1708841-005	97.2	-	-	1	08/23/17 16:44	
258-2-J04-081917	K1708841-006	97.0	-	-	1	08/23/17 16:44	
258-2-J05-081917	K1708841-007	96.1	-	-	1	08/23/17 16:44	
258-2-J06-081917	K1708841-008	97.1	-	-	1	08/23/17 16:44	
258-2-J07-081917	K1708841-009	97.9	-	-	1	08/23/17 16:44	
258-2-J08-081917	K1708841-010	98.5	-	-	1	08/23/17 16:44	
258-2-J09-081917	K1708841-011	98.6	-	-	1	08/23/17 16:44	
258-2-J10-081917	K1708841-012	99.5	-	-	1	08/23/17 16:44	
258-2-J05-081917-D	K1708841-013	95.2	-	-	1	08/23/17 16:44	
401-2-A06-081617	K1708841-014	95.4	-	-	1	08/23/17 16:44	
401-2-A07-081617	K1708841-015	93.8	-	-	1	08/23/17 16:44	
401-2-A08-081617	K1708841-016	95.0	-	-	1	08/23/17 16:44	
401-2-A09-081617	K1708841-017	96.5	-	-	1	08/23/17 16:44	
401-2-A10-081617	K1708841-018	95.6	-	-	1	08/23/17 16:44	
401-2-B06-081617	K1708841-019	93.6	-	-	1	08/23/17 16:44	
401-2-B07-081617	K1708841-020	95.7	-	-	1	08/23/17 16:44	

QA/QC Report

Client: Teck American Incorporated

Project August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Analysis Method: 160.3 Modified

Prep Method: None

Service Request: K1708841 Date Collected: 08/19/17 Date Received: 08/22/17

Units:Percent

Basis: As Received

Replicate Sample Summary Inorganic Parameters

			Sample	Duplicate			RPD	Date
Sample Name:	Lab Code:	MRL	Result	Result	Average	RPD	Limit	Analyzed
258-2-I09-081917	K1708841-001DUP	-	99.2	99.2	99.2	<1	20	08/23/17
258-2-J09-081917	K1708841-011DUP	-	98.6	98.8	98.7	<1	20	08/23/17
Batch QC	K1708844-001DUP	-	94.7	94.7	94.7	<1	20	08/23/17
Batch QC	K1708844-011DUP	-	95.2	95.1	95.2	<1	20	08/23/17

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Printed 8/24/2017 3:54:10 PM Superset Reference:17-0000434369 rev 00



Metals

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Client: Teck American Incorporated

Service Request: K1708841 **Date Collected:** 08/19/17 16:10 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 258-2-I09-081917 Basis: Dry

Lab Code: K1708841-001

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 18.3 mg/Kg 3.9 0.8 2 08/29/17 16:24 08/23/17 Lead 6010C 136 mg/Kg1.9 0.4 2 08/29/17 16:24 08/23/17

Printed 9/1/2017 4:03:12 PM Superset Reference:

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Analytical Report

Service Request: K1708841

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/19/17 16:12

Sample Matrix: Soil Date Received: 08/22/17 09:50

Sample Name: 258-2-I10-081917 **Basis:** Dry

Lab Code: K1708841-002

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 14.6 mg/Kg 4.0 0.8 2 08/29/17 16:36 08/23/17 Lead 6010C **120** mg/Kg2.0 0.4 2 08/29/17 16:36 08/23/17

Printed 9/1/2017 4:03:13 PM Superset Reference:

Analytical Report

Client: Teck American Incorporated

Service Request: K1708841 **Date Collected:** 08/19/17 16:18 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 258-2-J01-081917 Basis: Dry

Lab Code: K1708841-003

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 15.6 mg/Kg 4.1 0.8 2 08/29/17 16:38 08/23/17 Lead 6010C **301** mg/Kg2.1 0.4 2 08/29/17 16:38 08/23/17

Printed 9/1/2017 4:03:13 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708841 **Date Collected:** 08/19/17 16:20 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 258-2-J02-081917 Basis: Dry

Lab Code: K1708841-004

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 33.3 mg/Kg 4.1 0.8 2 08/29/17 16:40 08/23/17 Lead 6010C **268** mg/Kg2.1 0.4 2 08/29/17 16:40 08/23/17

Printed 9/1/2017 4:03:13 PM Superset Reference:

Analytical Report

Client: Teck American Incorporated

Service Request: K1708841 **Date Collected:** 08/19/17 16:21 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 258-2-J03-081917 Basis: Dry

Lab Code: K1708841-005

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	Pate Extracted	Q
Arsenic	6010C	11.2	mg/Kg	4.1	0.8	2	08/29/17 16:49	08/23/17	
Lead	6010C	265	mg/Kg	2.1	0.4	2	08/29/17 16:49	08/23/17	

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708841 **Date Collected:** 08/19/17 16:23 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 258-2-J04-081917 Basis: Dry

Lab Code: K1708841-006

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 14.0 mg/Kg 4.1 0.8 2 08/29/17 16:52 08/23/17 Lead 6010C 243 mg/Kg2.0 0.4 2 08/29/17 16:52 08/23/17

Printed 9/1/2017 4:03:13 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708841 **Date Collected:** 08/19/17 16:25 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 258-2-J05-081917 Basis: Dry

Lab Code: K1708841-007

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 10.8 mg/Kg 4.1 0.8 2 08/29/17 16:54 08/23/17 Lead 6010C **156** mg/Kg2.1 0.4 2 08/29/17 16:54 08/23/17

Printed 9/1/2017 4:03:13 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708841 **Date Collected:** 08/19/17 16:27 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 258-2-J06-081917 Basis: Dry

Lab Code: K1708841-008

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 10.5 mg/Kg 4.1 0.8 2 08/29/17 16:56 08/23/17 Lead 6010C 143 mg/Kg2.1 0.4 2 08/29/17 16:56 08/23/17

Printed 9/1/2017 4:03:13 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708841 **Date Collected:** 08/19/17 16:29 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 258-2-J07-081917 Basis: Dry

Lab Code: K1708841-009

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 9.0 mg/Kg 4.0 0.8 2 08/29/17 16:58 08/23/17 Lead 6010C **126** mg/Kg2.0 0.4 2 08/29/17 16:58 08/23/17

Printed 9/1/2017 4:03:13 PM Superset Reference:

Analytical Report

Client: Teck American Incorporated

Service Request: K1708841 **Date Collected:** 08/19/17 16:30 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 258-2-J08-081917 Basis: Dry

Lab Code: K1708841-010

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 14.4 mg/Kg 4.0 0.8 2 08/29/17 17:01 08/23/17 Lead 6010C 272 mg/Kg2.0 0.4 2 08/29/17 17:01 08/23/17

Printed 9/1/2017 4:03:13 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708841 **Date Collected:** 08/19/17 16:32 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 258-2-J09-081917 Basis: Dry

Lab Code: K1708841-011

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 10.7 mg/Kg 3.8 0.8 2 08/29/17 17:03 08/23/17 Lead 6010C 308 mg/Kg1.9 0.4 2 08/29/17 17:03 08/23/17

Printed 9/1/2017 4:03:13 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708841 **Date Collected:** 08/19/17 16:33 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 258-2-J10-081917 Basis: Dry

Lab Code: K1708841-012

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 10.7 mg/Kg 3.9 0.8 2 08/29/17 17:05 08/23/17 Lead 6010C **75.6** mg/Kg1.9 0.4 2 08/29/17 17:05 08/23/17

Printed 9/1/2017 4:03:13 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708841 **Date Collected:** 08/19/17 16:25 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 258-2-J05-081917-D Basis: Dry

Lab Code: K1708841-013

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 10.9 mg/Kg 4.2 0.8 2 08/29/17 17:07 08/23/17 Lead 6010C 146 mg/Kg2.1 0.4 2 08/29/17 17:07 08/23/17

Printed 9/1/2017 4:03:13 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708841 **Date Collected:** 08/16/17 11:03 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-A06-081617 Basis: Dry

Lab Code: K1708841-014

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 58.2 mg/Kg 4.1 0.8 2 08/29/17 17:10 08/23/17 Lead 6010C 1020 mg/Kg2.1 0.4 2 08/29/17 17:10 08/23/17

Printed 9/1/2017 4:03:13 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708841 **Date Collected:** 08/16/17 13:03 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-A07-081617 Basis: Dry

Lab Code: K1708841-015

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 24.1 mg/Kg 4.2 0.8 2 08/29/17 17:19 08/23/17 Lead 6010C 451 mg/Kg2.1 0.4 2 08/29/17 17:19 08/23/17

Printed 9/1/2017 4:03:13 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708841 **Date Collected:** 08/16/17 14:00 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Date Received: 08/22/17 09:50 **Sample Matrix:** Soil

Sample Name: 401-2-A08-081617 Basis: Dry

Lab Code: K1708841-016

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed I	Oate Extracted	Q
Arsenic	6010C	36.6	mg/Kg	4.2	0.8	2	08/29/17 17:21	08/23/17	
Lead	6010C	445	mg/Kg	2.1	0.4	2	08/29/17 17:21	08/23/17	

Analytical Report

Client: Teck American Incorporated

Service Request: K1708841 **Date Collected:** 08/16/17 15:04 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Date Received: 08/22/17 09:50 **Sample Matrix:** Soil

Sample Name: 401-2-A09-081617 Basis: Dry

Lab Code: K1708841-017

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	ate Extracted	Q
Arsenic	6010C	23.0	mg/Kg	4.1	0.8	2	08/29/17 17:24	08/23/17	
Lead	6010C	222	mg/Kg	2.0	0.4	2	08/29/17 17:24	08/23/17	

Printed 9/1/2017 4:03:14 PM Superset Reference:

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Analytical Report

Service Request: K1708841

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/16/17 16:08

Sample Matrix: Soil Date Received: 08/22/17 09:50

Sample Name: 401-2-A10-081617 **Basis:** Dry

Lab Code: K1708841-018

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 28.1 mg/Kg 3.9 0.8 2 08/29/17 17:26 08/23/17 Lead 6010C 450 mg/Kg2.0 0.4 2 08/29/17 17:26 08/23/17

Analytical Report

Service Request: K1708841

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/16/17 11:12

Sample Matrix: Soil Date Received: 08/22/17 09:50

Sample Name: 401-2-B06-081617 **Basis:** Dry

Lab Code: K1708841-019

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 54.3 mg/Kg 4.2 0.8 2 08/29/17 17:28 08/23/17 Lead 6010C 839 mg/Kg2.1 0.4 2 08/29/17 17:28 08/23/17

Printed 9/1/2017 4:03:14 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708841 **Date Collected:** 08/16/17 13:11 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-B07-081617 Basis: Dry

Lab Code: K1708841-020

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 42.4 mg/Kg 3.8 0.8 2 08/29/17 17:31 08/23/17 Lead 6010C **371** mg/Kg1.9 0.4 2 08/29/17 17:31 08/23/17

Printed 9/1/2017 4:03:14 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708841

Project: August 2017 Sampling SAT Study/B0095010.0005.00001

Date Collected: NA

Sample Matrix: So

Date Received: NA

•

Soil

Sample Name: Lab Code: Method Blank KQ1712039-02 Basis: Dry

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	ate Extracted	Q
Arsenic	6010C	ND U	mg/Kg	4	0.8	2	08/29/17 16:20	08/23/17	
Lead	6010C	ND U	mg/Kg	2	0.4	2	08/29/17 16:20	08/23/17	

QA/QC Report

Client:Teck American IncorporatedService Request:K1708841Project:August 2017 Sampling SAT Study/B0095010.0005.00001Date Collected:08/19/17Sample Matrix:SoilDate Received:08/22/17Date Analyzed:08/29/17

Duplicate Matrix Spike Summary

Date Extracted:

08/23/17

Total Metals

 Sample Name:
 258-2-I09-081917
 Units: mg/Kg

 Lab Code:
 K1708841-001
 Basis: Dry

Analysis Method: 6010C **Prep Method:** EPA 3050B

Matrix SpikeDuplicate Matrix SpikeKQ1712039-03KQ1712039-04

	Sample		Spike			Spike		% Rec		RPD
Analyte Name	Result	Result	Amount	% Rec	Result	Amount	% Rec	Limits	RPD	Limit
Arsenic	18.3	112	97.7	96	112	98.2	96	75-125	<1	30
Lead	136	227	97.7	93	222	98.2	87	75-125	2	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

QA/QC Report

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Analyzed:** 08/29/17

Sample Matrix: Soil

Lab Control Sample Summary Total Metals

Units:mg/Kg
Basis:Dry

Service Request: K1708841

Lab Control Sample KQ1712039-01

Analyte Name Analytical Method Result **Spike Amount** % Rec % Rec Limits Arsenic 6010C 503 500 101 80-120 Lead 6010C 492 500 98 80-120



ALS Environmental
ALS Group USA, Corp
1317 South 13th Avenue
Kelso, WA 98626

T:+1 360 577 7222

F:+1 360 636 1068 www.alsglobal.com

September 05, 2017

Analytical Report for Service Request No: K1708842

Dave Enos Teck American Incorporated 501 North Riverpoint Blvd., Suite 300 Spokane, WA 99202

RE: August 2017 Sampling SAT Study / B0095010.0005.00001

Dear Dave,

Enclosed are the results of the sample(s) submitted to our laboratory August 22, 2017 For your reference, these analyses have been assigned our service request number **K1708842**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3330. You may also contact me via email at Jeff.Coronado@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Jeff Coronado Metals Department

Manager



ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue Kelso, WA 98626

T: +1 360 577 7222 F: +1 360 636 1068 www.alsglobal.com

Table of Contents

Acronyms

Qualifiers

State Certifications, Accreditations, And Licenses

Case Narrative

Chain of Custody

Total Solids

Metals

Acronyms

ASTM American Society for Testing and Materials

A2LA American Association for Laboratory Accreditation

CARB California Air Resources Board

CAS Number Chemical Abstract Service registry Number

CFC Chlorofluorocarbon
CFU Colony-Forming Unit

DEC Department of Environmental Conservation

DEQ Department of Environmental Quality

DHS Department of Health Services

DOE Department of Ecology
DOH Department of Health

EPA U. S. Environmental Protection Agency

ELAP Environmental Laboratory Accreditation Program

GC Gas Chromatography

GC/MS Gas Chromatography/Mass Spectrometry

LOD Limit of Detection
LOO Limit of Quantitation

LUFT Leaking Underground Fuel Tank

M Modified

MCL Maximum Contaminant Level is the highest permissible concentration of a substance

allowed in drinking water as established by the USEPA.

MDL Method Detection Limit
MPN Most Probable Number
MRL Method Reporting Limit

NA Not Applicable
NC Not Calculated

NCASI National Council of the Paper Industry for Air and Stream Improvement

ND Not Detected

NIOSH National Institute for Occupational Safety and Health

PQL Practical Quantitation Limit

RCRA Resource Conservation and Recovery Act

SIM Selected Ion Monitoring

TPH Total Petroleum Hydrocarbons

tr Trace level is the concentration of an analyte that is less than the PQL but greater than or

equal to the MDL.

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- \boldsymbol{Q} $\;\;$ See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L14-51
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	_
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
	https://deq.nc.gov/about/divisions/water-resources/water-resources-	
	data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-	
North Carolina DEQ	certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaborator	
Oregon – DEQ (NELAP)	yAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.



Case Narrative

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

ALS ENVIRONMENTAL

Client: Teck American Incorporated Service Request No.: K1708842

Project: August 2017 Sampling SAT Study/ Date Received: 08/22/17

B0095010.0005.00001

Sample Matrix: Soil

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

Sample Receipt

Twenty soil samples were received for analysis at ALS Environmental on 08/22/17. The samples were received in good condition and consistent with the accompanying chain of custody form, except where noted on the cooler receipt and preservation form included in this report.. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Total Metals

No anomalies associated with the analysis of these samples were observed.

Approved by



Chain of Custody

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

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Date PAGE 2-4 OF 20 /0

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1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

K1708842

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1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

K1708842

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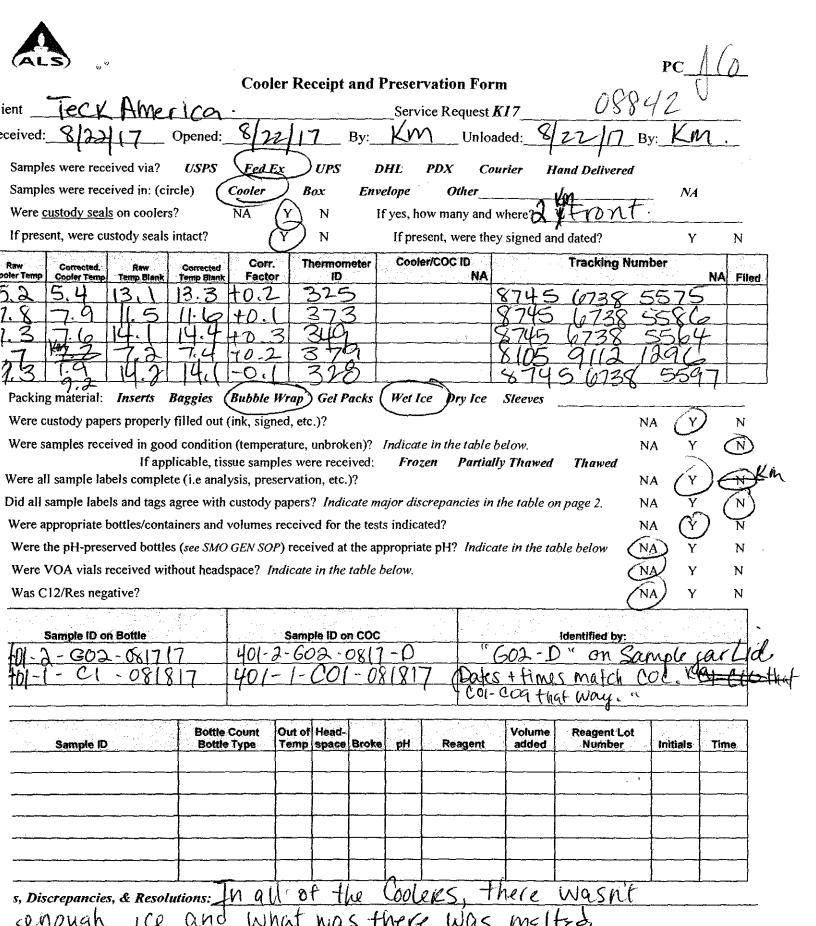
1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

K1708842

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Date/7	med Name: Arcadis ate/Time: 8/21/17 1300]	Date/Time:	01/20/82 00/6			Date/Time: Date/Time:						



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25/16

Page __of___



Total Solids

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Client: Teck American Incorporated

Service Request: K1708842 **Date Collected:** 08/16/17 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix:

Analysis Method:

Soil

160.3 Modified Units: Percent

Prep Method: None Basis: As Received

Date Received: 08/22/17

Solids, Total

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
401-2-B08-081617	K1708842-001	93.7	-	-	1	08/25/17 16:15	
401-2-B09-081617	K1708842-002	95.3	-	-	1	08/25/17 16:15	
401-2-B10-081617	K1708842-003	95.2	-	-	1	08/25/17 16:15	
401-2-B07-081617-D	K1708842-004	95.6	-	-	1	08/25/17 16:15	
401-2-C06-081617	K1708842-005	94.4	-	=	1	08/25/17 16:15	
401-2-C07-081617	K1708842-006	94.1	-	-	1	08/25/17 16:15	
401-2-C08-081617	K1708842-007	95.4	-	-	1	08/25/17 16:15	
401-2-C09-081617	K1708842-008	96.7	-	-	1	08/25/17 16:15	
401-2-C10-081617	K1708842-009	96.3	-	-	1	08/25/17 16:15	
401-2-C09-081617-D	K1708842-010	95.8	-	=	1	08/25/17 16:15	
401-2-D06-081617	K1708842-011	93.8	-	-	1	08/25/17 16:15	
401-2-D07-081617	K1708842-012	95.7	-	-	1	08/25/17 16:15	
401-2-D08-081617	K1708842-013	95.2	-	-	1	08/25/17 16:15	
401-2-D09-081617	K1708842-014	95.0	-	-	1	08/25/17 16:15	
401-2-D10-081617	K1708842-015	96.2	-	-	1	08/25/17 16:15	
401-2-E06-081617	K1708842-016	92.1	-	-	1	08/25/17 16:15	
401-2-E07-081617	K1708842-017	92.4	-	-	1	08/25/17 16:15	
401-2-E08-081617	K1708842-018	95.1	-	-	1	08/25/17 16:15	
401-2-E09-081617	K1708842-019	95.4	-	-	1	08/25/17 16:15	
401-2-E10-081617	K1708842-020	90.7	-	-	1	08/25/17 16:15	

QA/QC Report

Client: Teck American Incorporated

Project August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Analysis Method:

160.3 Modified

Prep Method: None

Service Request:K1708842 Date Collected:08/16/17 Date Received:08/22/17

Units:Percent

Basis: As Received

Replicate Sample Summary Inorganic Parameters

			Sample	Duplicate			RPD	Date
Sample Name:	Lab Code:	MRL	Result	Result	Average	RPD	Limit	Analyzed
401-2-B08-081617	K1708842-001DUP	-	93.7	93.0	93.4	<1	20	08/25/17
401-2-D06-081617	K1708842-011DUP	-	93.8	94.2	94.0	<1	20	08/25/17

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Printed 09/05/17 12:50:55 PM Superset Reference:17-0000434659 rev 00



Metals

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Client: Teck American Incorporated

Service Request: K1708842 **Date Collected:** 08/16/17 14:03 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-B08-081617 Basis: Dry

Lab Code: K1708842-001

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 35.8 mg/Kg 4.0 0.8 2 08/29/17 17:38 08/23/17 Lead 6010C 723 mg/Kg2.0 0.4 2 08/29/17 17:38 08/23/17

Printed 9/1/2017 4:01:58 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708842 **Date Collected:** 08/16/17 15:07 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-B09-081617 Basis: Dry

Lab Code: K1708842-002

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 45.6 mg/Kg 4.1 0.8 2 08/29/17 17:58 08/23/17 Lead 6010C 488 mg/Kg2.1 0.4 2 08/29/17 17:58 08/23/17

Printed 9/1/2017 4:01:59 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708842 **Date Collected:** 08/16/17 16:12 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-B10-081617 Basis: Dry

Lab Code: K1708842-003

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 32.0 mg/Kg 3.9 0.8 2 08/29/17 18:01 08/23/17 Lead 6010C 287 mg/Kg1.9 0.4 2 08/29/17 18:01 08/23/17

Printed 9/1/2017 4:01:59 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708842 **Date Collected:** 08/16/17 13:11 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Date Received: 08/22/17 09:50 **Sample Matrix:** Soil

Sample Name: 401-2-B07-081617-D Basis: Dry

Lab Code: K1708842-004

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	ate Extracted	Q
Arsenic	6010C	34.1	mg/Kg	4.0	0.8	2	08/29/17 18:03	08/23/17	
Lead	6010C	298	mg/Kg	2.0	0.4	2	08/29/17 18:03	08/23/17	

Analytical Report

Client: Teck American Incorporated

Service Request: K1708842 **Date Collected:** 08/16/17 11:15 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-C06-081617 Basis: Dry

Lab Code: K1708842-005

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 55.5 mg/Kg 4.1 0.8 2 08/29/17 18:05 08/23/17 Lead 6010C **507** mg/Kg2.1 0.4 2 08/29/17 18:05 08/23/17

Printed 9/1/2017 4:01:59 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708842 **Date Collected:** 08/16/17 13:15 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-C07-081617 Basis: Dry

Lab Code: K1708842-006

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 62.8 mg/Kg 4.1 0.8 2 08/29/17 18:08 08/23/17 Lead 6010C 666 mg/Kg2.1 0.4 2 08/29/17 18:08 08/23/17

Printed 9/1/2017 4:01:59 PM Superset Reference:

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Analytical Report

Service Request: K1708842

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/16/17 14:06

Sample Matrix: Soil Date Received: 08/22/17 09:50

Sample Name: 401-2-C08-081617 **Basis:** Dry

Lab Code: K1708842-007

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 34.5 mg/Kg 3.8 0.8 2 08/29/17 18:10 08/23/17 Lead 6010C **550** mg/Kg1.9 0.4 2 08/29/17 18:10 08/23/17

Printed 9/1/2017 4:01:59 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708842 **Date Collected:** 08/16/17 15:11 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-C09-081617 Basis: Dry

Lab Code: K1708842-008

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 17.5 mg/Kg 4.0 0.8 2 08/29/17 18:12 08/23/17 Lead 6010C 154 mg/Kg2.0 0.4 2 08/29/17 18:12 08/23/17

Printed 9/1/2017 4:01:59 PM Superset Reference:

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Analytical Report

Service Request: K1708842

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/16/17 16:17

Sample Matrix: Soil Date Received: 08/22/17 09:50

Sample Name: 401-2-C10-081617 **Basis:** Dry

Lab Code: K1708842-009

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 81.6 mg/Kg 4.0 0.8 2 08/29/17 18:22 08/23/17 Lead 6010C 494 mg/Kg2.0 0.4 2 08/29/17 18:22 08/23/17

Printed 9/1/2017 4:01:59 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708842 **Date Collected:** 08/16/17 15:11 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Date Received: 08/22/17 09:50 **Sample Matrix:** Soil

Sample Name: 401-2-C09-081617-D Basis: Dry

Lab Code: K1708842-010

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	ate Extracted	Q
Arsenic	6010C	19.3	mg/Kg	4.1	0.8	2	08/29/17 18:24	08/23/17	
Lead	6010C	298	mg/Kg	2.1	0.4	2	08/29/17 18:24	08/23/17	

Printed 9/1/2017 4:01:59 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708842 **Date Collected:** 08/16/17 11:22 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-D06-081617 Basis: Dry

Lab Code: K1708842-011

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 65.3 mg/Kg 4.1 0.8 2 08/29/17 18:26 08/23/17 Lead 6010C 1430 mg/Kg2.1 0.4 2 08/29/17 18:26 08/23/17

Printed 9/1/2017 4:01:59 PM Superset Reference:

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Analytical Report

Service Request: K1708842

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/16/17 13:19

Sample Matrix: Soil Date Received: 08/22/17 09:50

Sample Name: 401-2-D07-081617 **Basis:** Dry

Lab Code: K1708842-012

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 49.8 mg/Kg 4.1 0.8 2 08/29/17 18:29 08/23/17 Lead 6010C 340 mg/Kg2.0 0.4 2 08/29/17 18:29 08/23/17

Printed 9/1/2017 4:01:59 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708842 **Date Collected:** 08/16/17 14:13 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-D08-081617 Basis: Dry

Lab Code: K1708842-013

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 48.1 mg/Kg 4.0 0.8 2 08/29/17 18:31 08/23/17 Lead 6010C 572 mg/Kg2.0 0.4 2 08/29/17 18:31 08/23/17

Printed 9/1/2017 4:01:59 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708842 **Date Collected:** 08/16/17 15:34 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-D09-081617 Basis: Dry

Lab Code: K1708842-014

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q 45.2 Arsenic 6010C mg/Kg 4.0 0.8 2 08/29/17 18:33 08/23/17 Lead 6010C 499 mg/Kg2.0 0.4 2 08/29/17 18:33 08/23/17

Printed 9/1/2017 4:01:59 PM Superset Reference:

Analytical Report

Client: Teck American Incorporated

Service Request: K1708842 **Date Collected:** 08/16/17 16:21 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-D10-081617 Basis: Dry

Lab Code: K1708842-015

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 53.1 mg/Kg 4.0 0.8 2 08/29/17 18:36 08/23/17 Lead 6010C 1020 mg/Kg2.0 0.4 2 08/29/17 18:36 08/23/17

Printed 9/1/2017 4:01:59 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708842 **Date Collected:** 08/16/17 11:36 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-E06-081617 Basis: Dry

Lab Code: K1708842-016

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 73.2 mg/Kg 4.2 0.8 2 08/29/17 18:38 08/23/17 Lead 6010C 1020 mg/Kg2.1 0.4 2 08/29/17 18:38 08/23/17

Printed 9/1/2017 4:01:59 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708842 **Date Collected:** 08/16/17 13:22 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-E07-081617 Basis: Dry

Lab Code: K1708842-017

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 71.8 mg/Kg 4.1 0.8 2 08/29/17 18:40 08/23/17 Lead 6010C 1010 mg/Kg2.1 0.4 2 08/29/17 18:40 08/23/17

Printed 9/1/2017 4:02:00 PM Superset Reference:

Analytical Report

Client: Teck American Incorporated

Service Request: K1708842 **Date Collected:** 08/16/17 14:15 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-E08-081617 Basis: Dry

Lab Code: K1708842-018

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 35.2 mg/Kg 4.1 0.8 2 08/29/17 18:42 08/23/17 Lead 6010C **580** mg/Kg2.0 0.4 2 08/29/17 18:42 08/23/17

Printed 9/1/2017 4:02:00 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708842 **Date Collected:** 08/16/17 15:38 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-E09-081617 Basis: Dry

Lab Code: K1708842-019

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 49.9 mg/Kg 4.0 0.8 2 08/29/17 18:52 08/23/17 Lead 6010C 1080 mg/Kg2.0 0.4 2 08/29/17 18:52 08/23/17

Printed 9/1/2017 4:02:00 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708842 **Date Collected:** 08/16/17 16:25 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-E10-081617 Basis: Dry

Lab Code: K1708842-020

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 55.4 mg/Kg 4.2 0.8 2 08/29/17 18:54 08/23/17 Lead 6010C 1370 mg/Kg2.1 0.4 2 08/29/17 18:54 08/23/17

Printed 9/1/2017 4:02:00 PM Superset Reference:

Analytical Report

Client: Teck American Incorporated

Service Request: K1708842

Project: August 2017 Sampling SAT Study/B0095010.0005.00001

Date Collected: NA

Sample Matrix: Soil

~ ..

Date Received: NA

Sample Name:

Method Blank

Basis: Dry

Lab Code: KQ1712059-02

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	Pate Extracted	Q
Arsenic	6010C	ND U	mg/Kg	4	0.8	2	08/29/17 17:33	08/23/17	
Lead	6010C	ND U	mg/Kg	2	0.4	2	08/29/17 17:33	08/23/17	

Printed 9/1/2017 4:02:00 PM Superset Reference:

QA/QC Report

Client: Teck American Incorporated

Project: August 2017 Sampling SAT St

August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Service Request: Date Collected: K1708842

Date Received:

08/16/17 08/22/17

Date Analyzed:

08/29/17

Date Extracted:

Units:

Basis:

08/23/17

Duplicate Matrix Spike Summary

Total Metals

Sample Name:

401-2-B08-081617

mg/Kg

Dry

Lab Code:

K1708842-001

Analysis Method: Prep Method:

6010C

EPA 3050B

Duplicate Matrix Spike

Matrix Spike KQ1712059-03

KQ1712059-04

	Sample		Spike			Spike		% Rec		RPD
Analyte Name	Result	Result	Amount	% Rec	Result	Amount	% Rec	Limits	RPD	Limit
Arsenic	35.8	134	101	97	135	101	98	75-125	<1	30
Lead	723	794	101	71 #	654	101	-68 #	75-125	19	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Printed 9/1/2017 4:02:00 PM Superset Reference:

QA/QC Report

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001

Analytical Method

6010C

6010C

Sample Matrix: Soil

Analyte Name

Arsenic

Lead

Service Request: K1708842 Date Analyzed: 08/29/17

99

96

Lab Control Sample Summary Total Metals

Units:mg/Kg
Basis:Dry

80-120

80-120

Lab Control Sample KQ1712059-01

493

482

Result Spike Amount % Rec % Rec Limits

500

500

Printed 9/1/2017 4:02:00 PM Superset Reference:



ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue Kelso, WA 98626

T:+1 360 577 7222

F: +1 360 636 1068 www.alsglobal.com

September 05, 2017

Analytical Report for Service Request No: K1708843

Dave Enos Teck American Incorporated 501 North Riverpoint Blvd., Suite 300 Spokane, WA 99202

RE: August 2017 Sampling SAT Study / B0095010.0005.00001

Dear Dave.

Enclosed are the results of the sample(s) submitted to our laboratory August 22, 2017 For your reference, these analyses have been assigned our service request number **K1708843**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3330. You may also contact me via email at Jeff.Coronado@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Jeff Coronado Metals Department

Manager



ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue Kelso, WA 98626

T: +1 360 577 7222 F: +1 360 636 1068 www.alsglobal.com

Table of Contents

Acronyms

Qualifiers

State Certifications, Accreditations, And Licenses

Case Narrative

Chain of Custody

Total Solids

Metals

Acronyms

ASTM American Society for Testing and Materials

A2LA American Association for Laboratory Accreditation

CARB California Air Resources Board

CAS Number Chemical Abstract Service registry Number

CFC Chlorofluorocarbon
CFU Colony-Forming Unit

DEC Department of Environmental Conservation

DEQ Department of Environmental Quality

DHS Department of Health Services

DOE Department of Ecology
DOH Department of Health

EPA U. S. Environmental Protection Agency

ELAP Environmental Laboratory Accreditation Program

GC Gas Chromatography

GC/MS Gas Chromatography/Mass Spectrometry

LOD Limit of Detection
LOO Limit of Quantitation

LUFT Leaking Underground Fuel Tank

M Modified

MCL Maximum Contaminant Level is the highest permissible concentration of a substance

allowed in drinking water as established by the USEPA.

MDL Method Detection Limit
MPN Most Probable Number
MRL Method Reporting Limit

NA Not Applicable
NC Not Calculated

NCASI National Council of the Paper Industry for Air and Stream Improvement

ND Not Detected

NIOSH National Institute for Occupational Safety and Health

PQL Practical Quantitation Limit

RCRA Resource Conservation and Recovery Act

SIM Selected Ion Monitoring

TPH Total Petroleum Hydrocarbons

tr Trace level is the concentration of an analyte that is less than the PQL but greater than or

equal to the MDL.

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- \boldsymbol{Q} $\;\;$ See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L14-51
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	_
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
	https://deq.nc.gov/about/divisions/water-resources/water-resources-	
	data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-	
North Carolina DEQ	certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaborator	
Oregon – DEQ (NELAP)	yAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.



Case Narrative

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

ALS ENVIRONMENTAL

Client: Teck American Incorporated Service Request No.: K1708843

Project: August 2017 Sampling SAT Study/ Date Received: 08/22/17

B0095010.0005.00001

Sample Matrix: Soil

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

Sample Receipt

Twenty soil samples were received for analysis at ALS Environmental on 08/22/17. The samples were received in good condition and consistent with the accompanying chain of custody form, except where noted on the cooler receipt and preservation form included in this report.. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Total Metals

Relative Percent Difference Exceptions:

The Relative Percent Difference (RPD) for the replicate analysis of Lead in sample 401-2-F08-081617 was outside the project specified control limits. The variability in the results was attributed to the heterogeneous character of the sample. Standard mixing techniques were used, but were not sufficient for complete homogenization of this sample.

Matrix Spike Recovery Exceptions:

The matrix spike recovery of Lead for sample 401-2-F08-081617 was outside the project specified control criteria as a result of the heterogeneous character of the sample. The Relative Percent Difference (RPD) for the replicate analysis supported this. Since the unspiked sample contained high analyte concentrations relative to the amount spiked, the variability between replicates was sufficient to bias the percent recoveries outside the control criteria. The associated QA/QC results (e.g. control sample, calibration standards, etc.) indicated the analysis was in control. No further corrective action was appropriate.

No other anomalies associated with the analysis of these samples were observed.

Approved by



Chain of Custody

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

K1408847

PAGE 6-12 OF 20-10
SD# 6-17 2/19/17 WM 2/19/17

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City, State, Zip: <u>Buffalo, WY 8</u>	12834 FAX:	<u>307-684-59</u>	<u>51</u>		r of	nic 3					
Sampler's Signature:					Number	ead/arsenic 3050B/6010					
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ALS Envil-mental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

K1708843

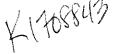
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(360) 577-7222 FAX (360) 636-1068



Date
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ALS Envir ...mental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068



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Cooler Receipt and Preservation Form

ent Teck	Amer	100.			Serv	rice Request	K17_	0884	3	,
ceived: 8/22	17 0	Opened: 8	22/17	By:	Kr	<u> </u>	aded: 8	22/17	3y: K 11	1.
Samples were rece	ived via?	USPS Fed	(E_X)	U PS	DHL	PDX Co	urier H	{ and Delivered		
Samples were rece	ived in: (circ	cle) <i>Cooler</i>	Bo	x Ei	ivelope	Other_		Von	<i>NA</i>	
Were <u>custody seals</u>	on coolers?	NA		N	If yes, h	ow many and	where	Front	· ·	
If present, were cu	stody seals in	ntact?	(Y)	N		esent, were the	ey signed ar		Y	N
Raw Corrected. Her Temp Cooler Temp	Raw Temp Blank	Corrected Co Temp Blank Fac		ermometer ID	Coo	er/COC ID NA		Tracking Nur	nber	NA Filed
2 5.4	13.1	13.3 40.	2 3	25			8745	6738 5	5575	5
7.9	#5	11.0 +0	1 3	73	+		8746	10738	SSXC	2
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13 19	14.2	14. (1-0.	1 2	18			874	5 6734	550	7
Packing material:	Inserts B	aggies Bubbl	e Wrap	Gel Packs	Wet I	ce pry Ice	Sleeves			
Were custody pape	rs properly f	illed out (ink, si	gned, etc.))?				í	NA (Y	и (
Were samples rece	_	` •		,					NA Y	N
Were all sample lab		icable, tissue sar	•		: Fro	zen Partia	lly Thawed		NA (Y) and
Did all sample label	•	•			maior di	screnancies in	the table o		NA Y	
Were appropriate b		=			_	-	inc idea		NA (Ý	ヽしノ
Were the pH-prese							ate in the ta	_	Y (AN	N ·
Were VOA vials r			•			·			NA) Y	N
Was C12/Res nega	ative?							7	NA) Y	N
Sample ID or	Bottle	7 401	- 3 - 60:	e ID on CC	C 7 - ∩	- tr	G01 - 1	Identified by:	mole	artid
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25/16										



Total Solids

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Client: Teck American Incorporated

Service Request: K1708843 **Date Collected:** 08/16/17 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix:

Analysis Method:

Soil

160.3 Modified

Prep Method: None **Date Received:** 08/22/17 Units: Percent

Basis: As Received

Solids, Total

Sample Name	Lab Code	Result	MRL	MRL MDL		Date Analyzed	Q
401-2-F06-081617	K1708843-001	94.1	-	-	1	08/25/17 16:15	
401-2-F07-081617	K1708843-002	84.2	-	-	1	08/25/17 16:15	
401-2-F08-081617	K1708843-003	94.4	-	-	1	08/25/17 16:15	
401-2-F09-081617	K1708843-004	94.4	-	-	1	08/25/17 16:15	
401-2-F10-081617	K1708843-005	95.1	-	-	1	08/25/17 16:15	
401-2-G06-081617	K1708843-006	95.4	-	-	1	08/25/17 16:15	
401-2-G07-081617	K1708843-007	94.1	-	-	1	08/25/17 16:15	
401-2-G08-081617	K1708843-008	91.9	-	-	1	08/25/17 16:15	
401-2-G09-081617	K1708843-009	91.7	-	-	1	08/25/17 16:15	
401-2-G10-081617	K1708843-010	91.0	-	-	1	08/25/17 16:15	
401-2-H06-081617	K1708843-011	91.5	-	-	1	08/25/17 16:15	
401-2-H07-081617	K1708843-012	92.4	-	-	1	08/25/17 16:15	
401-2-H08-081617	K1708843-013	87.7	-	-	1	08/25/17 16:15	
401-2-H09-081617	K1708843-014	94.3	-	-	1	08/25/17 16:15	
401-2-H10-081617	K1708843-015	95.4	-	-	1	08/25/17 16:15	
401-2-I06-081617	K1708843-016	94.6	-	-	1	08/25/17 16:15	
401-2-I07-081617	K1708843-017	85.9	-	-	1	08/25/17 16:15	
401-2-I08-081617	K1708843-018	79.5	-	-	1	08/25/17 16:15	
401-2-I09-081617	K1708843-019	94.6	-	-	1	08/25/17 16:15	
401-2-I10-081617	K1708843-020	94.4	-	-	1	08/25/17 16:15	

QA/QC Report

Client: Teck American Incorporated

Project August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Analysis Method:

160.3 Modified

Prep Method: None

Service Request: K1708843 Date Collected: 08/16/17

Date Received:08/22/17

Units:Percent

Basis: As Received

Replicate Sample Summary Inorganic Parameters

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
401-2-F06-081617	K1708843-001DUP	-	94.1	93.9	94.0	<1	20	08/25/17
401-2-H06-081617	K1708843-011DUP	_	91.5	89.5	90.5	2	20	08/25/17

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Printed 09/05/17 12:56:25 PM Superset Reference:17-0000434658 rev 00



Metals

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Client: Teck American Incorporated

Service Request: K1708843 **Date Collected:** 08/16/17 11:39 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-F06-081617 Basis: Dry

Lab Code: K1708843-001

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 45.0 mg/Kg 4.2 0.8 2 08/29/17 19:12 08/24/17 Lead 6010C 706 mg/Kg2.1 0.4 2 08/29/17 19:12 08/24/17

Printed 9/1/2017 4:05:06 PM Superset Reference:

Analytical Report

Client: Teck American Incorporated

Service Request: K1708843 **Date Collected:** 08/16/17 13:27 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-F07-081617 Basis: Dry

Lab Code: K1708843-002

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 13.8 mg/Kg 4.4 0.9 2 08/29/17 19:22 08/24/17 Lead 6010C 402 mg/Kg2.2 0.4 2 08/29/17 19:22 08/24/17

Printed 9/1/2017 4:05:06 PM Superset Reference:

Page 19 of 40

Analytical Report

Client: Teck American Incorporated

Service Request: K1708843 **Date Collected:** 08/16/17 14:20 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-F08-081617 Basis: Dry

Lab Code: K1708843-003

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 39.7 mg/Kg 4.2 0.8 2 08/29/17 19:01 08/24/17 Lead 6010C 347 mg/Kg2.1 0.4 2 08/29/17 19:01 08/24/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708843 **Date Collected:** 08/16/17 15:42 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-F09-081617 Basis: Dry

Lab Code: K1708843-004

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 29.4 mg/Kg 4.0 0.8 2 08/29/17 19:24 08/24/17 Lead 6010C 478 mg/Kg2.0 0.4 2 08/29/17 19:24 08/24/17

Printed 9/1/2017 4:05:07 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708843 **Date Collected:** 08/16/17 16:29 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-F10-081617 Basis: Dry

Lab Code: K1708843-005

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 77.8 mg/Kg 3.8 0.8 2 08/29/17 19:26 08/24/17 Lead 6010C 809 mg/Kg1.9 0.4 2 08/29/17 19:26 08/24/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708843 **Date Collected:** 08/16/17 11:43 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-G06-081617 Basis: Dry

Lab Code: K1708843-006

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 84.3 mg/Kg 4.0 0.8 2 08/29/17 19:29 08/24/17 Lead 6010C 907 mg/Kg2.0 0.4 2 08/29/17 19:29 08/24/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708843 **Date Collected:** 08/16/17 13:31 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-G07-081617 Basis: Dry

Lab Code: K1708843-007

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 63.0 mg/Kg 4.1 0.8 2 08/29/17 19:31 08/24/17 Lead 6010C 357 mg/Kg2.0 0.4 2 08/29/17 19:31 08/24/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708843 **Date Collected:** 08/16/17 14:44 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-G08-081617 Basis: Dry

Lab Code: K1708843-008

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 35.2 mg/Kg 4.0 0.8 2 08/29/17 19:33 08/24/17 Lead 6010C 641 mg/Kg2.0 0.4 2 08/29/17 19:33 08/24/17

Printed 9/1/2017 4:05:07 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708843 **Date Collected:** 08/16/17 15:46 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Date Received: 08/22/17 09:50 **Sample Matrix:** Soil

Sample Name: 401-2-G09-081617 Basis: Dry

Lab Code: K1708843-009

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	ate Extracted	Q
Arsenic	6010C	41.8	mg/Kg	4.2	0.8	2	08/29/17 19:36	08/24/17	
Lead	6010C	551	mg/Kg	2.1	0.4	2	08/29/17 19:36	08/24/17	

Analytical Report

Client: Teck American Incorporated

Service Request: K1708843 **Date Collected:** 08/16/17 16:32 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-G10-081617 Basis: Dry

Lab Code: K1708843-010

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 54.8 mg/Kg 4.3 0.9 2 08/29/17 19:38 08/24/17 Lead 6010C 646 mg/Kg2.2 0.4 2 08/29/17 19:38 08/24/17

Analytical Report

Service Request: K1708843

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/16/17 11:46

Sample Matrix: Soil Date Received: 08/22/17 09:50

Sample Name: 401-2-H06-081617 **Basis:** Dry

Lab Code: K1708843-011

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 82.8 mg/Kg 4.0 0.8 2 08/29/17 19:40 08/24/17 Lead 6010C 1000 mg/Kg2.0 0.4 2 08/29/17 19:40 08/24/17

Printed 9/1/2017 4:05:07 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708843 **Date Collected:** 08/16/17 13:35 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-H07-081617 Basis: Dry

Lab Code: K1708843-012

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 53.7 mg/Kg 4.0 0.8 2 08/29/17 19:43 08/24/17 Lead 6010C 466 mg/Kg2.0 0.4 2 08/29/17 19:43 08/24/17

Printed 9/1/2017 4:05:07 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708843 **Date Collected:** 08/16/17 14:49 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-H08-081617 Basis: Dry

Lab Code: K1708843-013

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 29.5 mg/Kg 4.3 0.9 2 08/29/17 19:52 08/24/17 Lead 6010C 974 mg/Kg2.1 0.4 2 08/29/17 19:52 08/24/17

Printed 9/1/2017 4:05:07 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708843 **Date Collected:** 08/16/17 15:52 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-H09-081617 Basis: Dry

Lab Code: K1708843-014

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 15.7 mg/Kg 4.2 0.8 2 08/29/17 19:54 08/24/17 Lead 6010C **580** mg/Kg2.1 0.4 2 08/29/17 19:54 08/24/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708843 **Date Collected:** 08/16/17 16:36 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-H10-081617 Basis: Dry

Lab Code: K1708843-015

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 22.7 mg/Kg 4.1 0.8 2 08/29/17 19:56 08/24/17 Lead 6010C 475 mg/Kg2.1 0.4 2 08/29/17 19:56 08/24/17

Printed 9/1/2017 4:05:07 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708843 **Date Collected:** 08/16/17 11:52 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-I06-081617 Basis: Dry

Lab Code: K1708843-016

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 49.0 mg/Kg 4.1 0.8 2 08/29/17 19:59 08/24/17 Lead 6010C 533 mg/Kg2.1 0.4 2 08/29/17 19:59 08/24/17

Printed 9/1/2017 4:05:07 PM Superset Reference:

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Analytical Report

Service Request: K1708843

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/16/17 13:40

Sample Matrix: Soil Date Received: 08/22/17 09:50

Sample Name: 401-2-I07-081617 **Basis:** Dry

Lab Code: K1708843-017

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 65.7 mg/Kg 4.3 0.9 2 08/29/17 20:01 08/24/17 Lead 6010C 384 mg/Kg2.2 0.4 2 08/29/17 20:01 08/24/17

Printed 9/1/2017 4:05:07 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708843 **Date Collected:** 08/16/17 14:55 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-I08-081617 Basis: Dry

Lab Code: K1708843-018

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 82.6 mg/Kg 4.8 1.0 2 08/29/17 20:04 08/24/17 Lead 6010C 1100 mg/Kg2.4 0.5 2 08/29/17 20:04 08/24/17

Printed 9/1/2017 4:05:07 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708843 **Date Collected:** 08/16/17 15:55 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-I09-081617 Basis: Dry

Lab Code: K1708843-019

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 37.0 mg/Kg 4.1 0.8 2 08/29/17 20:06 08/24/17 Lead 6010C 472 mg/Kg2.0 0.4 2 08/29/17 20:06 08/24/17

Printed 9/1/2017 4:05:08 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708843 **Date Collected:** 08/16/17 16:39 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-I10-081617 Basis: Dry

Lab Code: K1708843-020

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 29.0 mg/Kg 4.1 0.8 2 08/29/17 20:08 08/24/17 Lead 6010C 287 mg/Kg2.0 0.4 2 08/29/17 20:08 08/24/17

Printed 9/1/2017 4:05:08 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708843

Project: August 2017 Sampling SAT Study/B0095010.0005.00001

Date Collected: NA

Sample Matrix: Soil

nil

Date Received: NA

Sample Name:

Method Blank

Basis: Dry

Lab Code: KQ1712068-02

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	ate Extracted	Q
Arsenic	6010C	ND U	mg/Kg	4	0.8	2	08/29/17 18:56	08/24/17	
Lead	6010C	ND U	mg/Kg	2	0.4	2	08/29/17 18:56	08/24/17	

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QA/QC Report

Client: Teck American Incorporated

August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Service Request:

K1708843

Date Collected:

08/16/17

Date Received: Date Analyzed: 08/22/17 08/29/17

Date Extracted:

08/24/17

Duplicate Matrix Spike Summary

Total Metals

Sample Name:

401-2-F08-081617

Lab Code:

Project:

K1708843-003

Analysis Method:

6010C

Prep Method:

EPA 3050B

Units:

mg/Kg

Basis:

Dry

Matrix Spike KQ1712068-03 **Duplicate Matrix Spike**

KQ1712068-04

	Sample		Spike			Spike		% Rec		RPD
Analyte Name	Result	Result	Amount	% Rec	Result	Amount	% Rec	Limits	RPD	Limit
Arsenic	39.7	136	103	93	139	103	96	75-125	2	30
Lead	347	647	103	290 N	440	103	89	75-125	38*	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

QA/QC Report

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Analyzed:** 08/29/17

Analytical Method

Sample Matrix: Soil

Analyte Name

Lab Control Sample Summary Total Metals

Units:mg/Kg
Basis:Dry

% Rec Limits

Service Request: K1708843

% Rec

Lab Control Sample

KQ1712068-01

Result

Arsenic	6010C	491	500	98	80-120
Lead	6010C	467	500	93	80-120

Spike Amount

Printed 9/1/2017 4:05:08 PM Superset Reference:

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ALS Environmental
ALS Group USA, Corp
1317 South 13th Avenue
Kelso, WA 98626

T:+1 360 577 7222

F:+1 360 636 1068 www.alsglobal.com

September 05, 2017

Analytical Report for Service Request No: K1708844

Dave Enos Teck American Incorporated 501 North Riverpoint Blvd., Suite 300 Spokane, WA 99202

RE: August 2017 Sampling SAT Study / B0095010.0005.00001

Dear Dave,

Enclosed are the results of the sample(s) submitted to our laboratory August 22, 2017 For your reference, these analyses have been assigned our service request number **K1708844**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3330. You may also contact me via email at Jeff.Coronado@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Jeff Coronado Metals Department

Manager



ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue Kelso, WA 98626

T: +1 360 577 7222 F: +1 360 636 1068 www.alsglobal.com

Table of Contents

Acronyms

Qualifiers

State Certifications, Accreditations, And Licenses

Case Narrative

Chain of Custody

Total Solids

Metals

Acronyms

ASTM American Society for Testing and Materials

A2LA American Association for Laboratory Accreditation

CARB California Air Resources Board

CAS Number Chemical Abstract Service registry Number

CFC Chlorofluorocarbon
CFU Colony-Forming Unit

DEC Department of Environmental Conservation

DEQ Department of Environmental Quality

DHS Department of Health Services

DOE Department of Ecology
DOH Department of Health

EPA U. S. Environmental Protection Agency

ELAP Environmental Laboratory Accreditation Program

GC Gas Chromatography

GC/MS Gas Chromatography/Mass Spectrometry

LOD Limit of Detection
LOO Limit of Quantitation

LUFT Leaking Underground Fuel Tank

M Modified

MCL Maximum Contaminant Level is the highest permissible concentration of a substance

allowed in drinking water as established by the USEPA.

MDL Method Detection Limit
MPN Most Probable Number
MRL Method Reporting Limit

NA Not Applicable
NC Not Calculated

NCASI National Council of the Paper Industry for Air and Stream Improvement

ND Not Detected

NIOSH National Institute for Occupational Safety and Health

PQL Practical Quantitation Limit

RCRA Resource Conservation and Recovery Act

SIM Selected Ion Monitoring

TPH Total Petroleum Hydrocarbons

tr Trace level is the concentration of an analyte that is less than the PQL but greater than or

equal to the MDL.

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- \boldsymbol{Q} $\;\;$ See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L14-51
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	_
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
	https://deq.nc.gov/about/divisions/water-resources/water-resources-	
	data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-	
North Carolina DEQ	certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaborator	
Oregon – DEQ (NELAP)	yAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.



Case Narrative

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

ALS ENVIRONMENTAL

Client: Teck American Incorporated Service Request No.: K1708844

Project: August 2017 Sampling SAT Study/ Date Received: 08/22/17

B0095010.0005.00001

Sample Matrix: Soil

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

Sample Receipt

Twenty soil samples were received for analysis at ALS Environmental on 08/22/17. The samples were received in good condition and consistent with the accompanying chain of custody form, except where noted on the cooler receipt and preservation form included in this report.. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Total Metals

Matrix Spike Recovery Exceptions:

The duplicate matrix spike recovery of Lead for sample 401-2-J06-081617 was outside control criteria. Recovery in the Laboratory Control Sample (LCS) was acceptable, which indicated the analytical batch was in control. No further corrective action was appropriate.

No other anomalies associated with the analysis of these samples were observed.

Approved by



Chain of Custody

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

ALS Envir ...mental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068



Date PAGE 020 OF 20 10 SR# 450 5119 112 405119112

									Analys	s Request	ed				
Pro	oject Name: <u>Teck A</u>	merican -	- UCR	<u>SA</u> T	<u>ES</u> Projec	t Number: <u>B0095010.0005.00001</u>		ers	0						
Pro	oject Contact: <u>Kady</u>	Young (Compai	ny: <u>A</u>	rcadis			Containers	109/3						
Co	mpany/Address: <u>189</u>	North C	edar St	reet	Phone: <u>30</u>	7-203-3510 or 810-588-1488		Col	050E						
Cit	y, State, Zip: <u>Buffal</u>	o, WY 828	834 FA	X: <u>3</u>	<u>07-684-596</u>	<u>51</u>		er of	nic 3						
Sar	npler's Signature:							Number	lead/arsenic 3050B/6010						
	Sample I.D.		D۶	ıte	Time	LAB ID	Matrix	Ž	lead					REMARKS	
401	-2-106-08	1617	08/1	6/17	11:56		S	1	X						
	F0L	1			13:53		S	1	X						
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	o: <u>Dave Enos - Teck</u>		-		X	V. EDD									
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ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068



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Projec	ct Contact: <u>Kady Y</u>	oung C	Company: <u>A</u>	Arcadis			Containers	010						
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ALS Envilonmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

K1708844

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Pro	ject Name: <u>Teck An</u>	nerican -	- UCR SAT	ES Projec	t Number: <u>B0095010.0005.00001</u>		.rs							
Pro	ject Contact: <u>Kady Y</u>	oung C	Company: 4	<u>Arcadis</u>			Containers	,6010						
Con	npany/Address: <u>189 l</u>	North Ce	edar Street	Phone: 30	7-203-3510 or 810-588-1488		Con	50B/						
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ALS Envilonmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068



PAGE 3.5 OF 20 10 PAGE 3.5 OF 20 10 SD# 200 8/19/17 200 8/19/17

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Proj	ect Name: Teck A	merican -	- UCR SA	<u> FES</u> Projec	t Number: <u>B0095010.0005.00001</u>		rs Ls				****************			
Proj	ect Contact: <u>Kady Y</u>	Young (Company:	Arcadis			Containers	lead/arsenic 3050B/6010						
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	Coq			11:57		S	1	X						
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Cooler Receipt and Preservation Form	7
ent Teck America. Service Request K17 08844	
ceived: 8/22/17 Opened: 8/22/17 By: KM Unloaded: 8/22/17 By: K	Cm.
Samples were received via? USPS Fed Ex UPS DHL PDX Courier Hand Delivered	
	NA .
Were custody seals on coolers? NA (Y) N If yes, how many and where? WETONT.	
If present, were custody seals intact? N If present, were they signed and dated?	Y N
Raw Corrected Raw Corrected Corr. Thermometer Cooler/COC ID Tracking Number Oler Temp Temp Blank Temp Blank Factor ID NA	NA Filed
1.2 5.4 13.1 13.3 to.2 325 8745 6738 557	15
1.8 7.9 11.5 11.6 to 1 373 8745 6738 558	, 6
7 7 7 7 7 7 7 7 7 9 8 105 9 112 129	27
13 19 14. (1-0.1 328) - 8745 6734 55	597
Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Pry Ice Sleeves	
Were custody papers properly filled out (ink, signed, etc.)?	Ý) N
Were samples received in good condition (temperature, unbroken)? Indicate in the table below.	YN
If applicable, tissue samples were received: Frozen Partially Thawed Thawed Were all sample labels complete (i.e analysis, preservation, etc.)? NA /	Y) Kin
Were all sample labels complete (i.e analysis, preservation, etc.)? NA Did all sample labels and tags agree with custody papers? Indicate major discrepancies in the table on page 2. NA	
Were appropriate bottles/containers and volumes received for the tests indicated?	$\langle \gamma \rangle \stackrel{N}{\vee}$
Were the pH-preserved bottles (see SMO GEN SOP) received at the appropriate pH? Indicate in the table below (NA)	YN
Were VOA vials received without headspace? Indicate in the table below.	Y N
Was C12/Res negative?	Y N
Sample ID on Bottle Sample ID on COC Identified by:	
101-2-GO2-081717 401-2-GO2-0817-D "GO2-D" on Sample	y car Liou
101-1-C1-081817 401-1-C01-081817 Dates + fines match col.	- CI-CII
Bottle Count Out of Head- Volume Reagent Lot Sample ID Bottle Type Temp Space Broke pH Reagent added Number Initia	ls Time
s Discongrains & Resolutions IN Oll 8f the Cholous there into chit	
s, Discrepancies, & Resolutions: In all of the Coolers, there wasn't enough ICE and what was there was melted	
contract the and voice was professor	<u></u>
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25/16 Page	of

Page 13 of 40



Total Solids

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/16/17 - 08/17/17

1 1 M 4 1 C 1

Sample Matrix: Soil Date Received: 08/22/17

Analysis Method:160.3 ModifiedUnits: PercentPrep Method:NoneBasis: As Received

Solids, Total

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
401-2-J06-081617	K1708844-001	94.7	-	-	1	08/23/17 16:44	
401-2-J07-081617	K1708844-002	76.6	-	-	1	08/23/17 16:44	
401-2-J08-081617	K1708844-003	86.3	-	-	1	08/23/17 16:44	
401-2-J09-081617	K1708844-004	93.8	-	-	1	08/23/17 16:44	
401-2-J10-081617	K1708844-005	95.4	-	-	1	08/23/17 16:44	
401-2-A01-081717	K1708844-006	96.2	-	-	1	08/23/17 16:44	
401-2-A02-081717	K1708844-007	95.4	-	-	1	08/23/17 16:44	
401-2-A03-081717	K1708844-008	95.7	-	-	1	08/23/17 16:44	
401-2-A04-081717	K1708844-009	95.6	-	-	1	08/23/17 16:44	
401-2-A05-081717	K1708844-010	96.0	-	-	1	08/23/17 16:44	
401-2-B01-081717	K1708844-011	95.2	-	=	1	08/23/17 16:44	
401-2-B02-081717	K1708844-012	97.0	-	-	1	08/23/17 16:44	
401-2-B03-081717	K1708844-013	93.6	-	-	1	08/23/17 16:44	
401-2-B04-081717	K1708844-014	93.8	-	-	1	08/23/17 16:44	
401-2-B05-081717	K1708844-015	92.1	-	-	1	08/23/17 16:44	
401-2-C01-081717	K1708844-016	97.1	-	-	1	08/23/17 16:44	
401-2-C02-081717	K1708844-017	96.7	-	-	1	08/23/17 16:44	
401-2-C03-081717	K1708844-018	93.6	-	-	1	08/23/17 16:44	
401-2-C04-081717	K1708844-019	94.9	-	-	1	08/23/17 16:44	
401-2-C05-081717	K1708844-020	94.6	-	-	1	08/23/17 16:44	

Service Request: K1708844

QA/QC Report

Client: Teck American Incorporated

Project August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Analysis Method: 160.3 Modified

Prep Method: None

Service Request:K1708844

Date Collected:08/16/17 - 08/17/17

Date Received: 08/22/17

Units:Percent

Basis: As Received

Replicate Sample Summary Inorganic Parameters

			Sample	Duplicate			RPD	Date	
Sample Name:	Lab Code:	MRL	Result	Result	Average	RPD	Limit	Analyzed	
Batch QC	K1708841-001DUP	-	99.2	99.2	99.2	<1	20	08/23/17	
Batch QC	K1708841-011DUP	-	98.6	98.8	98.7	<1	20	08/23/17	
401-2-J06-081617	K1708844-001DUP	-	94.7	94.7	94.7	<1	20	08/23/17	
401-2-B01-081717	K1708844-011DUP	-	95.2	95.1	95.2	<1	20	08/23/17	

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Printed 8/24/2017 3:54:35 PM Superset Reference:17-0000434370 rev 00



Metals

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Client: Teck American Incorporated

Service Request: K1708844 **Date Collected:** 08/16/17 11:56 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-J06-081617 Basis: Dry

Lab Code: K1708844-001

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 26.4 mg/Kg 4.2 2.1 2 08/30/17 17:54 08/23/17 Lead 6010C 288 mg/Kg2.1 0.7 2 08/30/17 17:54 08/23/17

Printed 9/1/2017 4:06:22 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708844 **Date Collected:** 08/16/17 13:53 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-J07-081617 Basis: Dry

Lab Code: K1708844-002

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 44.7 mg/Kg 4.5 2.2 2 08/30/17 18:12 08/23/17 Lead 6010C 926 mg/Kg2.2 0.8 2 08/30/17 18:12 08/23/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708844 **Date Collected:** 08/16/17 14:59 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-J08-081617 Basis: Dry

Lab Code: K1708844-003

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 36.9 mg/Kg 4.5 2.2 2 08/30/17 18:14 08/23/17 Lead 6010C 1300 mg/Kg2.2 0.8 2 08/30/17 18:14 08/23/17

Printed 9/1/2017 4:06:23 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708844 **Date Collected:** 08/16/17 16:03 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-J09-081617 Basis: Dry

Lab Code: K1708844-004

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 37.4 mg/Kg 3.8 1.9 2 08/30/17 18:16 08/23/17 Lead 6010C 574 mg/Kg1.9 0.7 2 08/30/17 18:16 08/23/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708844 **Date Collected:** 08/16/17 16:42 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-J10-081617 Basis: Dry

Lab Code: K1708844-005

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 28.8 mg/Kg 4.0 2.0 2 08/30/17 18:19 08/23/17 Lead 6010C 317 mg/Kg2.0 0.7 2 08/30/17 18:19 08/23/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708844 **Date Collected:** 08/17/17 10:51 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-A01-081717 Basis: Dry

Lab Code: K1708844-006

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 18.3 mg/Kg 3.9 1.9 2 08/30/17 18:21 08/23/17 Lead 6010C 273 mg/Kg1.9 0.7 2 08/30/17 18:21 08/23/17

Printed 9/1/2017 4:06:23 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708844 **Date Collected:** 08/17/17 10:55 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-A02-081717 Basis: Dry

Lab Code: K1708844-007

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 32.8 mg/Kg 3.8 1.9 2 08/30/17 18:23 08/23/17 Lead 6010C 495 mg/Kg1.9 0.7 2 08/30/17 18:23 08/23/17

Printed 9/1/2017 4:06:23 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708844 **Date Collected:** 08/17/17 11:01 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-A03-081717 Basis: Dry

Lab Code: K1708844-008

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 38.7 mg/Kg 4.0 2.0 2 08/30/17 18:26 08/23/17 Lead 6010C 377 mg/Kg2.0 0.7 2 08/30/17 18:26 08/23/17

Printed 9/1/2017 4:06:23 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708844 **Date Collected:** 08/17/17 11:06 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-A04-081717 Basis: Dry

Lab Code: K1708844-009

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 68.9 mg/Kg 3.5 1.8 2 08/30/17 18:28 08/23/17 Lead 6010C **788** mg/Kg1.8 0.6 2 08/30/17 18:28 08/23/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708844 **Date Collected:** 08/17/17 11:09 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-A05-081717 Basis: Dry

Lab Code: K1708844-010

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 76.0 mg/Kg 4.2 2.1 2 08/30/17 18:30 08/23/17 Lead 6010C 1130 mg/Kg2.1 0.7 2 08/30/17 18:30 08/23/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708844 **Date Collected:** 08/17/17 11:16 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-B01-081717 Basis: Dry

Lab Code: K1708844-011

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 18.1 mg/Kg 3.8 1.9 2 08/30/17 18:33 08/23/17 Lead 6010C 329 mg/Kg1.9 0.7 2 08/30/17 18:33 08/23/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708844 **Date Collected:** 08/17/17 11:19 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-B02-081717 Basis: Dry

Lab Code: K1708844-012

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 20.7 mg/Kg 3.9 1.9 2 08/30/17 18:42 08/23/17 Lead 6010C 326 mg/Kg1.9 0.7 2 08/30/17 18:42 08/23/17

Printed 9/1/2017 4:06:23 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708844 **Date Collected:** 08/17/17 11:24 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-B03-081717 Basis: Dry

Lab Code: K1708844-013

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 62.1 mg/Kg 4.2 2.1 2 08/30/17 18:44 08/23/17 Lead 6010C 674 mg/Kg2.1 0.7 2 08/30/17 18:44 08/23/17

Printed 9/1/2017 4:06:23 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708844 **Date Collected:** 08/17/17 11:28 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-B04-081717 Basis: Dry

Lab Code: K1708844-014

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 55.1 mg/Kg 3.9 2.0 2 08/30/17 18:46 08/23/17 Lead 6010C 916 mg/Kg2.0 0.7 2 08/30/17 18:46 08/23/17

Printed 9/1/2017 4:06:23 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708844 **Date Collected:** 08/17/17 11:34 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-B05-081717 Basis: Dry

Lab Code: K1708844-015

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 53.9 mg/Kg 4.0 2.0 2 08/30/17 18:49 08/23/17 Lead 6010C 419 mg/Kg2.0 0.7 2 08/30/17 18:49 08/23/17

Printed 9/1/2017 4:06:23 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708844 **Date Collected:** 08/17/17 11:45 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-C01-081717 Basis: Dry

Lab Code: K1708844-016

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 19.6 mg/Kg 3.7 1.9 2 08/30/17 18:51 08/23/17 Lead 6010C 534 mg/Kg1.9 0.7 2 08/30/17 18:51 08/23/17

Printed 9/1/2017 4:06:23 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708844 **Date Collected:** 08/17/17 11:48 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-C02-081717 Basis: Dry

Lab Code: K1708844-017

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 26.4 mg/Kg 4.1 2.0 2 08/30/17 18:53 08/23/17 Lead 6010C 393 mg/Kg2.0 0.7 2 08/30/17 18:53 08/23/17

Printed 9/1/2017 4:06:24 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708844 **Date Collected:** 08/17/17 11:52 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-C03-081717 Basis: Dry

Lab Code: K1708844-018

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 43.1 mg/Kg 4.0 2.0 2 08/30/17 18:56 08/23/17 Lead 6010C 1210 mg/Kg2.0 0.7 2 08/30/17 18:56 08/23/17

Printed 9/1/2017 4:06:24 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708844 **Date Collected:** 08/17/17 11:57 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-C04-081717 Basis: Dry

Lab Code: K1708844-019

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 22.0 mg/Kg 4.0 2.0 2 08/30/17 18:58 08/23/17 Lead 6010C **291** mg/Kg2.0 0.7 2 08/30/17 18:58 08/23/17

Printed 9/1/2017 4:06:24 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708844 **Date Collected:** 08/17/17 12:00 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-C05-081717 Basis: Dry

Lab Code: K1708844-020

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 40.0 mg/Kg 3.9 1.9 2 08/30/17 19:00 08/23/17 Lead 6010C 858 mg/Kg1.9 0.7 2 08/30/17 19:00 08/23/17

Printed 9/1/2017 4:06:24 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708844

Date Collected: NA **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001 Date Received: NA **Sample Matrix:** Soil

Sample Name: Method Blank Basis: Dry

Lab Code: KQ1712050-02

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	ate Extracted	Q
Arsenic	6010C	ND U	mg/Kg	4	2.0	2	08/30/17 17:49	08/23/17	
Lead	6010C	ND U	mg/Kg	2	0.7	2	08/30/17 17:49	08/23/17	

QA/QC Report

Client: Teck American Incorporated

August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Service Request: Date Collected:

K1708844

Date Received:

08/16/17 08/22/17

Date Analyzed:

08/30/17

Date Extracted:

08/23/17

Duplicate Matrix Spike Summary

Total Metals

Sample Name:

401-2-J06-081617

Units: Basis: mg/Kg Dry

Lab Code:

Project:

K1708844-001

Analysis Method: Prep Method:

6010C

EPA 3050B

Matrix Spike

Duplicate Matrix Spike

KQ1712050-04

KQ1712050-03

	Sample		Spike			Spike		% Rec		RPD
Analyte Name	Result	Result	Amount	% Rec	Result	Amount	% Rec	Limits	RPD	Limit
Arsenic	26.4	126	104	95	121	100	95	75-125	3	30
Lead	288	418	104	125	426	100	138 N	75-125	2	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

QA/QC Report

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Service Request: K1708844 Date Analyzed: 08/30/17

Lab Control Sample Summary Total Metals

Units:mg/Kg
Basis:Dry

Lab Control Sample KQ1712050-01

Analyte Name Analytical Method Result **Spike Amount** % Rec % Rec Limits Arsenic 6010C 472 500 94 80-120 Lead 6010C 468 500 94 80-120



ALS Environmental
ALS Group USA, Corp
1317 South 13th Avenue
Kelso, WA 98626

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F: +1 360 636 1068 www.alsglobal.com

September 05, 2017

Analytical Report for Service Request No: K1708845

Dave Enos Teck American Incorporated 501 North Riverpoint Blvd., Suite 300 Spokane, WA 99202

RE: August 2017 Sampling SAT Study / B0095010.0005.00001

Dear Dave.

Enclosed are the results of the sample(s) submitted to our laboratory August 22, 2017 For your reference, these analyses have been assigned our service request number **K1708845**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3330. You may also contact me via email at Jeff.Coronado@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Jeff Coronado Metals Department

Manager



ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue Kelso, WA 98626

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Table of Contents

Acronyms

Qualifiers

State Certifications, Accreditations, And Licenses

Case Narrative

Chain of Custody

Total Solids

Metals

Acronyms

ASTM American Society for Testing and Materials

A2LA American Association for Laboratory Accreditation

CARB California Air Resources Board

CAS Number Chemical Abstract Service registry Number

CFC Chlorofluorocarbon
CFU Colony-Forming Unit

DEC Department of Environmental Conservation

DEQ Department of Environmental Quality

DHS Department of Health Services

DOE Department of Ecology
DOH Department of Health

EPA U. S. Environmental Protection Agency

ELAP Environmental Laboratory Accreditation Program

GC Gas Chromatography

GC/MS Gas Chromatography/Mass Spectrometry

LOD Limit of Detection
LOO Limit of Quantitation

LUFT Leaking Underground Fuel Tank

M Modified

MCL Maximum Contaminant Level is the highest permissible concentration of a substance

allowed in drinking water as established by the USEPA.

MDL Method Detection Limit
MPN Most Probable Number
MRL Method Reporting Limit

NA Not Applicable
NC Not Calculated

NCASI National Council of the Paper Industry for Air and Stream Improvement

ND Not Detected

NIOSH National Institute for Occupational Safety and Health

PQL Practical Quantitation Limit

RCRA Resource Conservation and Recovery Act

SIM Selected Ion Monitoring

TPH Total Petroleum Hydrocarbons

tr Trace level is the concentration of an analyte that is less than the PQL but greater than or

equal to the MDL.

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- \boldsymbol{Q} $\;\;$ See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L14-51
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	_
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
	https://deq.nc.gov/about/divisions/water-resources/water-resources-	
	data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-	
North Carolina DEQ	certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaborator	
Oregon – DEQ (NELAP)	yAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.



Case Narrative

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

ALS ENVIRONMENTAL

Client: Teck American Incorporated Service Request No.: K1708845

Project: August 2017 Sampling SAT Study/ Date Received: 08/22/17

B0095010.0005.00001

Sample Matrix: Soil

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

Sample Receipt

Twenty soil samples were received for analysis at ALS Environmental on 08/22/17. The samples were received in good condition and consistent with the accompanying chain of custody form, except where noted on the cooler receipt and preservation form included in this report.. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Total Metals

No anomalies associated with the analysis of these samples were observed.

Approved by Cil



Chain of Custody

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068



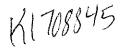
6/7/8845 Date 8/20/17 PAGE / OF 15

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ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068



Date 8/20/17
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Project Name: <u>Teck American -</u>	UCR SAT	ES Project	Number: <u>B0095010.0005.00001</u>		£	_						<u> </u>
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ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

K1708845

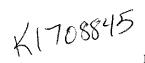
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	ce Information					raw data)								
	# UCR-ALS-D34-17					IV. CLP Deliverable Report								
Bill to	o: <u>Cristy Kessel - Teck</u>	Ameri	<u>can</u>		X	V. EDD								
	501 N Riverpoint Blvd, Suite 300 Spokane, WA 9920													
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Date/	Time: 8/21/17	13:00	<u> </u>		Date/Time:	8/22/17 0950		Firm: Firm: Date/Time: Date/Time:						

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068



Date 8/20/17
PAGE 4 OF 15

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001											Analy	sis Reques	sted	
Proj	ect Name: Teck An	nerican -	UCR SAT	<u>(ES</u> Projec	t Number: <u>B0095010.0005.00001</u>		Siz							
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Com	pany/Address: <u>189</u>]	North Ce	dar Street	Phone: <u>30</u>	7-203-3510 or 810-588-1488		Con	ead/arsenic 3050B/6010						
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Samı	pler's Signature:						Number	arse						
1	Sample I.D. Date Time LAB ID Matrix						Ž	lead d]	11			REMARKS	
401	-1-C01-08	1817	8/18/17	1033		S	1	Х						
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	24 hr 48 hr	5	day		I. Routine Report: Results, Method Bla	ınk,	Hold Remainder							
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501 N Riverpoint Blvd, Suite 300 Spokane, WA 9920														
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Cooler Receipt and Preservation Fo

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PC	

Cooler Receipt and Treservation Form
ent <u>leck America</u> . Service Request K17 08845
ceived: 8/22/17 Opened: 8/22/17 By: KM Unloaded: 8/22/17 By: KM.
Samples were received via? USPS Fed Ex UPS DHL PDX Courier Hand Delivered
Samples were received in: (circle) Cooler Box Envelope Other NA
Were custody seals on coolers? NA (Y) N If yes, how many and where 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
If present, were custody seals intact? Y N If present, were they signed and dated? Y N
Raw Corrected Raw Corrected Corr. Thermometer Cooler/COC ID Tracking Number oler Temp Cooler Temp Temp Blank Temp Blank Factor ID NA NA Filed
5.4 13.1 13.3 to.2 325 8745 6738 5575
1.8 7.9 11.5 11.6 to.1 373 8745 6738 5586
-3 7.6 14·1 14·4 to 3 349 8745 6738 5564
7 7 7 7 7 9 7 4 70-2 3 79 8 105 9 112 129 6
9.2
Packing material: Inserts Baggies (Bubble Wrap) Gel Packs (Wet Ice Pry Ice Sleeves
Were custody papers properly filled out (ink, signed, etc.)? NA Y N N N N N N N N N N N N
Were samples received in good condition (temperature, unbroken)? Indicate in the table below. If applicable, tissue samples were received: Frozen Partially Thawed Thawed
Were all sample labels complete (i.e analysis, preservation, etc.)?
Did all sample labels and tags agree with custody papers? Indicate major discrepancies in the table on page 2. NA Y N
Were appropriate bottles/containers and volumes received for the tests indicated? NA NA NA NA NA NA NA NA NA N
Were the pH-preserved bottles (see SMO GEN SOP) received at the appropriate pH? Indicate in the table below (NA) Y N
Were VOA vials received without headspace? Indicate in the table below.
Was C12/Res negative?
Sample ID on Bottle Sample ID on COC Identified by:
101-2-G02-081717 401-2-602-0817-D "G02-D" on Sample gar Lid
101-1-01-081817 401-1-001-081817 (Dates + fines match coc. 401-016)
Coi- Cog that way.
Bottle Count Out of Head- Sample ID Bottle Type Temp space Broke pH Reagent added Number Initials Time
Sample to Source Type Femily Space Crons. Pri Trougetti added House, Initiatis Finite
s. Discrepancies, & Resolutions: IN all of the CooleRS. There Wasn't
s, Discrepancies, & Resolutions: In all of the Coolers, there wasn't enough ICE and what was there was malted
will the out tours the tours that the
• •

Page 13 of 40



Total Solids

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Client: Teck American Incorporated

Service Request: K1708845 **Date Collected:** 08/18/17 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Received:** 08/22/17

Sample Matrix:

Analysis Method:

Soil

160.3 Modified Units: Percent

Prep Method: None Basis: As Received

Solids, Total

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
401-1-A03-081817	K1708845-001	96.9	-	-	1	08/25/17 16:15	
401-1-A04-081817	K1708845-002	97.0	-	-	1	08/25/17 16:15	
401-1-A05-081817	K1708845-003	97.2	-	-	1	08/25/17 16:15	
401-1-A06-081817	K1708845-004	95.0	-	-	1	08/25/17 16:15	
401-1-A07-081817	K1708845-005	98.0	-	-	1	08/25/17 16:15	
401-1-A08-081817	K1708845-006	96.9	-	-	1	08/25/17 16:15	
401-1-A09-081817	K1708845-007	97.2	-	-	1	08/25/17 16:15	
401-1-A10-081817	K1708845-008	94.7	-	-	1	08/25/17 16:15	
401-1-A06-081817-D	K1708845-009	94.3	-	-	1	08/25/17 16:15	
401-1-B01-081817	K1708845-010	94.7	-	-	1	08/25/17 16:15	
401-1-B02-081817	K1708845-011	87.5	-	-	1	08/25/17 16:15	
401-1-B03-081817	K1708845-012	97.4	-	-	1	08/25/17 16:15	
401-1-B04-081817	K1708845-013	97.1	-	-	1	08/25/17 16:15	
401-1-B05-081817	K1708845-014	96.3	-	-	1	08/25/17 16:15	
401-1-B06-081817	K1708845-015	96.6	-	-	1	08/25/17 16:15	
401-1-B07-081817	K1708845-016	96.9	-	-	1	08/25/17 16:15	
401-1-B08-081817	K1708845-017	97.2	-	-	1	08/25/17 16:15	
401-1-B09-081817	K1708845-018	97.3	-	-	1	08/25/17 16:15	
401-1-B10-081817	K1708845-019	97.7	-	-	1	08/25/17 16:15	
401-1-C01-081817	K1708845-020	96.5	-	-	1	08/25/17 16:15	

QA/QC Report

Client: Teck American Incorporated

Project August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

160.3 Modified

Prep Method: None

Analysis Method:

Service Request: K1708845

Date Collected: 08/18/17

Date Received: 08/22/17

Units:Percent

Basis: As Received

Replicate Sample Summary Inorganic Parameters

			Sample	Duplicate			RPD	Date
Sample Name:	Lab Code:	MRL	Result	Result	Average	RPD	Limit	Analyzed
401-1-A03-081817	K1708845-001DUP	-	96.9	97.0	97.0	<1	20	08/25/17
401-1-B02-081817	K1708845-011DUP	-	87.5	88.3	87.9	<1	20	08/25/17

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Printed 09/05/17 1:01:41 PM Superset Reference:17-0000434662 rev 00



Metals

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Client: Teck American Incorporated

Service Request: K1708845 **Date Collected:** 08/18/17 09:32 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-1-A03-081817 Basis: Dry

Lab Code: K1708845-001

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 27.0 mg/Kg 3.6 1.8 2 08/31/17 15:47 08/30/17 Lead 6010C 512 mg/Kg1.8 0.6 2 08/31/17 15:47 08/30/17

Printed 9/1/2017 4:26:27 PM Superset Reference:

Analytical Report

Client: Teck American Incorporated

Service Request: K1708845 **Date Collected:** 08/18/17 09:34 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-1-A04-081817 Basis: Dry

Lab Code: K1708845-002

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 19.0 mg/Kg 3.4 1.7 2 08/31/17 15:58 08/30/17 Lead 6010C 277 mg/Kg1.7 0.6 2 08/31/17 15:58 08/30/17

Printed 9/1/2017 4:26:27 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708845 **Date Collected:** 08/18/17 09:36 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-1-A05-081817 Basis: Dry

Lab Code: K1708845-003

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 20.1 mg/Kg 3.8 1.9 2 08/31/17 16:00 08/30/17 Lead 6010C **290** mg/Kg1.9 0.7 2 08/31/17 16:00 08/30/17

Printed 9/1/2017 4:26:28 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708845 **Date Collected:** 08/18/17 09:40 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-1-A06-081817 Basis: Dry

Lab Code: K1708845-004

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 51.1 mg/Kg 3.7 1.8 2 08/31/17 16:02 08/30/17 Lead 6010C 387 mg/Kg1.8 0.6 2 08/31/17 16:02 08/30/17

Printed 9/1/2017 4:26:28 PM Superset Reference:

Analytical Report

Service Request: K1708845

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/18/17 09:42

Sample Matrix: Soil Date Received: 08/22/17 09:50

Sample Name: 401-1-A07-081817 **Basis:** Dry

Lab Code: K1708845-005

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 33.1 mg/Kg 3.3 1.7 2 08/31/17 16:10 08/30/17 Lead 6010C 495 mg/Kg1.7 0.6 2 08/31/17 16:10 08/30/17

Printed 9/1/2017 4:26:28 PM Superset Reference:

Analytical Report

Client: Teck American Incorporated

Service Request: K1708845 **Date Collected:** 08/18/17 09:44 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-1-A08-081817 Basis: Dry

Lab Code: K1708845-006

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q 15.9 Arsenic 6010C mg/Kg 3.7 1.8 2 08/31/17 16:13 08/30/17 Lead 6010C 235 mg/Kg1.8 0.6 2 08/31/17 16:13 08/30/17

Printed 9/1/2017 4:26:28 PM Superset Reference:

Analytical Report

Client: Teck American Incorporated

Service Request: K1708845 **Date Collected:** 08/18/17 09:47 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-1-A09-081817 Basis: Dry

Lab Code: K1708845-007

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 29.6 mg/Kg 3.4 1.7 2 08/31/17 16:15 08/30/17 Lead 6010C 433 mg/Kg1.7 0.6 2 08/31/17 16:15 08/30/17

Printed 9/1/2017 4:26:28 PM Superset Reference:

Analytical Report

Service Request: K1708845

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/18/17 09:49

Sample Matrix: Soil Date Received: 08/22/17 09:50

Sample Name: 401-1-A10-081817 **Basis:** Dry

Lab Code: K1708845-008

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 26.9 mg/Kg 3.7 1.9 2 08/31/17 16:17 08/30/17 Lead 6010C **970** mg/Kg1.9 0.7 2 08/31/17 16:17 08/30/17

Printed 9/1/2017 4:26:28 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708845 **Date Collected:** 08/18/17 09:40 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-1-A06-081817-D Basis: Dry

Lab Code: K1708845-009

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 54.0 mg/Kg 3.5 1.7 2 08/31/17 16:19 08/30/17 Lead 6010C 435 mg/Kg1.7 0.6 2 08/31/17 16:19 08/30/17

Printed 9/1/2017 4:26:28 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708845 **Date Collected:** 08/18/17 09:53 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-1-B01-081817 Basis: Dry

Lab Code: K1708845-010

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 40.2 mg/Kg 4.1 2.1 2 08/31/17 16:21 08/30/17 Lead 6010C **767** mg/Kg2.1 0.7 2 08/31/17 16:21 08/30/17

Printed 9/1/2017 4:26:28 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708845 **Date Collected:** 08/18/17 09:55 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-1-B02-081817 Basis: Dry

Lab Code: K1708845-011

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 27.3 mg/Kg 4.4 2.2 2 08/31/17 16:23 08/30/17 Lead 6010C 1160 mg/Kg2.2 0.8 2 08/31/17 16:23 08/30/17

Printed 9/1/2017 4:26:28 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708845 **Date Collected:** 08/18/17 09:57 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-1-B03-081817 Basis: Dry

Lab Code: K1708845-012

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 15.6 mg/Kg 3.2 1.6 2 08/31/17 16:25 08/30/17 Lead 6010C 198 mg/Kg1.6 0.6 2 08/31/17 16:25 08/30/17

Printed 9/1/2017 4:26:28 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708845 **Date Collected:** 08/18/17 10:00 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-1-B04-081817 Basis: Dry

Lab Code: K1708845-013

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 14.5 mg/Kg 3.7 1.9 2 08/31/17 16:27 08/30/17 Lead 6010C 206 mg/Kg1.9 0.7 2 08/31/17 16:27 08/30/17

Printed 9/1/2017 4:26:28 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708845 **Date Collected:** 08/18/17 10:02 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-1-B05-081817 Basis: Dry

Lab Code: K1708845-014

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 18.2 mg/Kg 3.6 1.8 2 08/31/17 16:30 08/30/17 Lead 6010C 348 mg/Kg1.8 0.6 2 08/31/17 16:30 08/30/17

Printed 9/1/2017 4:26:28 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708845 **Date Collected:** 08/18/17 10:04 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-1-B06-081817 Basis: Dry

Lab Code: K1708845-015

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q 19.9 Arsenic 6010C mg/Kg 3.6 1.8 2 08/31/17 16:38 08/30/17 Lead 6010C 306 mg/Kg1.8 0.6 2 08/31/17 16:38 08/30/17

Printed 9/1/2017 4:26:28 PM Superset Reference:

Analytical Report

Client: Teck American Incorporated

Service Request: K1708845 **Date Collected:** 08/18/17 10:08 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-1-B07-081817 Basis: Dry

Lab Code: K1708845-016

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 19.2 mg/Kg 3.4 1.7 2 08/31/17 16:40 08/30/17 Lead 6010C **176** mg/Kg1.7 0.6 2 08/31/17 16:40 08/30/17

Printed 9/1/2017 4:26:28 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708845 **Date Collected:** 08/18/17 10:10 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-1-B08-081817 Basis: Dry

Lab Code: K1708845-017

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 32.8 mg/Kg 3.3 1.7 2 08/31/17 16:42 08/30/17 Lead 6010C 548 mg/Kg1.7 0.6 2 08/31/17 16:42 08/30/17

Printed 9/1/2017 4:26:29 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708845 **Date Collected:** 08/18/17 10:12 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-1-B09-081817 Basis: Dry

Lab Code: K1708845-018

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 23.4 mg/Kg 4.0 2.0 2 08/31/17 16:44 08/30/17 Lead 6010C **376** mg/Kg2.0 0.7 2 08/31/17 16:44 08/30/17

Printed 9/1/2017 4:26:29 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708845 **Date Collected:** 08/18/17 10:15 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-1-B10-081817 Basis: Dry

Lab Code: K1708845-019

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 13.6 mg/Kg 3.5 1.8 2 08/31/17 16:47 08/30/17 Lead 6010C 134 mg/Kg1.8 0.6 2 08/31/17 16:47 08/30/17

Printed 9/1/2017 4:26:29 PM Superset Reference:

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Analytical Report

Service Request: K1708845

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/18/17 10:33

Sample Matrix: Soil Date Received: 08/22/17 09:50

Sample Name: 401-1-C01-081817 **Basis:** Dry

Lab Code: K1708845-020

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 24.0 mg/Kg 3.5 1.8 2 08/31/17 16:49 08/30/17 Lead 6010C 265 mg/Kg1.8 0.6 2 08/31/17 16:49 08/30/17

Printed 9/1/2017 4:26:29 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708845

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 Date Collected: NA

Sample Matrix:

Soil

Date Received: NA

Sample Name:

Method Blank

Basis: Dry

Lab Code: KQ1712391-02

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	ate Extracted	Q
Arsenic	6010C	ND U	mg/Kg	4	2.0	2	08/31/17 15:43	08/30/17	
Lead	6010C	ND U	mg/Kg	2	0.7	2	08/31/17 15:43	08/30/17	

Printed 9/1/2017 4:26:29 PM Superset Reference:

QA/QC Report

Client: Teck American Incorporated

August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Service Request: Date Collected:

K1708845

Date Received:

08/18/17 08/22/17

Date Analyzed:

08/31/17

Date Extracted:

08/30/17

Duplicate Matrix Spike Summary

Total Metals

Sample Name:

401-1-A03-081817

Units: Basis: mg/Kg

Dry

Lab Code:

Project:

K1708845-001

Analysis Method: Prep Method:

6010C

EPA 3050B

Matrix Spike

Duplicate Matrix Spike

			KQ171	2391-03		KQ1712	391-04			
	Sample		Spike			Spike		% Rec		RPD
Analyte Name	Result	Result	Amount	% Rec	Result	Amount	% Rec	Limits	RPD	Limit
Arsenic	27.0	116	90.5	98	123	97.3	99	75-125	6	30
Lead	512	624	90.5	124#	647	97.3	139#	75-125	4	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Printed 9/1/2017 4:26:29 PM Superset Reference:

QA/QC Report

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Service Request: K1708845 Date Analyzed: 08/31/17

Lab Control Sample Summary Total Metals

Units:mg/Kg
Basis:Dry

Lab Control Sample KQ1712391-01

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Arsenic	6010C	509	500	102	80-120
Lead	6010C	520	500	104	80-120

Printed 9/1/2017 4:26:29 PM Superset Reference:



ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue Kelso, WA 98626

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F:+1 360 636 1068 www.alsglobal.com

September 05, 2017

Analytical Report for Service Request No: K1708846

Dave Enos Teck American Incorporated 501 North Riverpoint Blvd., Suite 300 Spokane, WA 99202

RE: August 2017 Sampling SAT Study / B0095010.0005.00001

Dear Dave,

Enclosed are the results of the sample(s) submitted to our laboratory August 22, 2017 For your reference, these analyses have been assigned our service request number **K1708846**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3330. You may also contact me via email at Jeff.Coronado@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Jeff Coronado

Metals Department

Manager



ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue Kelso, WA 98626

T: +1 360 577 7222 F: +1 360 636 1068 www.alsglobal.com

Table of Contents

Acronyms

Qualifiers

State Certifications, Accreditations, And Licenses

Case Narrative

Chain of Custody

Total Solids

Metals

Acronyms

ASTM American Society for Testing and Materials

A2LA American Association for Laboratory Accreditation

CARB California Air Resources Board

CAS Number Chemical Abstract Service registry Number

CFC Chlorofluorocarbon
CFU Colony-Forming Unit

DEC Department of Environmental Conservation

DEQ Department of Environmental Quality

DHS Department of Health Services

DOE Department of Ecology
DOH Department of Health

EPA U. S. Environmental Protection Agency

ELAP Environmental Laboratory Accreditation Program

GC Gas Chromatography

GC/MS Gas Chromatography/Mass Spectrometry

LOD Limit of Detection
LOO Limit of Quantitation

LUFT Leaking Underground Fuel Tank

M Modified

MCL Maximum Contaminant Level is the highest permissible concentration of a substance

allowed in drinking water as established by the USEPA.

MDL Method Detection Limit
MPN Most Probable Number
MRL Method Reporting Limit

NA Not Applicable
NC Not Calculated

NCASI National Council of the Paper Industry for Air and Stream Improvement

ND Not Detected

NIOSH National Institute for Occupational Safety and Health

PQL Practical Quantitation Limit

RCRA Resource Conservation and Recovery Act

SIM Selected Ion Monitoring

TPH Total Petroleum Hydrocarbons

tr Trace level is the concentration of an analyte that is less than the PQL but greater than or

equal to the MDL.

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- \boldsymbol{Q} $\;\;$ See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L14-51
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	_
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
	https://deq.nc.gov/about/divisions/water-resources/water-resources-	
	data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-	
North Carolina DEQ	certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaborator	
Oregon – DEQ (NELAP)	yAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.



Case Narrative

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

ALS ENVIRONMENTAL

Client: Teck American Incorporated Service Request No.: K1708846

Project: August 2017 Sampling SAT Study/ Date Received: 08/22/17

B0095010.0005.00001

Sample Matrix: Soil

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

Sample Receipt

Twenty soil samples were received for analysis at ALS Environmental on 08/22/17. The samples were received in good condition and consistent with the accompanying chain of custody form, except where noted on the cooler receipt and preservation form included in this report.. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Total Metals

No anomalies associated with the analysis of these samples were observed.

Approved by



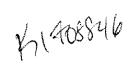
Chain of Custody

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ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068



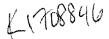
PAGE 47 OF 20/0 SR# 2007 \$7/19/17 2007 \$1/19/17

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Project Contact: Kady Young Company:			Containers	lead/arsenic 3050B/6010					
Company/Address: <u>189 North Cedar Stree</u>	t Phone: 307-203-3510 or 810-588-1488		of Co	3050					
City, State, Zip: <u>Buffalo, WY 82834</u> FAX:	<u>307-684-5961</u>			enic					
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Provide FAX Preliminary Results	X II. Report Dup., MS, MSD as required								
Requested Report Date:	III. Data Validation Report (includes								
Invoice Information	raw data)								
P.O. #	IV. CLP Deliverable Report								
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ALS Envir mental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068



Date PAGE 5-4 OF 20/0
SD# 500 2/19/17 200 2/19/17

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Project Name: Teck American - HCR SA	TES Project Number: <u>B0095010.0005.00001</u>						Analy	sis Reques	ted
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City, State, Zip: Buffalo, WY 82834 FAX:	307-684-5961		r of	nic 3					
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E02	12:56	S	1	Х					
E03	13:60	S	1	Х					
E04	13:03	S	1	Х					
V €05	13:07	S	1	Х					
401-2-E05-081717-D V	13:07	S	1	Х					
		S	1	Х					
		S	1	X					
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X Standard (10 days)	Surrogate, as required								
Provide FAX Preliminary Results	X II. Report Dup., MS, MSD as required								
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Invoice Information	raw data)								
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ALS Envir __mental-Kelso

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41708846

Date

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SR# wm 8/19/17 wm 8/19/17

	roject Name: Teck American - UCR SATES Project Number: B0095010.0005.00001													Analys	sis Reques	ted
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ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068



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City, State, Zip: Buffalo, WY 82834 FAX	K: <u>307-684-5961</u>		er of	nic 3						
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Sample I.D. Date	e Time LAB ID	Matrix	Z	lead			į.	REMARKS		
401-2-G01-081717 08/17	/17 (3:33	S	1	X						
G02	13:37	S	1	X						
6,03	13:42	S	1	X	i					
G04	13:46	S	1	X						
% G05	13:49	S	1	X						
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		S	1	Х						
(and		S	1	Х						
		S	1	X						
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X Standard (10 days) Provide FAX Preliminary Results	Surrogate, as required X II. Report Dup., MS, MSD as requ	ired							ł	
Requested Report Date:	III. Data Validation Report (include									
nvoice Information	raw data)									
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Cooler Receipt and Preservation Form

РC		0
~ ~	7	

ient <u>leck America</u> Service Request K17 08846
ceived: 8/22/17 Opened: 8/22/17 By: KM Unloaded: 8/22/17 By: KM.
Samples were received via? USPS Fed Ex UPS DHL PDX Courier Hand Delivered
Samples were received in: (circle) Cooler Box Envelope Other NA
Were custody seals on coolers? NA (Y) N If yes, how many and where W TONT.
If present, were custody seals intact? Y N If present, were they signed and dated? Y N
Raw Corrected Raw Corrected Corr. Thermometer Cooler/COCID Tracking Number NA Filed
5.2 5.4 13.1 13.3 to.2 325 8745 6738 5575
1.8 7.9 11.5 11:4 +0.1 373 8745 6738 5586
7 7 3 7 4 70 2 3 79 8105 9112 1291
7.3 (9) 14.0 -0.1 328 - 8745 6734 5597
Packing material: Inserts Baggies (Bubble Wrap) Gel Packs (Wet Ice Pry Ice Sleeves
Were custody papers properly filled out (ink, signed, etc.)? NA (Y) N
Were samples received in good condition (temperature, unbroken)? Indicate in the table below. NA Y
If applicable, tissue samples were received: Frozen Partially Thawed Thawed Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y
Did all sample labels and tags agree with custody papers? <i>Indicate major discrepancies in the table on page 2.</i> NA Y N
Were appropriate bottles/containers and volumes received for the tests indicated? NA (Y) N
Were the pH-preserved bottles (see SMO GEN SOP) received at the appropriate pH? Indicate in the table below (NA) Y N
Were VOA vials received without headspace? Indicate in the table below.
Were VOA vials received without headspace? Indicate in the table below. Was C12/Res negative? NA Y N NA Y N
Was C12/Res negative? NA Y N
Was C12/Res negative? NA Y N Sample ID on Bottle Sample ID on COC Identified by:
Was C12/Res negative? NA Y N Sample ID on Bottle Sample ID on COC Identified by: IDI-2-G02-0817-0 "G02-D" on Sample yar Lid
Was C12/Res negative? Sample ID on Bottle Sample ID on COC Identified by:
Was C12/Res negative? Sample ID on Bottle Sample ID on COC Identified by:
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Was C12/Res negative? Sample ID on Bottle Sample ID on COC Identified by: \[\lambda \rangle \rang
Sample ID on Bottle Sample ID on COC Identified by: D - 2 - GO2 - 08 7 17 10 -2 - GO2 - 08 7 - D GO2 - D " On Sample far Lide
Was C12/Res negative? Sample ID on Bottle Sample ID on COC Identified by: 101-2-G02-0817-0 "G02-D" on Sample gar Lid 101-1-C1-081817 "G02-D" on Sample gar Lid 101-1-C1-081817 "G02-D" on Sample gar Lid Col-Ca tingt Way." Sample ID Bottle Count Bottle Type Bottle Type
Sample ID on Bottle Sample ID on COC Identified by: Doctor Col - Os 7 7 40 - 2 - 602 - 08 7 - 0 Col - 05 8 7 7
Was C12/Res negative? Sample ID on Bottle Sample ID on COC Identified by: 101-2-G02-0817-0 "G02-D" on Sample gar Lid 101-1-C1-081817 401-1-C01-081817 Dates + times match coc. "Got-Coq tiggt Way." Sample ID Bottle Count Bottle Type Bottle Type Bottle Type Bottle Type Temp space Broke

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Total Solids

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Client: Teck American Incorporated

Service Request: K1708846 **Date Collected:** 08/17/17 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix:

Analysis Method:

Soil

160.3 Modified Units: Percent

Prep Method: None Basis: As Received

Date Received: 08/22/17

Solids, Total

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
401-2-D01-081717	K1708846-001	96.5	=	-	1	08/25/17 16:15	
401-2-D02-081717	K1708846-002	95.4	-	-	1	08/25/17 16:15	
401-2-D03-081717	K1708846-003	95.0	-	-	1	08/25/17 16:15	
401-2-D04-081717	K1708846-004	95.4	-	-	1	08/25/17 16:15	
401-2-D05-081717	K1708846-005	95.5	-	-	1	08/25/17 16:15	
401-2-E01-081717	K1708846-006	94.0	-	-	1	08/25/17 16:15	
401-2-E02-081717	K1708846-007	94.1	-	-	1	08/25/17 16:15	
401-2-E03-081717	K1708846-008	96.5	-	-	1	08/25/17 16:15	
401-2-E04-081717	K1708846-009	95.9	-	-	1	08/25/17 16:15	
401-2-E05-081717	K1708846-010	94.2	-	-	1	08/25/17 16:15	
401-2-E05-081717-D	K1708846-011	94.8	-	-	1	08/25/17 16:15	
401-2-F01-081717	K1708846-012	95.0	-	-	1	08/25/17 16:15	
401-2-F02-081717	K1708846-013	95.2	-	-	1	08/25/17 16:15	
401-2-F03-081717	K1708846-014	95.5	-	-	1	08/25/17 16:15	
401-2-F04-081717	K1708846-015	90.6	-	-	1	08/25/17 16:15	
401-2-F05-081717	K1708846-016	94.6	-	-	1	08/25/17 16:15	
401-2-G01-081717	K1708846-017	92.5	-	-	1	08/25/17 16:15	
401-2-G02-081717	K1708846-018	94.4	-	-	1	08/25/17 16:15	
401-2-G03-081717	K1708846-019	92.0	-	-	1	08/25/17 16:15	
401-2-G04-081717	K1708846-020	93.2	-	-	1	08/25/17 16:15	

QA/QC Report

Client: Teck American Incorporated

Project August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Analysis Method:

160.3 Modified

Prep Method: None

Service Request:K1708846 Date Collected:08/17/17 Date Received:08/22/17

Units:Percent

Basis: As Received

Replicate Sample Summary Inorganic Parameters

			Sample	Duplicate			RPD	Date
Sample Name:	Lab Code:	MRL	Result	Result	Average	RPD	Limit	Analyzed
401-2-D01-081717	K1708846-001DUP	-	96.5	96.2	96.4	<1	20	08/25/17
401-2-E05-081717-D	K1708846-011DUP	-	94.8	95.2	95.0	<1	20	08/25/17

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Printed 09/05/17 1:12:04 PM Superset Reference:17-0000434663 rev 00



Metals

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Client: Teck American Incorporated

Service Request: K1708846 **Date Collected:** 08/17/17 12:04 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Date Received: 08/22/17 09:50

Sample Name: 401-2-D01-081717 Basis: Dry

Lab Code: K1708846-001

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	ate Extracted	Q
Arsenic	6010C	43.8	mg/Kg	3.9	1.9	2	08/31/17 16:55	08/30/17	
Lead	6010C	913	mg/Kg	1.9	0.7	2	08/31/17 16:55	08/30/17	

Printed 9/1/2017 4:30:30 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708846 **Date Collected:** 08/17/17 12:09 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-D02-081717 Basis: Dry

Lab Code: K1708846-002

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 53.2 mg/Kg 4.2 2.1 2 08/31/17 17:14 08/30/17 Lead 6010C 665 mg/Kg2.1 0.7 2 08/31/17 17:14 08/30/17

Printed 9/1/2017 4:30:30 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708846 **Date Collected:** 08/17/17 12:12 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-D03-081717 Basis: Dry

Lab Code: K1708846-003

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 54.5 mg/Kg 4.2 2.1 2 08/31/17 17:17 08/30/17 Lead 6010C 558 mg/Kg2.1 0.7 2 08/31/17 17:17 08/30/17

Printed 9/1/2017 4:30:30 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708846 **Date Collected:** 08/17/17 12:15 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-D04-081717 Basis: Dry

Lab Code: K1708846-004

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 40.2 mg/Kg 4.1 2.1 2 08/31/17 17:19 08/30/17 Lead 6010C 459 mg/Kg2.1 0.7 2 08/31/17 17:19 08/30/17

Printed 9/1/2017 4:30:30 PM Superset Reference:

Analytical Report

Client: Teck American Incorporated

Service Request: K1708846 **Date Collected:** 08/17/17 12:18 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-D05-081717 Basis: Dry

Lab Code: K1708846-005

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 53.2 mg/Kg 3.9 1.9 2 08/31/17 17:21 08/30/17 Lead 6010C 661 mg/Kg1.9 0.7 2 08/31/17 17:21 08/30/17

Printed 9/1/2017 4:30:30 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708846 **Date Collected:** 08/17/17 12:49 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-E01-081717 Basis: Dry

Lab Code: K1708846-006

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 37.4 mg/Kg 4.1 2.1 2 08/31/17 17:23 08/30/17 Lead 6010C 745 mg/Kg2.1 0.7 2 08/31/17 17:23 08/30/17

Printed 9/1/2017 4:30:30 PM Superset Reference:

Analytical Report

Client: Teck American Incorporated

Service Request: K1708846 **Date Collected:** 08/17/17 12:56 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-E02-081717 Basis: Dry

Lab Code: K1708846-007

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 98.2 mg/Kg 4.1 2.1 2 08/31/17 17:25 08/30/17 Lead 6010C 684 mg/Kg2.1 0.7 2 08/31/17 17:25 08/30/17

Printed 9/1/2017 4:30:30 PM Superset Reference:

Analytical Report

Client: Teck American Incorporated

Service Request: K1708846 **Date Collected:** 08/17/17 13:00 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-E03-081717 Basis: Dry

Lab Code: K1708846-008

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 43.1 mg/Kg 4.1 2.1 2 08/31/17 17:27 08/30/17 Lead 6010C 943 mg/Kg2.1 0.7 2 08/31/17 17:27 08/30/17

Printed 9/1/2017 4:30:30 PM Superset Reference:

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Analytical Report

Service Request: K1708846

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/17/17 13:03

Sample Matrix: Soil Date Received: 08/22/17 09:50

Sample Name: 401-2-E04-081717 **Basis:** Dry

Lab Code: K1708846-009

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 31.6 mg/Kg 4.0 2.0 2 08/31/17 17:36 08/30/17 Lead 6010C **586** mg/Kg2.0 0.7 2 08/31/17 17:36 08/30/17

Printed 9/1/2017 4:30:30 PM Superset Reference:

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Analytical Report

Service Request: K1708846

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/17/17 13:07

Sample Matrix: Soil Date Received: 08/22/17 09:50

Sample Name: 401-2-E05-081717 **Basis:** Dry

Lab Code: K1708846-010

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 44.5 mg/Kg 4.1 2.0 2 08/31/17 17:38 08/30/17 Lead 6010C 823 mg/Kg2.0 0.7 2 08/31/17 17:38 08/30/17

Printed 9/1/2017 4:30:30 PM Superset Reference:

Analytical Report

Service Request: K1708846

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/17/17 13:07

Sample Matrix: Soil Date Received: 08/22/17 09:50

Sample Name: 401-2-E05-081717-D **Basis:** Dry

Lab Code: K1708846-011

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 48.6 mg/Kg 4.2 2.1 2 08/31/17 17:40 08/30/17 Lead 6010C 1040 mg/Kg2.1 0.7 2 08/31/17 17:40 08/30/17

Printed 9/1/2017 4:30:31 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708846 **Date Collected:** 08/17/17 13:14 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-F01-081717 Basis: Dry

Lab Code: K1708846-012

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 40.2 mg/Kg 4.2 2.1 2 08/31/17 17:42 08/30/17 Lead 6010C 304 mg/Kg2.1 0.7 2 08/31/17 17:42 08/30/17

Printed 9/1/2017 4:30:31 PM Superset Reference:

Analytical Report

Client: Teck American Incorporated

Service Request: K1708846 **Date Collected:** 08/17/17 13:17 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-F02-081717 Basis: Dry

Lab Code: K1708846-013

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 33.3 mg/Kg 4.0 2.0 2 08/31/17 17:44 08/30/17 Lead 6010C 155 mg/Kg2.0 0.7 2 08/31/17 17:44 08/30/17

Printed 9/1/2017 4:30:31 PM Superset Reference:

Analytical Report

Service Request: K1708846

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/17/17 13:19

Sample Matrix: Soil Date Received: 08/22/17 09:50

Sample Name: 401-2-F03-081717 **Basis:** Dry

Lab Code: K1708846-014

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 57.3 mg/Kg 4.1 2.1 2 08/31/17 17:46 08/30/17 Lead 6010C **701** mg/Kg2.1 0.7 2 08/31/17 17:46 08/30/17

Printed 9/1/2017 4:30:31 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

K1708846-015

Lab Code:

Service Request: K1708846 **Date Collected:** 08/17/17 13:22 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-F04-081717 Basis: Dry

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 65.3 mg/Kg 4.4 2.2 2 08/31/17 17:48 08/30/17 Lead 6010C 1800 mg/Kg2.2 0.8 2 08/31/17 17:48 08/30/17

Printed 9/1/2017 4:30:31 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708846 **Date Collected:** 08/17/17 13:25 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-F05-081717 Basis: Dry

Lab Code: K1708846-016

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 41.1 mg/Kg 4.2 2.1 2 08/31/17 17:51 08/30/17 Lead 6010C **703** mg/Kg2.1 0.7 2 08/31/17 17:51 08/30/17

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708846 **Date Collected:** 08/17/17 13:33 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-G01-081717 Basis: Dry

Lab Code: K1708846-017

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 10.3 mg/Kg 4.2 2.1 2 08/31/17 17:53 08/30/17 Lead 6010C 117 mg/Kg2.1 0.7 2 08/31/17 17:53 08/30/17

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Analytical Report

Service Request: K1708846

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/17/17 13:37

Sample Matrix: Soil Date Received: 08/22/17 09:50

Sample Name: 401-2-G02-081717 **Basis:** Dry

Lab Code: K1708846-018

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 28.3 mg/Kg 4.2 2.1 2 08/31/17 17:55 08/30/17 Lead 6010C 360 mg/Kg2.1 0.7 2 08/31/17 17:55 08/30/17

Printed 9/1/2017 4:30:31 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708846 **Date Collected:** 08/17/17 13:42 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-G03-081717 Basis: Dry

Lab Code: K1708846-019

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 60.4 mg/Kg 4.3 2.2 2 08/31/17 18:03 08/30/17 Lead 6010C 1030 mg/Kg2.2 0.8 2 08/31/17 18:03 08/30/17

Printed 9/1/2017 4:30:31 PM Superset Reference:

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Analytical Report

Service Request: K1708846

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/17/17 13:46

Sample Matrix: Soil Date Received: 08/22/17 09:50

Sample Name: 401-2-G04-081717 **Basis:** Dry

Lab Code: K1708846-020

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 61.8 mg/Kg 4.2 2.1 2 08/31/17 18:05 08/30/17 Lead 6010C 1060 mg/Kg2.1 0.7 2 08/31/17 18:05 08/30/17

Printed 9/1/2017 4:30:31 PM Superset Reference:

Analytical Report

Client: Teck American Incorporated Service Request: K1708846

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 Date Collected: NA

Sample Matrix:

Soil

Date Received: NA

Sample Name:

Method Blank

Basis: Dry

Lab Code: KQ1712057-02

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed I	Date Extracted	Q
Arsenic	6010C	ND U	mg/Kg	4	2.0	2	08/31/17 16:51	08/30/17	
Lead	6010C	ND U	mg/Kg	2	0.7	2	08/31/17 16:51	08/30/17	

Printed 9/1/2017 4:30:31 PM Superset Reference:

QA/QC Report

Client:Teck American IncorporatedService Request:K1708846Project:August 2017 Sampling SAT Study/B0095010.0005.00001Date Collected:08/17/17Sample Matrix:SoilDate Received:08/22/17

Date Analyzed: 08/31/17 **Date Extracted:** 08/30/17

Duplicate Matrix Spike Summary Total Metals

 Sample Name:
 401-2-D01-081717
 Units: mg/Kg

 Lab Code:
 K1708846-001
 Basis: Dry

Analysis Method: 6010C **Prep Method:** EPA 3050B

Matrix SpikeDuplicate Matrix SpikeKQ1712057-03KQ1712057-04

	Sample		Spike			Spike		% Rec		RPD	
Analyte Name	Result	Result	Amount	% Rec	Result	Amount	% Rec	Limits	RPD	Limit	
Arsenic	43.8	142	99.7	99	141	102	96	75-125	<1	30	•
Lead	913	1090	99.7	180 #	1080	102	161#	75-125	<1	30	

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Printed 9/1/2017 4:30:32 PM Superset Reference:

QA/QC Report

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Analyzed:** 08/31/17

Sample Matrix: Soil

Lab Control Sample Summary Total Metals

Units:mg/Kg
Basis:Dry

Service Request: K1708846

Lab Control Sample

KQ1712057-01

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Arsenic	6010C	495	500	99	80-120
Lead	6010C	514	500	103	80-120

Printed 9/1/2017 4:30:31 PM Superset Reference:

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ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue Kelso, WA 98626

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September 05, 2017

Analytical Report for Service Request No: K1708847

Dave Enos Teck American Incorporated 501 North Riverpoint Blvd., Suite 300 Spokane, WA 99202

RE: August 2017 Sampling SAT Study / B0095010.0005.00001

Dear Dave.

Enclosed are the results of the sample(s) submitted to our laboratory August 22, 2017 For your reference, these analyses have been assigned our service request number **K1708847**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3330. You may also contact me via email at Jeff.Coronado@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Jeff Coronado Metals Department

Manager



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Table of Contents

Acronyms

Qualifiers

State Certifications, Accreditations, And Licenses

Case Narrative

Chain of Custody

Total Solids

Metals

Acronyms

ASTM American Society for Testing and Materials

A2LA American Association for Laboratory Accreditation

CARB California Air Resources Board

CAS Number Chemical Abstract Service registry Number

CFC Chlorofluorocarbon
CFU Colony-Forming Unit

DEC Department of Environmental Conservation

DEQ Department of Environmental Quality

DHS Department of Health Services

DOE Department of Ecology
DOH Department of Health

EPA U. S. Environmental Protection Agency

ELAP Environmental Laboratory Accreditation Program

GC Gas Chromatography

GC/MS Gas Chromatography/Mass Spectrometry

LOD Limit of Detection
LOQ Limit of Quantitation

LUFT Leaking Underground Fuel Tank

M Modified

MCL Maximum Contaminant Level is the highest permissible concentration of a substance

allowed in drinking water as established by the USEPA.

MDL Method Detection Limit
MPN Most Probable Number
MRL Method Reporting Limit

NA Not Applicable
NC Not Calculated

NCASI National Council of the Paper Industry for Air and Stream Improvement

ND Not Detected

NIOSH National Institute for Occupational Safety and Health

PQL Practical Quantitation Limit

RCRA Resource Conservation and Recovery Act

SIM Selected Ion Monitoring

TPH Total Petroleum Hydrocarbons

tr Trace level is the concentration of an analyte that is less than the PQL but greater than or

equal to the MDL.

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L14-51
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	_
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
	https://deq.nc.gov/about/divisions/water-resources/water-resources-	
	data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-	
North Carolina DEQ	certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
-	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaborator	
Oregon – DEQ (NELAP)	yAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.



Case Narrative

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

ALS ENVIRONMENTAL

Client: Teck American Incorporated Service Request No.: K1708847

Project: August 2017 Sampling SAT Study/ Date Received: 08/22/17

B0095010.0005.00001

Sample Matrix: Soil

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

Sample Receipt

Twenty soil samples were received for analysis at ALS Environmental on 08/22/17. The samples were received in good condition and consistent with the accompanying chain of custody form, except where noted on the cooler receipt and preservation form included in this report.. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Total Metals

No anomalies associated with the analysis of these samples were observed.

Approved by

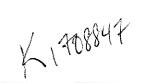


Chain of Custody

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1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068



Date PAGE 713 OF 2010 SR# 2008/19/17 200 8/19/17

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City, State, Zip: Buffalo, WY 8283	4 FAX: <u>3</u>	07-684-596	<u>51</u>		r of	nic 3					
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1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068



Date PAGE 8 15 OF 20 10 SR# 60 10 117 00 8/19/17

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(360) 577-7222 FAX (360) 636-1068



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1317 South 13th, Kelso, WA 98626

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Packing material: Inserts Baggles (Bubble Wrap) Gel Packs (Wet Ice Dry Ice Steeves Were custody papers properly filled out (ink, signed, etc.)? Were samples received in good condition (temperature, unbroken)? Indicate in the table below. If applicable, tissue samples were received: Frozen Partially Thawed Thawed Vere all sample labels and tags agree with custody papers? Indicate major discrepancies in the table on page 2. NA Y (N) Were appropriate bottles/containers and volumes received for the tests indicated? Were the pH-preserved bottles (see SMO GEN SOP) received at the appropriate pH? Indicate in the table below (NA) Y N Were VOA vials received without headspace? Indicate in the table below. NA Y N Was C12/Res negative? Sample ID on Bottle Sample ID on COC Identified by: C01 - 08 8 7 40 - 1 - 00 - 08 8 7 00 00 00 00 00 0	7.9 1.5 11	9 +0.1	1 3	7.2	5-			\$745	1.738	55Y(?
Packing material: Inserts Baggies (Bubble Wrap) Gel Packs (Wet Ice) Pry Ice Steeves Were custody papers properly filled out (ink, signed, etc.)? Were samples received in good condition (temperature, unbroken)? Indicate in the table below. If applicable, tissue samples were received: Frozen Partially Thawed Thawed Vere all sample labels complete (i.e analysis, preservation, etc.)? NA Y N Were appropriate bottles/containers and volumes received for the tests indicated? Were the pH-preserved bottles (see SMO GEN SOP) received at the appropriate pH? Indicate in the table below Were VOA vials received without headspace? Indicate in the table below. Was C12/Res negative? Sample ID on Bottle Sample ID on COC Identified by: NA Y N NA Y N Sample ID on Bottle Sample ID on COC Identified by: CO1 - OS 18 17	7 42 73 7	4 70-2	2 3 - 3	17k	3			8/05	9112 1	1291	
Were custody papers properly filled out (ink, signed, etc.)? Were samples received in good condition (temperature, unbroken)? Indicate in the table below. If applicable, tissue samples were received: Frozen Partially Thawed Thawed Were all sample labels complete (i.e analysis, preservation, etc.)? Did all sample labels and tags agree with custody papers? Indicate major discrepancies in the table on page 2. Were appropriate bottles/containers and volumes received for the tests indicated? Were the pH-preserved bottles (see SMO GEN SOP) received at the appropriate pH? Indicate in the table below. Were VOA vials received without headspace? Indicate in the table below. Was C12/Res negative? Sample ID on Bottle Sample ID on Bottle Sample ID on COC Identified by: C01- C21 - O8 [8 7	13 19 14.2 14	7		18	51			874	5 6738	550	7
Were samples received in good condition (temperature, unbroken)? Indicate in the table below. If applicable, tissue samples were received: Frozen Partially Thawed Thawed Were all sample labels complete (i.e. analysis, preservation, etc.)? NA Y N NA Y N Were all sample labels and tags agree with custody papers? Indicate major discrepancies in the table on page 2. NA Y N Were appropriate bottles/containers and volumes received for the tests indicated? Were the pH-preserved bottles (see SMO GEN SOP) received at the appropriate pH? Indicate in the table below Were VOA vials received without headspace? Indicate in the table below. NA Y N Was C12/Res negative? Sample ID on Bottle Sample ID on COC Identified by: Were COA - OK 17 17 Vol - 2 - GOA - OK 17 17 Vol - 2 - GOA - OK 17 17 Vol - 2 - GOA - OK 17 17 Vol - 2 - GOA - OK 17 17 Vol - 2 - GOA - OK 17 17 Vol - 2 - GOA - OK 17 17 Vol - 2 - GOA - OK 17 17 Vol - 3 - GOA - OK 17 17 Vol - 4 - COA - OK 17 17 Vol - 3 - GOA - OK 17 17 Vol - 4 - COA - OK 17 17 Vol - 3 - GOA - OK 17 17 Vol - 4 - COA - OK 17 17 Vol - 4 - COA - OK 17 17 Vol - 4 - COA - OK 17 17 Vol - 4 - COA - OK 17 17 Vol - 4 - COA - OK 17 17 Vol - 4 - COA - OK 17 17 Vol - 4 - COA - OK 17 17 Vol - 4 - COA - OK 17 17 Vol - 4 - COA - OK 17 17 Vol - 4 - COA - OK 17 17 Vol - 4 - COA - OK 17 17 Vol - 4 - COA - OK 17 17 Vol - 4 - COA - OK 17 17 Vol - 4 - COA - OK 17 17 Vol - 4 - COA - OK 17 17 Vol - 4 - COA - OK 17 17 Vol - 4 - COA - OK 17 17 Vol - 4 - COA - OK 17 17 Vol - COA - OK 17 17 Vol - 4 - COA - OK 17 17 Vol - 4 - COA - OK 17 17 Vol - 4 - COA - OK 17 17 Vol - 4 - COA - OK 17 17 Vol - 4 - COA - OK 17 17 Vol - 4 - COA - OK 17 17 Vol - 4 - COA - OK 17 17 Vol - 4 - COA - OK 17 17 Vol - 4 - COA - OK 17 17 Vol - 4 - COA - OK 17 17 Vol - 4 - COA - OK 17 17 Vol - 4 - COA - OK 17 17 Vol - 4 - COA - OK 17 17 Vol - 4 - COA - OK 17 17 Vol - 4 - COA - OK 17 17 Vol - 4 - COA - OK 17 17 Vol - 4 - COA - OK 17 17 Vol - 4 - COA - OK 17 17 Vol - 4 - COA - OK 17 17 V	Packing material: Inserts Baggi	es Bubble I	Vrap)	Gel Pa	icks (Wet I	ce Pry Ice	Sleeves		- 	
If applicable, tissue samples were received: Frozen Partially Thawed Thawed Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N N N N N N N N N N N N N N N N N N		`	. ,						7	NA CY) N
Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N Were appropriate bottles and tags agree with custody papers? Indicate major discrepancies in the table on page 2. NA Y N Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N Were the pH-preserved bottles (see SMO GEN SOP) received at the appropriate pH? Indicate in the table below Were VOA vials received without headspace? Indicate in the table below. Was C12/Res negative? NA Y N NA Y N Sample ID on Bottle Sample ID on COC Identified by: IDI 3 - GO2 - OK 17 17					•					NA. Y	
Were appropriate bottles/containers and volumes received for the tests indicated? Were the pH-preserved bottles (see SMO GEN SOP) received at the appropriate pH? Indicate in the table below NA Y N Were VOA vials received without headspace? Indicate in the table below. NA Y N Was C12/Res negative? Sample ID on Bottle Sample ID on COC Identified by: Identified by: Identified by: Identified by: Identified by: Coi- Coa that Way. Sample ID Bottle Count Bottle Type Bottle Count Temp space Broke PH Reagent Volume Reagent Lot Number Initials Time		•				1102	ch janu	ay inaneu		NA (Y)
Were VOA vials received without headspace? Indicate in the table below. Was C12/Res negative? Sample ID on Bottle Sample ID on COC Identified by: III - 2 - GO2 - Ox 17 17 IVI - 2 - GO2 - Ox 17 17 IVI - 1 - COI - Ox 18 17 Sample ID Bottle Count Bottle Type Bottle Type Bottle Type Bottle Type Bottle Type Broke	Did all sample labels and tags agree	with custody p	papers?	Indic	ate ma	jor dis	crepancies in	the table of	n page 2.	VA Y	(N)
Were VOA vials received without headspace? Indicate in the table below. Was C12/Res negative? Sample ID on Bottle Sample ID on COC Identified by: III. 3 - G02 - OK 17 17	Were appropriate bottles/containers	and volumes	received	for th	e tests	indica	ted?		À	NA (Ý) W
Sample ID on Bottle Sample ID on COC Identified by: III-2-G02-0x1717 401-2-G02-0x17-D "G02-D" on Sample carted to 1-1-C01-0x1x17 (Dates + fines match Coc. "G1-C01-0x1x1x1") Bottle Count Bottle Type Temp space Broke pH Reagent added Number Initials Time			•			•	te pH? Indic	ate in the ta			N
Sample ID on Bottle Sample ID on COC Identified by: 101-2-G02-081717 401-2-G02-0817-D "G02-D" on Sample gar Lide 101-1-C1-081817 401-1-C01-081817 Days + fimes match Col. 104-64 Coi-Con that way. " Sample ID Bottle Count Bottle Type Temp space Broke pH Reagent added Number Initials Time		eadspace? In	dicate ii	n the t	able b	elow.				= 1	
101-1-C1-08[8]7 401-2-G02-08[7-D "G02-D" on Sample far Lide to 1-C1-08[8]7 401-1-C01-08[8]7 Dates + firms match cot. "Got-to 1-C01-08[8]7 Col-09 that way." Bottle Count Bottle Type Temp Space Broke pH Reagent Reag	Was C12/Res negative?						The state of the s	 		YA) Y	N
Sample ID Bottle Count Bottle Type Bottle Type Bottle Type Broke pH Reagent Broke pH Reagent R	Sample ID on Bottle		Sample	iD or	COC				Identified by:	g	
Bottle Count Bottle Type Temp space Broke pH Reagent Added Number Initials Time.	101-2-GO2-81717					<u>-0</u>	- 6				arLia
Sample ID Bottle Count Bottle Type Temp Space Broke pH Reagent added Number Initials Time	101-1-01-08/8/7	401-	<u> 1-C</u>	101	<u>- 08</u>	IXI	/ Date	s + fime	s match C	oc. Ky	91-Cic
Sample ID Bottle Type Temp space Broke pH Reagent added Number Initials Time							100-	cog the	at way, "		
		ottle Count lottle Type	Out of I	lead- pace	Broke	На	Reagent			Initials	Time
s, Discrepancies, & Resolutions: In all of the Coolers, there wasn't											
s, Discrepancies, & Resolutions: In all of the Coolers, there wasn't									· · · · · · · · · · · · · · · · · · ·		
s, Discrepancies, & Resolutions: In all of the Cooleies, there wasn't									<u> </u>		
s, Discrepancies, & Resolutions: In all of the Coolers, there wasn't							<u>-</u>			 	
consuch 100 and what was there was melted.	s, Discrepancies, & Resolution	s: In al	186	11	w_	Cool	ers, t	here	wasnt		
CONTRACTOR OF THE PROPERTY OF	cenough ice a	nd Wh	iat 1	Nas	s H	Nec	e Was	ME1.	tedi		
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Total Solids

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Client: Teck American Incorporated

Date Collected: 08/17/17 - 08/18/17 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17

Analysis Method: 160.3 Modified

Prep Method: None Units: Percent Basis: As Received

Service Request: K1708847

Solids, Total

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
401-2-G05-081717	K1708847-001	95.1	-	-	1	08/25/17 16:15	
401-2-G02-081717-D	K1708847-002	94.6	-	-	1	08/25/17 16:15	
401-2-H01-081717	K1708847-003	94.5	-	-	1	08/25/17 16:15	
401-2-H02-081717	K1708847-004	92.9	-	-	1	08/25/17 16:15	
401-2-H03-081717	K1708847-005	92.6	-	-	1	08/25/17 16:15	
401-2-H04-081717	K1708847-006	94.8	-	-	1	08/25/17 16:15	
401-2-H05-081717	K1708847-007	95.4	-	-	1	08/25/17 16:15	
401-2-I01-081717	K1708847-008	94.1	-	-	1	08/25/17 16:15	
401-2-I02-081717	K1708847-009	95.5	-	-	1	08/25/17 16:15	
401-2-I03-081717	K1708847-010	96.7	-	-	1	08/25/17 16:15	
401-2-I04-081717	K1708847-011	96.6	-	-	1	08/25/17 16:15	
401-2-I05-081717	K1708847-012	96.2	-	-	1	08/25/17 16:15	
401-2-J01-081717	K1708847-013	95.2	-	-	1	08/25/17 16:15	
401-2-J02-081717	K1708847-014	94.6	-	-	1	08/25/17 16:15	
401-2-J03-081717	K1708847-015	96.2	-	-	1	08/25/17 16:15	
401-2-J04-081717	K1708847-016	62.3	-	-	1	08/25/17 16:15	
401-2-J05-081717	K1708847-017	95.7	-	-	1	08/25/17 16:15	
401-2-J04-081717-D	K1708847-018	96.0	-	-	1	08/25/17 16:15	
401-1-A01-081817	K1708847-019	93.9	-	-	1	08/25/17 16:15	
401-1-A02-081817	K1708847-020	97.5	-	-	1	08/25/17 16:15	

QA/QC Report

Client: Teck American Incorporated

Project August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Analysis Method:

160.3 Modified

Prep Method: None

Service Request: K1708847 Date Collected: 08/17/17

Date Received: 08/22/17

Units:Percent
Basis: As Received

Replicate Sample Summary Inorganic Parameters

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Avionoso	RPD	RPD Limit	Date
Sample Manie.	Lab Couc.	WIKL	Resuit	Resuit	Average	KPD	LIIIII	Analyzed
401-2-G05-081717	K1708847-001DUP	=	95.1	95.2	95.2	<1	20	08/25/17
401-2-I04-081717	K1708847-011DUP	-	96.6	96.5	96.6	<1	20	08/25/17

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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Metals

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Service Request: K1708847

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/17/17 13:49

Sample Matrix: Soil Date Received: 08/22/17 09:50

Sample Name: 401-2-G05-081717 **Basis:** Dry

Lab Code: K1708847-001

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 42.3 mg/Kg 4.1 2.0 2 08/31/17 18:12 08/30/17 Lead 6010C 423 mg/Kg2.0 0.7 2 08/31/17 18:12 08/30/17

Printed 9/1/2017 4:36:36 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708847 **Date Collected:** 08/17/17 13:37 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-G02-081717-D Basis: Dry

Lab Code: K1708847-002

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 32.1 mg/Kg 4.2 2.1 2 08/31/17 18:22 08/30/17 Lead 6010C 368 mg/Kg2.1 0.7 2 08/31/17 18:22 08/30/17

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708847 **Date Collected:** 08/17/17 14:12 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Date Received: 08/22/17 09:50 **Sample Matrix:** Soil

Sample Name: 401-2-H01-081717 Basis: Dry

Lab Code: K1708847-003

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed I	Oate Extracted	Q
Arsenic	6010C	45.2	mg/Kg	4.1	2.0	2	08/31/17 18:31	08/30/17	
Lead	6010C	1100	mg/Kg	2.0	0.7	2	08/31/17 18:31	08/30/17	

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708847 **Date Collected:** 08/17/17 14:15 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-H02-081717 Basis: Dry

Lab Code: K1708847-004

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 68.3 mg/Kg 3.6 1.8 2 08/31/17 18:33 08/30/17 Lead 6010C 1280 mg/Kg1.8 0.6 2 08/31/17 18:33 08/30/17

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Analytical Report

Service Request: K1708847

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/17/17 14:18

Sample Matrix: Soil Date Received: 08/22/17 09:50

Sample Name: 401-2-H03-081717 **Basis:** Dry

Lab Code: K1708847-005

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 44.1 mg/Kg 4.2 2.1 2 08/31/17 18:35 08/30/17 Lead 6010C 1110 mg/Kg2.1 0.7 2 08/31/17 18:35 08/30/17

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708847 **Date Collected:** 08/17/17 14:21 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-H04-081717 Basis: Dry

Lab Code: K1708847-006

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 48.8 mg/Kg 4.0 2.0 2 08/31/17 18:37 08/30/17 Lead 6010C 420 mg/Kg2.0 0.7 2 08/31/17 18:37 08/30/17

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708847 **Date Collected:** 08/17/17 14:24 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Date Received: 08/22/17 09:50 **Sample Matrix:** Soil

Sample Name: 401-2-H05-081717 Basis: Dry

Lab Code: K1708847-007

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	ate Extracted	Q
Arsenic	6010C	25.9	mg/Kg	4.0	2.0	2	08/31/17 18:39	08/30/17	
Lead	6010C	337	mg/Kg	2.0	0.7	2	08/31/17 18:39	08/30/17	

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708847 **Date Collected:** 08/17/17 14:32 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-I01-081717 Basis: Dry

Lab Code: K1708847-008

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 36.8 mg/Kg 3.8 1.9 2 08/31/17 18:41 08/30/17 Lead 6010C 837 mg/Kg1.9 0.7 2 08/31/17 18:41 08/30/17

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Analytical Report

Service Request: K1708847

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/17/17 14:35

Sample Matrix: Soil Date Received: 08/22/17 09:50

Sample Name: 401-2-I02-081717 **Basis:** Dry

Lab Code: K1708847-009

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 29.3 mg/Kg 4.1 2.1 2 08/31/17 18:43 08/30/17 Lead 6010C 544 mg/Kg2.1 0.7 2 08/31/17 18:43 08/30/17

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708847 **Date Collected:** 08/17/17 14:38 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-I03-081717 Basis: Dry

Lab Code: K1708847-010

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 28.0 mg/Kg 3.9 2.0 2 08/31/17 18:45 08/30/17 Lead 6010C 572 mg/Kg2.0 0.7 2 08/31/17 18:45 08/30/17

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708847 **Date Collected:** 08/17/17 14:40 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-I04-081717 Basis: Dry

Lab Code: K1708847-011

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 19.0 mg/Kg 4.1 2.0 2 08/31/17 18:48 08/30/17 Lead 6010C 251 mg/Kg2.0 0.7 2 08/31/17 18:48 08/30/17

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708847 **Date Collected:** 08/17/17 14:43 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-I05-081717 Basis: Dry

Lab Code: K1708847-012

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 23.7 mg/Kg 3.8 1.9 2 08/31/17 18:50 08/30/17 Lead 6010C 287 mg/Kg1.9 0.7 2 08/31/17 18:50 08/30/17

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Analytical Report

Service Request: K1708847

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/17/17 14:52

Sample Matrix: Soil Date Received: 08/22/17 09:50

Sample Name: 401-2-J01-081717 **Basis:** Dry

Lab Code: K1708847-013

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 34.5 mg/Kg 3.9 1.9 2 08/31/17 18:58 08/30/17 Lead 6010C **298** mg/Kg1.9 0.7 2 08/31/17 18:58 08/30/17

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708847 **Date Collected:** 08/17/17 14:54 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-J02-081717 Basis: Dry

Lab Code: K1708847-014

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 36.1 mg/Kg 4.0 2.0 2 08/31/17 19:00 08/30/17 Lead 6010C 1100 mg/Kg2.0 0.7 2 08/31/17 19:00 08/30/17

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708847 **Date Collected:** 08/17/17 14:56 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-J03-081717 Basis: Dry

Lab Code: K1708847-015

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 20.2 mg/Kg 4.1 2.1 2 08/31/17 19:02 08/30/17 Lead 6010C 394 mg/Kg2.1 0.7 2 08/31/17 19:02 08/30/17

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708847 **Date Collected:** 08/17/17 14:59 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-J04-081717 Basis: Dry

Lab Code: K1708847-016

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 59.4 mg/Kg 3.7 1.9 2 08/31/17 19:05 08/30/17 Lead 6010C **850** mg/Kg1.9 0.6 2 08/31/17 19:05 08/30/17

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708847 **Date Collected:** 08/17/17 15:02 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-J05-081717 Basis: Dry

Lab Code: K1708847-017

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 79.8 mg/Kg 4.1 2.0 2 08/31/17 19:07 08/30/17 Lead 6010C 893 mg/Kg2.0 0.7 2 08/31/17 19:07 08/30/17

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708847 **Date Collected:** 08/17/17 14:59 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-2-J04-081717-D Basis: Dry

Lab Code: K1708847-018

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 62.7 mg/Kg 4.0 2.0 2 08/31/17 19:09 08/30/17 Lead 6010C 839 mg/Kg2.0 0.7 2 08/31/17 19:09 08/30/17

Printed 9/1/2017 4:36:37 PM Superset Reference:

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Analytical Report

Service Request: K1708847

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/18/17 09:27

Sample Matrix: Soil Date Received: 08/22/17 09:50

Sample Name: 401-1-A01-081817 **Basis:** Dry

Lab Code: K1708847-019

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 48.7 mg/Kg 4.1 2.0 2 08/31/17 19:11 08/30/17 Lead 6010C 574 mg/Kg2.0 0.7 2 08/31/17 19:11 08/30/17

Printed 9/1/2017 4:36:37 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708847 **Date Collected:** 08/18/17 09:30 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Date Received: 08/22/17 09:50 **Sample Matrix:** Soil

Sample Name: 401-1-A02-081817 Basis: Dry

Lab Code: K1708847-020

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed Date Extracted		
Arsenic	6010C	12.5	mg/Kg	3.4	1.7	2	08/31/17 19:13	08/30/17	
Lead	6010C	219	mg/Kg	1.7	0.6	2	08/31/17 19:13	08/30/17	

Printed 9/1/2017 4:36:37 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708847

Date Collected: NA **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001 **Sample Matrix:** Soil Date Received: NA

Sample Name: Method Blank Basis: Dry

Lab Code: KQ1712439-02

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q 08/30/17 Arsenic 6010C ND U mg/Kg 4 2.0 2 08/31/17 18:07 Lead 6010C ND U mg/Kg2 0.7 2 08/31/17 18:07 08/30/17

Printed 9/1/2017 4:36:38 PM Superset Reference:

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QA/QC Report

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001

.

K1708847

Project: Sample Matrix:

Soil

Date Collected:

08/17/17

Date Received:

Service Request:

08/22/17

Date Analyzed:

08/31/17

Date Extracted:

08/30/17

Duplicate Matrix Spike Summary

Total Metals

Sample Name:

401-2-G05-081717

Units: Basis:

mg/Kg Dry

Lab Code:

K1708847-001

Analysis Method: Prep Method:

6010C EPA 3050B

.

Duplicate Matrix Spike

KQ1712439-04

Matrix Spike KQ1712439-03

	Sample		Spike			Spike		% Rec		RPD
Analyte Name	Result	Result	Amount	% Rec	Result	Amount	% Rec	Limits	RPD	Limit
Arsenic	42.3	131	94.7	93	138	98.3	98	75-125	6	30
Lead	423	449	94.7	27 #	480	98.3	57 #	75-125	7	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Printed 9/1/2017 4:36:38 PM Superset Reference:

QA/QC Report

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Service Request: K1708847 **Date Analyzed:** 08/31/17

Lab Control Sample Summary Total Metals

> Units:mg/Kg Basis:Dry

Lab Control Sample KQ1712439-01

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Arsenic	6010C	499	500	100	80-120
Lead	6010C	528	500	106	80-120

Printed 9/1/2017 4:36:37 PM Superset Reference:



ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue Kelso, WA 98626

T:+1 360 577 7222

F: +1 360 636 1068 www.alsglobal.com

September 05, 2017

Analytical Report for Service Request No: K1708848

Dave Enos Teck American Incorporated 501 North Riverpoint Blvd., Suite 300 Spokane, WA 99202

RE: August 2017 Sampling SAT Study / B0095010.0005.00001

Dear Dave,

Enclosed are the results of the sample(s) submitted to our laboratory August 22, 2017 For your reference, these analyses have been assigned our service request number **K1708848**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3330. You may also contact me via email at Jeff.Coronado@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Jeff Coronado

Metals Department

Manager



ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue Kelso, WA 98626

T: +1 360 577 7222 F: +1 360 636 1068 www.alsglobal.com

Table of Contents

Acronyms

Qualifiers

State Certifications, Accreditations, And Licenses

Case Narrative

Chain of Custody

Total Solids

Metals

Acronyms

ASTM American Society for Testing and Materials

A2LA American Association for Laboratory Accreditation

CARB California Air Resources Board

CAS Number Chemical Abstract Service registry Number

CFC Chlorofluorocarbon
CFU Colony-Forming Unit

DEC Department of Environmental Conservation

DEQ Department of Environmental Quality

DHS Department of Health Services

DOE Department of Ecology
DOH Department of Health

EPA U. S. Environmental Protection Agency

ELAP Environmental Laboratory Accreditation Program

GC Gas Chromatography

GC/MS Gas Chromatography/Mass Spectrometry

LOD Limit of Detection
LOO Limit of Quantitation

LUFT Leaking Underground Fuel Tank

M Modified

MCL Maximum Contaminant Level is the highest permissible concentration of a substance

allowed in drinking water as established by the USEPA.

MDL Method Detection Limit
MPN Most Probable Number
MRL Method Reporting Limit

NA Not Applicable
NC Not Calculated

NCASI National Council of the Paper Industry for Air and Stream Improvement

ND Not Detected

NIOSH National Institute for Occupational Safety and Health

PQL Practical Quantitation Limit

RCRA Resource Conservation and Recovery Act

SIM Selected Ion Monitoring

TPH Total Petroleum Hydrocarbons

tr Trace level is the concentration of an analyte that is less than the PQL but greater than or

equal to the MDL.

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- \boldsymbol{Q} $\;\;$ See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L14-51
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	_
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
	https://deq.nc.gov/about/divisions/water-resources/water-resources-	
	data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-	
North Carolina DEQ	certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaborator	
Oregon – DEQ (NELAP)	yAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.



Case Narrative

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

ALS ENVIRONMENTAL

Client: Teck American Incorporated Service Request No.: K1708848

Project: August 2017 Sampling SAT Study/ Date Received: 08/22/17

B0095010.0005.00001

Sample Matrix: Soil

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

Sample Receipt

Twenty soil samples were received for analysis at ALS Environmental on 08/22/17. The samples were received in good condition and consistent with the accompanying chain of custody form, except where noted on the cooler receipt and preservation form included in this report.. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Total Metals

No anomalies associated with the analysis of these samples were observed.

Approved by Cil



Chain of Custody

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Date 8/20/17
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	F04				1314		S	1	X						
	F05				1317		s	1	X						
	F06		T		1320		S	1	X						
	F07				1323		s	1	X						
	Fog				1346		S	1	X						
	F69				1349		S	1	X						
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1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068



Date 8/20//7
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	G04				1418		S	1	X						
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1317 South 13th, Kelso, WA 98626

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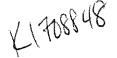


Date 8/20/17
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Invoice Information			raw data)									
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25/16

Cooler Receipt and Preservation Form ieck America Service Request K17 Unloaded: By: Samples were received via? USPS **UPS** Fed Ex DHL PDX Courier Hand Delivered Samples were received in: (circle) Cooler Box Envelope Other NA Were custody seals on coolers? N If yes, how many and where? If present, were custody seals intact? N If present, were they signed and dated? Y Ν Cooler/COC ID **Tracking Number** Corr. Thermometer Corrected NA Temp Blank **Factor** NA Filed emp Slank 3. 20 Inserts Baggies (Bubble Wrap') Gel Packs Wet Ice Sleeves Packing material: ry Ice Were custody papers properly filled out (ink, signed, etc.)? NA Were samples received in good condition (temperature, unbroken)? Indicate in the table below. NA If applicable, tissue samples were received. Frozen Partially Thawed Thawed Were all sample labels complete (i.e analysis, preservation, etc.)? NA Did all sample labels and tags agree with custody papers? Indicate major discrepancies in the table on page 2. NA Were appropriate bottles/containers and volumes received for the tests indicated? Were the pH-preserved bottles (see SMO GEN SOP) received at the appropriate pH? Indicate in the table below NA Were VOA vials received without headspace? Indicate in the table below. Ν Was C12/Res negative? N Sample ID on Bottle Sample ID on COC identified by: 401-2-602-081 G02-08 **Bottle Count** Out of Head-Volume Reagent Lot Sample ID **Bottle Type** Temp space pH Reagent added Number Initials Time In al s, Discrepancies, & Resolutions:_ was there was malted and

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Page of



Total Solids

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Client: Teck American Incorporated

Service Request: K1708848 **Date Collected:** 08/18/17 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix:

Analysis Method:

Soil

160.3 Modified Units: Percent

Prep Method: None Basis: As Received

Date Received: 08/22/17

Solids, Total

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
401-1-F10-081817	K1708848-001	93.0	-	-	1	08/26/17 10:27	
401-1-G01-081817	K1708848-002	97.8	-	-	1	08/26/17 10:27	
401-1-G02-081817	K1708848-003	97.8	-	-	1	08/26/17 10:27	
401-1-G03-081817	K1708848-004	97.0	-	-	1	08/26/17 10:27	
401-1-G04-081817	K1708848-005	97.1	-	-	1	08/26/17 10:27	
401-1-G05-081817	K1708848-006	96.4	-	-	1	08/26/17 10:27	
401-1-G06-081817	K1708848-007	95.3	-	-	1	08/26/17 10:27	
401-1-G07-081817	K1708848-008	96.8	-	-	1	08/26/17 10:27	
401-1-G08-081817	K1708848-009	92.4	-	-	1	08/26/17 10:27	
401-1-G09-081817	K1708848-010	93.7	-	-	1	08/26/17 10:27	
401-1-G10-081817	K1708848-011	95.7	-	-	1	08/26/17 10:27	
401-1-G09-081817-D	K1708848-012	93.5	-	-	1	08/26/17 10:27	
401-1-H01-081817	K1708848-013	97.2	-	-	1	08/26/17 10:27	
401-1-H02-081817	K1708848-014	96.5	-	-	1	08/26/17 10:27	
401-1-H03-081817	K1708848-015	95.3	-	-	1	08/26/17 10:27	
401-1-H04-081817	K1708848-016	96.4	-	-	1	08/26/17 10:27	
401-1-H05-081817	K1708848-017	97.7	-	-	1	08/26/17 10:27	
401-1-H06-081817	K1708848-018	93.6	-	-	1	08/26/17 10:27	
401-1-H07-081817	K1708848-019	95.5	-	-	1	08/26/17 10:27	
401-1-H08-081817	K1708848-020	96.1	-	-	1	08/26/17 10:27	

QA/QC Report

Client: Teck American Incorporated

Project August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Analysis Method:

160.3 Modified

Prep Method: None

Service Request:K1708848 Date Collected:08/18/17 Date Received:08/22/17

Units:Percent
Basis: As Received

Replicate Sample Summary Inorganic Parameters

			Sample	Duplicate			RPD	Date
Sample Name:	Lab Code:	MRL	Result	Result	Average	RPD	Limit	Analyzed
401-1-F10-081817	K1708848-001DUP	-	93.0	93.8	93.4	<1	20	08/26/17
401-1-G10-081817	K1708848-011DUP	-	95.7	95.3	95.5	<1	20	08/26/17

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Printed 09/05/17 1:17:49 PM Superset Reference:17-0000434649 rev 00



Metals

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Service Request: K1708848

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/18/17 13:52

Sample Matrix: Soil Date Received: 08/22/17 09:50

Sample Name: 401-1-F10-081817 **Basis:** Dry

Lab Code: K1708848-001

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 50.3 mg/Kg 3.8 0.8 2 08/31/17 17:08 08/30/17 Lead 6010C 657 mg/Kg1.9 0.4 2 08/31/17 17:08 08/30/17

Printed 9/1/2017 4:38:27 PM Superset Reference:

Analytical Report

Client: Teck American Incorporated

Service Request: K1708848 **Date Collected:** 08/18/17 14:09 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-1-G01-081817 Basis: Dry

Lab Code: K1708848-002

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 27.6 mg/Kg 3.8 0.8 2 08/31/17 17:19 08/30/17 Lead 6010C 391 mg/Kg1.9 0.4 2 08/31/17 17:19 08/30/17

Printed 9/1/2017 4:38:27 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708848 **Date Collected:** 08/18/17 14:12 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Date Received: 08/22/17 09:50

Basis: Dry

Sample Name: 401-1-G02-081817

Lab Code: K1708848-003

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	Oate Extracted	Q
Arsenic	6010C	20.7	mg/Kg	3.8	0.8	2	08/31/17 17:22	08/30/17	
Lead	6010C	311	mg/Kg	1 9	0.4	2	08/31/17 17:22	08/30/17	

Printed 9/1/2017 4:38:27 PM Superset Reference:

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Analytical Report

Service Request: K1708848

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/18/17 14:15

Sample Matrix: Soil Date Received: 08/22/17 09:50

Sample Name: 401-1-G03-081817 **Basis:** Dry

Lab Code: K1708848-004

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 30.9 mg/Kg 3.9 0.8 2 08/31/17 17:24 08/30/17 Lead 6010C 409 mg/Kg2.0 0.4 2 08/31/17 17:24 08/30/17

Printed 9/1/2017 4:38:27 PM Superset Reference:

Analytical Report

Service Request: K1708848

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/18/17 14:18

Sample Matrix: Soil Date Received: 08/22/17 09:50

Sample Name: 401-1-G04-081817 **Basis:** Dry

Lab Code: K1708848-005

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 28.7 mg/Kg 3.4 0.7 2 08/31/17 17:33 08/30/17 Lead 6010C 385 mg/Kg1.7 0.3 2 08/31/17 17:33 08/30/17

Printed 9/1/2017 4:38:28 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708848 **Date Collected:** 08/18/17 14:22 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-1-G05-081817 Basis: Dry

Lab Code: K1708848-006

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q 19.9 Arsenic 6010C mg/Kg 4.0 0.8 2 08/31/17 17:36 08/30/17 Lead 6010C 231 mg/Kg2.0 0.4 2 08/31/17 17:36 08/30/17

Printed 9/1/2017 4:38:28 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708848 **Date Collected:** 08/18/17 14:25 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-1-G06-081817 Basis: Dry

Lab Code: K1708848-007

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 43.0 mg/Kg 3.5 0.7 2 08/31/17 17:38 08/30/17 Lead 6010C **588** mg/Kg1.8 0.4 2 08/31/17 17:38 08/30/17

Printed 9/1/2017 4:38:28 PM Superset Reference:

Analytical Report

Client: Teck American Incorporated

Service Request: K1708848 **Date Collected:** 08/18/17 14:31 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-1-G07-081817 Basis: Dry

Lab Code: K1708848-008

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 26.7 mg/Kg 4.1 0.8 2 08/31/17 17:40 08/30/17 Lead 6010C **301** mg/Kg2.1 0.4 2 08/31/17 17:40 08/30/17

Printed 9/1/2017 4:38:28 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708848 **Date Collected:** 08/18/17 14:32 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-1-G08-081817 Basis: Dry

Lab Code: K1708848-009

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 90.5 mg/Kg 4.0 0.8 2 08/31/17 17:42 08/30/17 Lead 6010C 1360 mg/Kg2.0 0.4 2 08/31/17 17:42 08/30/17

Printed 9/1/2017 4:38:28 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708848 **Date Collected:** 08/18/17 14:37 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-1-G09-081817 Basis: Dry

Lab Code: K1708848-010

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 41.3 mg/Kg 3.8 0.8 2 08/31/17 17:45 08/30/17 Lead 6010C 309 mg/Kg1.9 0.4 2 08/31/17 17:45 08/30/17

Printed 9/1/2017 4:38:28 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708848 **Date Collected:** 08/18/17 14:40 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-1-G10-081817 Basis: Dry

Lab Code: K1708848-011

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 59.6 mg/Kg 4.1 0.8 2 08/31/17 17:47 08/30/17 Lead 6010C 1740 mg/Kg2.1 0.4 2 08/31/17 17:47 08/30/17

Printed 9/1/2017 4:38:28 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708848 **Date Collected:** 08/18/17 14:37 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Date Received: 08/22/17 09:50

Sample Name: 401-1-G09-081817-D Basis: Dry

Lab Code: K1708848-012

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	Pate Extracted	Q
Arsenic	6010C	39.0	mg/Kg	4.2	0.8	2	08/31/17 17:49	08/30/17	
Lead	6010C	288	mg/Kg	2.1	0.4	2	08/31/17 17:49	08/30/17	

Printed 9/1/2017 4:38:28 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708848 **Date Collected:** 08/18/17 14:58 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-1-H01-081817 Basis: Dry

Lab Code: K1708848-013

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 38.4 mg/Kg 4.0 0.8 2 08/31/17 17:52 08/30/17 Lead 6010C 444 mg/Kg2.0 0.4 2 08/31/17 17:52 08/30/17

Printed 9/1/2017 4:38:28 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708848 **Date Collected:** 08/18/17 15:02 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-1-H02-081817 Basis: Dry

Lab Code: K1708848-014

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 32.9 mg/Kg 4.1 0.8 2 08/31/17 17:54 08/30/17 Lead 6010C **508** mg/Kg2.1 0.4 2 08/31/17 17:54 08/30/17

Printed 9/1/2017 4:38:28 PM Superset Reference:

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Analytical Report

Service Request: K1708848

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/18/17 15:06

Sample Matrix: Soil Date Received: 08/22/17 09:50

Sample Name: 401-1-H03-081817 **Basis:** Dry

Lab Code: K1708848-015

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 37.4 mg/Kg 4.1 0.8 2 08/31/17 18:06 08/30/17 Lead 6010C 693 mg/Kg2.0 0.4 2 08/31/17 18:06 08/30/17

Printed 9/1/2017 4:38:28 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708848 **Date Collected:** 08/18/17 15:09 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-1-H04-081817 Basis: Dry

Lab Code: K1708848-016

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 25.8 mg/Kg 3.6 0.7 2 08/31/17 18:08 08/30/17 Lead 6010C 360 mg/Kg1.8 0.4 2 08/31/17 18:08 08/30/17

Printed 9/1/2017 4:38:28 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708848 **Date Collected:** 08/18/17 15:13 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-1-H05-081817 Basis: Dry

Lab Code: K1708848-017

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 26.2 mg/Kg 3.6 0.7 2 08/31/17 18:10 08/30/17 Lead 6010C 333 mg/Kg1.8 0.4 2 08/31/17 18:10 08/30/17

Printed 9/1/2017 4:38:28 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708848 **Date Collected:** 08/18/17 15:16 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-1-H06-081817 Basis: Dry

Lab Code: K1708848-018

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 45.0 mg/Kg 4.1 0.8 2 08/31/17 18:13 08/30/17 Lead 6010C **566** mg/Kg2.1 0.4 2 08/31/17 18:13 08/30/17

Printed 9/1/2017 4:38:28 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708848 **Date Collected:** 08/18/17 15:19 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-1-H07-081817 Basis: Dry

Lab Code: K1708848-019

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 33.8 mg/Kg 4.1 0.8 2 08/31/17 18:15 08/30/17 Lead 6010C 336 mg/Kg2.1 0.4 2 08/31/17 18:15 08/30/17

Printed 9/1/2017 4:38:29 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708848 **Date Collected:** 08/18/17 15:22 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-1-H08-081817 Basis: Dry

Lab Code: K1708848-020

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 43.7 mg/Kg 3.9 0.8 2 08/31/17 18:17 08/30/17 Lead 6010C **190** mg/Kg2.0 0.4 2 08/31/17 18:17 08/30/17

Printed 9/1/2017 4:38:29 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated Service Request: K1708848

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 Date Collected: NA

Soil

Date Received: NA

Sample Matrix:

Basis: Dry

Sample Name:

Method Blank

Lab Code: KQ1712440-02

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	Pate Extracted	Q
Arsenic	6010C	ND U	mg/Kg	4	0.8	2	08/31/17 17:03	08/30/17	
Lead	6010C	ND U	mg/Kg	2	0.4	2	08/31/17 17:03	08/30/17	

Printed 9/1/2017 4:38:29 PM Superset Reference:

QA/QC Report

Client:Teck American IncorporatedService Request:K1708848Project:August 2017 Sampling SAT Study/B0095010.0005.00001Date Collected:08/18/17Sample Matrix:SoilDate Received:08/22/17

Date Received: 08/22/17 **Date Analyzed:** 08/31/17 **Date Extracted:** 08/30/17

Duplicate Matrix Spike Summary Total Metals

 Sample Name:
 401-1-F10-081817
 Units: mg/Kg

 Lab Code:
 K1708848-001
 Basis: Dry

Analysis Method: 6010C **Prep Method:** EPA 3050B

Matrix SpikeDuplicate Matrix SpikeKQ1712440-03KQ1712440-04

	Sample		Spike			Spike		% Rec		RPD
Analyte Name	Result	Result	Amount	% Rec	Result	Amount	% Rec	Limits	RPD	Limit
Arsenic	50.3	152	103	99	153	103	99	75-125	<1	30
Lead	657	775	103	115#	774	103	113#	75-125	<1	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Printed 9/1/2017 4:38:29 PM Superset Reference:

QA/QC Report

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Lab Control Sample Summary Total Metals

> Units:mg/Kg Basis:Dry

Service Request: K1708848

Date Analyzed: 08/31/17

Lab Control Sample

KQ1712440-01

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Arsenic	6010C	494	500	99	80-120
Lead	6010C	494	500	99	80-120

Printed 9/1/2017 4:38:29 PM Superset Reference:

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ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue Kelso, WA 98626

T:+1 360 577 7222

F:+1 360 636 1068 www.alsglobal.com

September 05, 2017

Analytical Report for Service Request No: K1708849

Dave Enos Teck American Incorporated 501 North Riverpoint Blvd., Suite 300 Spokane, WA 99202

RE: August 2017 Sampling SAT Study / B0095010.0005.00001

Dear Dave.

Enclosed are the results of the sample(s) submitted to our laboratory August 22, 2017 For your reference, these analyses have been assigned our service request number **K1708849**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3330. You may also contact me via email at Jeff.Coronado@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Jeff Coronado Metals Department

Manager



ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue Kelso, WA 98626

T: +1 360 577 7222 F: +1 360 636 1068 www.alsglobal.com

Table of Contents

Acronyms

Qualifiers

State Certifications, Accreditations, And Licenses

Case Narrative

Chain of Custody

Total Solids

Metals

Acronyms

ASTM American Society for Testing and Materials

A2LA American Association for Laboratory Accreditation

CARB California Air Resources Board

CAS Number Chemical Abstract Service registry Number

CFC Chlorofluorocarbon
CFU Colony-Forming Unit

DEC Department of Environmental Conservation

DEQ Department of Environmental Quality

DHS Department of Health Services

DOE Department of Ecology
DOH Department of Health

EPA U. S. Environmental Protection Agency

ELAP Environmental Laboratory Accreditation Program

GC Gas Chromatography

GC/MS Gas Chromatography/Mass Spectrometry

LOD Limit of Detection
LOQ Limit of Quantitation

LUFT Leaking Underground Fuel Tank

M Modified

MCL Maximum Contaminant Level is the highest permissible concentration of a substance

allowed in drinking water as established by the USEPA.

MDL Method Detection Limit
MPN Most Probable Number
MRL Method Reporting Limit

NA Not Applicable
NC Not Calculated

NCASI National Council of the Paper Industry for Air and Stream Improvement

ND Not Detected

NIOSH National Institute for Occupational Safety and Health

PQL Practical Quantitation Limit

RCRA Resource Conservation and Recovery Act

SIM Selected Ion Monitoring

TPH Total Petroleum Hydrocarbons

tr Trace level is the concentration of an analyte that is less than the PQL but greater than or

equal to the MDL.

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L14-51
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	_
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
	https://deq.nc.gov/about/divisions/water-resources/water-resources-	
	data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-	
North Carolina DEQ	certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaborator	
Oregon – DEQ (NELAP)	yAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.



Case Narrative

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

ALS ENVIRONMENTAL

Client:Teck American IncorporatedService Request No.:K1708849Project:August 2017 Sampling SAT Study/Date Received:08/22/17

B0095010.0005.00001

Sample Matrix: Soil

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

Sample Receipt

Twenty soil samples were received for analysis at ALS Environmental on 08/22/17. The samples were received in good condition and consistent with the accompanying chain of custody form, except where noted on the cooler receipt and preservation form included in this report.. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Total Metals

No anomalies associated with the analysis of these samples were observed.

Approved by



Chain of Custody

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

K1708849

Date 8/20/17

PAGE 4 OF 15

Analysis Requested Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001 ead/arsenic 3050B/6010 Project Contact: Kady Young Company: Arcadis Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488 City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961 Sampler's Signature: Matrix Time LAB ID REMARKS Sample I.D. 401-1-CO1-081817 8/18/17/1033 \mathbf{X} 1035 S C02 X C03 1038 Х 1040 C04 X 042 COS X 1045 C06 Х 1048 C07 X 1051 C08 \mathbf{X} 054 C09 X 1057 CIO 1 FURNAROUND REQUIREMENTS Comments/Special Instructions: REPORT REQUIREMENTS 24 hr ____ 48 hr ___ 5 day 1. Routine Report: Results, Method Blank, Hold Remainder X Standard (10 days) Surrogate, as required **Provide FAX Preliminary Results** II. Report Dup., MS, MSD as required Requested Report Date: III. Data Validation Report (includes Invoice Information raw data) P.O. # UCR-ALS-D34-17 IV. CLP Deliverable Report Bill to: Cristy Kessel - Teck American V. EDD 501 N Riverpoint Blvd, Suite 300 Spokane, WA 992 RECEIVED BY:
Signature: Courses RELINQUISHED BY: RELINQUISHED BY: RECEIVED BY: Signature: at ... Signature: Printed Name: Watson Metsutnam Printed Name: CODY GRAVES Printed Name: Printed Name: Firm: Arcadi's
Date/Time: 8/21/17 13:00 Firm: ALS

Date/Time: 8/12/17 6950 Firm: _____ Date/Time: Date/Time:

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

K1708849

Date 8/20/17

PAGE 5 OF 15

SR#

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Project Contact: <u>Kady Young</u> Co	ompany: <u>A</u>	rcadis			aine	9						
Company/Address: 189 North Ced	dar Street	Phone: <u>30</u>	7-203-3510 or 810-588-1488		Containers	ead/arsenic 3050B/6010						
City, State, Zip: Buffalo, WY 828	34 FAX: 3	07-684-596	11		jo	ic 3(
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24 hr 48 hr 5	day		I. Routine Report: Results, Method B	lank,	Hold	Remainde	er					
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Requested Report Date:			III. Data Validation Report (includes									
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Date/Time: 8/21/17 13:6	<i>9</i>	Date/Time:	8/22/17 0950		Date/7	Fime:				Date/Time:		

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

K1708849

Date 2/20/17

PAGE 6 OF 15

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	D06				1124		S	1	X						
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	o: Cristy Kessel - Teck	Americ	can			V. EDD									Ī
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(ALS)							PC (JC
	Coo	ler Receipt	and Pres	ervation Fori	m			
nt TECK AMER	100.		Sei	vice Request <i>I</i>	K1708	8419	_	
eived: 8/22/17_0	Opened: 8/2	2/17	ву: <u>К</u> 1		ded: S		y: Kn	1.
Samples were received via?	USPS Fed	Ex UPS	DHL	PDX Cou	urier H	and Delivered		
Samples were received in: (circ	cle) (Cooler	Box	Envelope	Other		100	NA	
Were custody seals on coolers?	NA	YN	If yes,	how many and v	where?	Front	·	
If present, were custody seals in	ntact?	Y N	lfp	resent, were the	y signed an	d dated?	Y	N
Were custody papers properly f Were samples received in good	filled out (ink, sig condition (tempe icable, tissue sam e (i.e analysis, pre gree with custody	Wrap Gel Forned, etc.)? erature, unbrole ples were recesservation, etc. papers? Indi	Packs (Wender)? Indicatived: Fr	ozen Partiall	ly Thawed	Thawed N 1 page 2.	5575 5586 5566 5566 1296 1296 1296 1296 1296 1296 1296 12	NA Filed
Were the pH-preserved bottles Were VOA vials received with			-		ite in the ta	ble below (N	Y Y Y Y	N ·
Was C12/Res negative?						7	ÎA) Y	N
Sample ID on Bottle		Sample ID c				Identified by:	i.	.,,
01-9-305-08171		2-602.	0817-6		502 - I			arlid
101-1-C1-0818	17 401	- 1-COI	'-0818	1/ Dates	cog the	s match C it way. "	106° KA	91-66
	Bottle Count	Out of Head			Volume	Reagent Lot		
Sample ID	Bottle Type	Temp space	Broke pH	Reagent	added	Number	Initials	Time
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Total Solids

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Client: Teck American Incorporated

Service Request: K1708849 **Date Collected:** 08/18/17 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Date Received: 08/22/17 160.3 Modified

Analysis Method: Units: Percent **Prep Method:** Basis: As Received None

Solids, Total

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
401-1-C02-081817	K1708849-001	95.2	-	-	1	08/26/17 10:27	
401-1-C03-081817	K1708849-002	97.8	-	-	1	08/26/17 10:27	
401-1-C04-081817	K1708849-003	97.5	-	-	1	08/26/17 10:27	
401-1-C05-081817	K1708849-004	95.5	-	-	1	08/26/17 10:27	
401-1-C06-081817	K1708849-005	95.9	-	-	1	08/26/17 10:27	
401-1-C07-081817	K1708849-006	95.4	-	-	1	08/26/17 10:27	
401-1-C08-081817	K1708849-007	94.7	-	-	1	08/26/17 10:27	
401-1-C09-081817	K1708849-008	95.5	-	-	1	08/26/17 10:27	
401-1-C10-081817	K1708849-009	96.9	-	-	1	08/26/17 10:27	
401-1-C09-081817-D	K1708849-010	95.5	-	-	1	08/26/17 10:27	
401-1-D01-081817	K1708849-011	97.1	-	-	1	08/26/17 10:27	
401-1-D02-081817	K1708849-012	97.4	-	-	1	08/26/17 10:27	
401-1-D03-081817	K1708849-013	97.0	-	-	1	08/26/17 10:27	
401-1-D04-081817	K1708849-014	94.3	-	-	1	08/26/17 10:27	
401-1-D05-081817	K1708849-015	96.0	-	-	1	08/26/17 10:27	
401-1-D06-081817	K1708849-016	95.8	-	-	1	08/26/17 10:27	
401-1-D07-081817	K1708849-017	96.3	-	-	1	08/26/17 10:27	
401-1-D08-081817	K1708849-018	93.4	-	-	1	08/26/17 10:27	
401-1-D09-081817	K1708849-019	89.4	-	-	1	08/26/17 10:27	
401-1-D10-081817	K1708849-020	93.7	-	-	1	08/26/17 10:27	

QA/QC Report

Client: Teck American Incorporated

Project August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

160.3 Modified

Prep Method: None

Analysis Method:

Service Request:K1708849

Date Collected:08/18/17

Date Received:08/22/17

Units:Percent

Basis: As Received

Replicate Sample Summary Inorganic Parameters

			Sample	Duplicate			RPD	Date
Sample Name:	Lab Code:	MRL	Result	Result	Average	RPD	Limit	Analyzed
401-1-C02-081817	K1708849-001DUP	-	95.2	95.2	95.2	<1	20	08/26/17
401-1-D01-081817	K1708849-011DUP	-	97.1	97.3	97.2	<1	20	08/26/17

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Printed 09/05/17 1:19:43 PM Superset Reference:17-0000434650 rev 00



Metals

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Service Request: K1708849

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/18/17 10:35

Sample Matrix: Soil Date Received: 08/22/17 09:50

Sample Name: 401-1-C02-081817 **Basis:** Dry

Lab Code: K1708849-001

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 33.3 mg/Kg 4.1 0.8 2 08/31/17 18:24 08/30/17 Lead 6010C **730** mg/Kg2.1 0.4 2 08/31/17 18:24 08/30/17

Printed 9/1/2017 4:39:27 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708849 **Date Collected:** 08/18/17 10:38 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Date Received: 08/22/17 09:50 **Sample Matrix:** Soil

Sample Name: 401-1-C03-081817 Basis: Dry

Lab Code: K1708849-002

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	ate Extracted	Q
Arsenic	6010C	22.2	mg/Kg	4.1	0.8	2	08/31/17 18:42	08/30/17	
Lead	6010C	322	mg/Kg	2.0	0.4	2	08/31/17 18:42	08/30/17	

Printed 9/1/2017 4:39:28 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708849 **Date Collected:** 08/18/17 10:40 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Date Received: 08/22/17 09:50 **Sample Matrix:** Soil

Sample Name: 401-1-C04-081817 Basis: Dry

Lab Code: K1708849-003

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	ate Extracted	Q
Arsenic	6010C	25.5	mg/Kg	3.9	0.8	2	08/31/17 18:45	08/30/17	
Lead	6010C	304	mg/Kg	1.9	0.4	2	08/31/17 18:45	08/30/17	

Printed 9/1/2017 4:39:28 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708849 **Date Collected:** 08/18/17 10:42 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-1-C05-081817 Basis: Dry

Lab Code: K1708849-004

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 28.6 mg/Kg 4.1 0.8 2 08/31/17 18:47 08/30/17 Lead 6010C **785** mg/Kg2.1 0.4 2 08/31/17 18:47 08/30/17

Printed 9/1/2017 4:39:28 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708849 **Date Collected:** 08/18/17 10:45 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-1-C06-081817 Basis: Dry

Lab Code: K1708849-005

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 34.2 mg/Kg 4.1 0.8 2 08/31/17 18:49 08/30/17 Lead 6010C 648 mg/Kg2.0 0.4 2 08/31/17 18:49 08/30/17

Printed 9/1/2017 4:39:28 PM Superset Reference:

Analytical Report

Service Request: K1708849

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/18/17 10:48

Sample Matrix: Soil Date Received: 08/22/17 09:50

Sample Name: 401-1-C07-081817 **Basis:** Dry

Lab Code: K1708849-006

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 32.8 mg/Kg 4.2 0.8 2 08/31/17 18:52 08/30/17 Lead 6010C **565** mg/Kg2.1 0.4 2 08/31/17 18:52 08/30/17

Printed 9/1/2017 4:39:28 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708849 **Date Collected:** 08/18/17 10:51 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-1-C08-081817 Basis: Dry

Lab Code: K1708849-007

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 32.0 mg/Kg 4.1 0.8 2 08/31/17 18:54 08/30/17 Lead 6010C 365 mg/Kg2.1 0.4 2 08/31/17 18:54 08/30/17

Printed 9/1/2017 4:39:28 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708849 **Date Collected:** 08/18/17 10:54 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-1-C09-081817 Basis: Dry

Lab Code: K1708849-008

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 28.2 mg/Kg 4.1 0.8 2 08/31/17 18:56 08/30/17 Lead 6010C 405 mg/Kg2.1 0.4 2 08/31/17 18:56 08/30/17

Printed 9/1/2017 4:39:28 PM Superset Reference:

Analytical Report

Service Request: K1708849

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/18/17 10:57

Sample Matrix: Soil Date Received: 08/22/17 09:50

Sample Name: 401-1-C10-081817 **Basis:** Dry

Lab Code: K1708849-009

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 34.3 mg/Kg 4.0 0.8 2 08/31/17 19:06 08/30/17 Lead 6010C 258 mg/Kg2.0 0.4 2 08/31/17 19:06 08/30/17

Printed 9/1/2017 4:39:28 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708849 **Date Collected:** 08/18/17 10:54 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-1-C09-081817-D Basis: Dry

Lab Code: K1708849-010

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 30.2 mg/Kg 4.2 0.8 2 08/31/17 19:08 08/30/17 Lead 6010C 539 mg/Kg2.1 0.4 2 08/31/17 19:08 08/30/17

Printed 9/1/2017 4:39:28 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708849 **Date Collected:** 08/18/17 11:11 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-1-D01-081817 Basis: Dry

Lab Code: K1708849-011

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 26.0 mg/Kg 3.9 0.8 2 08/31/17 19:10 08/30/17 Lead 6010C 369 mg/Kg2.0 0.4 2 08/31/17 19:10 08/30/17

Printed 9/1/2017 4:39:28 PM Superset Reference:

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Analytical Report

Service Request: K1708849

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/18/17 11:15

Sample Matrix: Soil Date Received: 08/22/17 09:50

Sample Name: 401-1-D02-081817 **Basis:** Dry

Lab Code: K1708849-012

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 37.1 mg/Kg 4.1 0.8 2 08/31/17 19:13 08/30/17 Lead 6010C 343 mg/Kg2.1 0.4 2 08/31/17 19:13 08/30/17

Printed 9/1/2017 4:39:28 PM Superset Reference:

Analytical Report

Client: Teck American Incorporated

Service Request: K1708849 **Date Collected:** 08/18/17 11:17 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-1-D03-081817 Basis: Dry

Lab Code: K1708849-013

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q 25.2 Arsenic 6010C mg/Kg 4.1 0.8 2 08/31/17 19:15 08/30/17 Lead 6010C 273 mg/Kg2.0 0.4 2 08/31/17 19:15 08/30/17

Printed 9/1/2017 4:39:28 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708849 **Date Collected:** 08/18/17 11:19 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-1-D04-081817 Basis: Dry

Lab Code: K1708849-014

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	Pate Extracted	Q
Arsenic	6010C	29.6	mg/Kg	3.9	0.8	2	08/31/17 19:17	08/30/17	
Lead	6010C	719	mg/Kg	2.0	0.4	2	08/31/17 19:17	08/30/17	

Printed 9/1/2017 4:39:28 PM Superset Reference:

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Analytical Report

Service Request: K1708849

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/18/17 11:22

Sample Matrix: Soil Date Received: 08/22/17 09:50

Sample Name: 401-1-D05-081817 **Basis:** Dry

Lab Code: K1708849-015

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 28.7 mg/Kg 4.0 0.8 2 08/31/17 19:20 08/30/17 Lead 6010C 492 mg/Kg2.0 0.4 2 08/31/17 19:20 08/30/17

Printed 9/1/2017 4:39:29 PM Superset Reference:

Analytical Report

Service Request: K1708849

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/18/17 11:24

Sample Matrix: Soil Date Received: 08/22/17 09:50

Sample Name: 401-1-D06-081817 **Basis:** Dry

Lab Code: K1708849-016

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 48.1 mg/Kg 3.9 0.8 2 08/31/17 19:22 08/30/17 Lead 6010C 819 mg/Kg2.0 0.4 2 08/31/17 19:22 08/30/17

Printed 9/1/2017 4:39:29 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708849 **Date Collected:** 08/18/17 11:27 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-1-D07-081817 Basis: Dry

Lab Code: K1708849-017

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 29.6 mg/Kg 4.0 0.8 2 08/31/17 19:24 08/30/17 Lead 6010C 381 mg/Kg2.0 0.4 2 08/31/17 19:24 08/30/17

Printed 9/1/2017 4:39:29 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708849 **Date Collected:** 08/18/17 11:30 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-1-D08-081817 Basis: Dry

Lab Code: K1708849-018

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 41.9 mg/Kg 4.2 0.8 2 08/31/17 19:27 08/30/17 Lead 6010C **718** mg/Kg2.1 0.4 2 08/31/17 19:27 08/30/17

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Analytical Report

Service Request: K1708849

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/18/17 11:33

Sample Matrix: Soil Date Received: 08/22/17 09:50

Sample Name: 401-1-D09-081817 **Basis:** Dry

Lab Code: K1708849-019

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 71.6 mg/Kg 4.3 0.9 2 08/31/17 19:36 08/30/17 Lead 6010C 2060 mg/Kg2.1 0.4 2 08/31/17 19:36 08/30/17

Printed 9/1/2017 4:39:29 PM Superset Reference:

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Analytical Report

Service Request: K1708849

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/18/17 11:36

Sample Matrix: Soil Date Received: 08/22/17 09:50

Sample Name: 401-1-D10-081817 **Basis:** Dry

Lab Code: K1708849-020

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 84.9 mg/Kg 4.2 0.8 2 08/31/17 19:38 08/30/17 Lead 6010C 1190 mg/Kg2.1 0.4 2 08/31/17 19:38 08/30/17

Printed 9/1/2017 4:39:29 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated Service Request: K1708849

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 Date Collected: NA

Sample Matrix:

Soil

Date Received: NA

Sample Name:

Method Blank

Basis: Dry

Lab Code: KQ1712441-02

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	ate Extracted	Q
Arsenic	6010C	ND U	mg/Kg	4	0.8	2	08/31/17 18:20	08/30/17	
Lead	6010C	ND U	mg/Kg	2	0.4	2	08/31/17 18:20	08/30/17	

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QA/QC Report

Client: Teck American Incorporated

Project: August 2017 Sampling SAT S

August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Service Request:
Date Collected:

K1708849

Date Received:

08/18/17

Date Analyzed:

08/22/17 08/31/17

Date Extracted:

08/30/17

Duplicate Matrix Spike Summary

Total Metals

Sample Name: 40

401-1-C02-081817

Units: Basis: mg/Kg Dry

Lab Code:

K1708849-001

Analysis Method: Prep Method:

6010C

EPA 3050B

Matrix Spike KQ1712441-03 **Duplicate Matrix Spike**

KQ1712441-04

	Sample		Spike			Spike		% Rec		RPD
Analyte Name	Result	Result	Amount	% Rec	Result	Amount	% Rec	Limits	RPD	Limit
Arsenic	33.3	131	101	97	137	104	100	75-125	5	30
Lead	730	871	101	139 #	944	104	205 #	75-125	8	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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QA/QC Report

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

rt.

Date Analyzed: 08/31/17

Service Request: K1708849

Lab Control Sample Summary Total Metals

> Units:mg/Kg Basis:Dry

Lab Control Sample KQ1712441-01

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Arsenic	6010C	508	500	102	80-120
Lead	6010C	492	500	98	80-120

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ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue Kelso, WA 98626

T:+1 360 577 7222

F:+1 360 636 1068 www.alsglobal.com

September 05, 2017

Analytical Report for Service Request No: K1708850

Dave Enos Teck American Incorporated 501 North Riverpoint Blvd., Suite 300 Spokane, WA 99202

RE: August 2017 Sampling SAT Study / B0095010.0005.00001

Dear Dave.

Enclosed are the results of the sample(s) submitted to our laboratory August 22, 2017 For your reference, these analyses have been assigned our service request number **K1708850**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3330. You may also contact me via email at Jeff.Coronado@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Jeff Coronado Metals Department

Manager



ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue Kelso, WA 98626

T: +1 360 577 7222 F: +1 360 636 1068 www.alsglobal.com

Table of Contents

Acronyms

Qualifiers

State Certifications, Accreditations, And Licenses

Case Narrative

Chain of Custody

Total Solids

Metals

Acronyms

ASTM American Society for Testing and Materials

A2LA American Association for Laboratory Accreditation

CARB California Air Resources Board

CAS Number Chemical Abstract Service registry Number

CFC Chlorofluorocarbon
CFU Colony-Forming Unit

DEC Department of Environmental Conservation

DEQ Department of Environmental Quality

DHS Department of Health Services

DOE Department of Ecology
DOH Department of Health

EPA U. S. Environmental Protection Agency

ELAP Environmental Laboratory Accreditation Program

GC Gas Chromatography

GC/MS Gas Chromatography/Mass Spectrometry

LOD Limit of Detection
LOO Limit of Quantitation

LUFT Leaking Underground Fuel Tank

M Modified

MCL Maximum Contaminant Level is the highest permissible concentration of a substance

allowed in drinking water as established by the USEPA.

MDL Method Detection Limit
MPN Most Probable Number
MRL Method Reporting Limit

NA Not Applicable
NC Not Calculated

NCASI National Council of the Paper Industry for Air and Stream Improvement

ND Not Detected

NIOSH National Institute for Occupational Safety and Health

PQL Practical Quantitation Limit

RCRA Resource Conservation and Recovery Act

SIM Selected Ion Monitoring

TPH Total Petroleum Hydrocarbons

tr Trace level is the concentration of an analyte that is less than the PQL but greater than or

equal to the MDL.

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- \boldsymbol{Q} $\;\;$ See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L14-51
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	_
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
	https://deq.nc.gov/about/divisions/water-resources/water-resources-	
	data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-	
North Carolina DEQ	certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaborator	
Oregon – DEQ (NELAP)	yAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.



Case Narrative

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

ALS ENVIRONMENTAL

Client:Teck American IncorporatedService Request No.:K1708850Project:August 2017 Sampling SAT Study/Date Received:08/22/17

B0095010.0005.00001

Sample Matrix: Soil

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

Sample Receipt

Twenty soil samples were received for analysis at ALS Environmental on 08/22/17. The samples were received in good condition and consistent with the accompanying chain of custody form, except where noted on the cooler receipt and preservation form included in this report.. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Total Metals

No anomalies associated with the analysis of these samples were observed.

Approved by



Chain of Custody

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

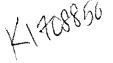


Date 8/20/17
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1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

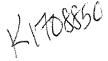


Date 8/20/17
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Comp	any/Address: <u>189 N</u>	orth Ce	dar S	treet	Phone: <u>30</u>	7-203-3510 or 810-588-1488		Co.	050E						
City,	State, Zip: <u>Buffalo, </u>	WY 828	34 FA	4X: <u>30</u>	07-684-596	<u>1</u>		er of	nie 3						
Samp	ler's Signature:							Number	ead/arsenic 3050B/6010						
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	I04				1552		S	1	X						
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	I07				1559		S	1	Х						
	I <i>0</i> 8				1601		S	1	X						
	I09				1603		S	1	Х						
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	Standard (10 days)					Surrogate, as required									j
	rovide FAX Prelimi	nary R	esults	ŀ		II. Report Dup., MS, MSD as required									
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_	Cristy Kessel - Teck	A meri	ran	ŀ		V. EDD									
	N Riverpoint Blvd, Suite														
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1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068



Date 8/20/17
PAGE 14 OF 15

									Analysi	is Request	*
Project Name: <u>Teck American -</u>	UCR SAT	<u>ES</u> Projec	t Number: <u>B0095010.0005.00001</u>		ers	0					
Project Contact: Kady Young Co	ompany: <u>A</u>	rcadis			Containers	/601					
Company/Address: 189 North Ce	dar Street	Phone: <u>30</u>	7-203-3510 or 810-588-1488		Con	ead/arsenic 3050B/6010					
City, State, Zip: Buffalo, WY 828	34 FAX: 3	07-684-596	i 1		r of	ic 3(1		
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TURNAROUND REQUIREMENTS			REPORT REQUIREMENTS		Comr	nents/Spe	cial Instru	etions:			
24 hr48 hr5	day		I. Routine Report: Results, Method B	lank,	Hold	Remainde	er				
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Provide FAX Preliminary Re Requested Report Date:	suits		II. Report Dup., MS, MSD as require III. Data Validation Report (includes								
Invoice Information			raw data)								
P.O. # <u>UCR-ALS-D34-17</u>			IV. CLP Deliverable Report	İ							
Bill to: Cristy Kessel - Teck Americ	an		V. EDD								
501 N Riverpoint Blvd, Suite 300 Spoka	ne, WA 9926										
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1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068



Date <u>8/20/17</u>
PAGE <u>15</u> OF <u>15</u>
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							OA()
						Analysis Request	ed
Project Name: <u>Teck American - UCR SA</u>	TES Project Number: <u>B0095010.0005.00001</u>	ers					
Project Contact: Kady Young Company:	Arcadis	taine	,601				
Company/Address: 189 North Cedar Stree	t Phone: <u>307-203-3510 or 810-588-1488</u>	Containers	lead/arsenic 3050B/6010				
City, State, Zip: Buffalo, WY 82834 FAX:	307-684-5961	r of	ic 3(
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J05	164 s	1	X				
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J09	1651 s	1	Х				
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24 hr 5 day	I. Routine Report: Results, Method Blank,	Hold F	Remainde	r			
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quested Report Date:	III. Data Validation Report (includes						ļ
voice Information	raw data)						
D. # <u>UCR-ALS-D34-17</u>	IV. CLP Deliverable Report						1
l to: Cristy Kessel - Teck American	X V. EDD						
501 N Riverpoint Blvd, Suite 300 Spokane, WA 992							
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nted Name: Watson Metsutnan	1 · · · · · · · · · · · · · · · · · · ·	Printed	Name: _			Printed Nam	le:
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te/Time: 8/21/17 13 00	Date/Time: 8/22/17 0950	Date/Ti	me:			Date/Time:	



Cooler Receipt and Preservation Form

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ent <u>leck Amer</u>	1con.	ų.	Se	vice Request.	K17	18850		
ceived: 8/22/17 (Opened: 8/2	2/17	ву:	✓ Unlos	aded: 8	22/17 By	. Kn	<u>.</u>
Samples were received via?	USPS Fed	EX UPS	DHL	PDX Co	urier H	l and Delivered		
Samples were received in: (circ		Box	Envelope		7	la F	. NA	
Were <u>custody seals</u> on coolers?		(Y) N		how many and		troni.	·····	
If present, were custody seals in	· · · · · · · · · · · · · · · · · · ·	(Y) N		resent, were the	y signed an		Y	N
Raw Corrected Raw Dier Temp Blank	Corrected Com	or ID	neter Co	oler/COC ID NA		Tracking Numl		NA Filed
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Packing material: Inserts B	aggies Bubble	Wrap Gel P	acks (We	Ice Dry Ice	Sleeves	~ 6128		
Were custody papers properly f	**				2.12.00	N/	4 (Y)	N
Were samples received in good	, , ,		en)? <i>Indic</i>	ate in the table	below.	N,		N
If appli	icable, tissue sam	ples were rece	ived: F		lly Thawed	Thawed) John
Were all sample labels complete	•		•			N	^ (Y) Cyrin
Did all sample labels and tags ag		•	•	-	the table o	. •		(N)
Were appropriate bottles/contai						N		N
Were the pH-preserved bottles	•	-		-	ate in the ta	ble below N	₹) Y	N
Were VOA vials received with	aut bandanaaa?		table below					
	out neadspace : 1	indicate in the	iavie veivu			<u>N</u>	× Y	N
Was C12/Res negative?	out neadspace? 1	Indicate in the	idoie beiow			N/ N/	\sim	N N
Was C12/Res negative?	out neadspace?				ATT.		\sim	_
Was C12/Res negative? Sample ID on Bottle	7 401-	Sample ID o	n COC		<u> </u>	Identified by:	A) Y	N
Was C12/Res negative?	7 401-	Sample ID o	n COC		<u>602-I</u> s + fimo	Identified by:) " on Sar	\sim	N
Was C12/Res negative? Sample ID on Bottle	7 401- 17 401	Sample ID o	n COC	17 (Date	<u> </u>	Identified by:)" on Sar s Mafch Co	A) Y	N
Was C12/Res negative? Sample ID on Bottle	7 401- 17 401	Sample ID of 2-602-0 - [-00]	n COC	17 (Date	cog the	Identified by:)" on Sar s Match Co	A) Y	N
Was C12/Res negative? Sample ID on Bottle	7 401- 17 401 Bottle Count Bottle Type	Sample ID o	n coc 0817 - C - 0818	17 Date	<u> </u>	Identified by:)" on Sar s Mafch Co	A) Y	N
Was C12/Res negative? Sample ID on Bottle 10 - 2 - G02 - 08 7 1 1 - 1 - - 08 8	7 401- 17 407	Sample ID of J - GOD - COD	n coc 0817 - C - 0818	17 Date	Cog the	Identified by: " on Sar S Mafch Co Af Way." Reagent Lot	mple ge	artid
Was C12/Res negative? Sample ID on Bottle 10 - 2 - G02 - 08 7 1 1 - 1 - - 08 8	7 401- 17 407	Sample ID of J - GOD - COD	n coc 0817 - C - 0818	17 Date	Cog the	Identified by: " on Sar S Mafch Co Af Way." Reagent Lot	mple ge	artid
Was C12/Res negative? Sample ID on Bottle 10 - 2 - G02 - 08 7 1 1 - 1 - - 08 8	7 401- 17 407	Sample ID of J - GOD - COD	n coc 0817 - C - 0818	17 Date	Cog the	Identified by: " On Sar S Match Co Af Way." Reagent Lot Number	mple ge	artid
Was C12/Res negative? Sample ID on Bottle 10 - 2 - G02 - 08 7 1 1 - 1 - - 08 8	7 401- 17 407	Sample ID of J - GOD - COD	n coc 0817 - C - 0818	17 Date	Cog the	Identified by: " On Sar S Match Co Af Way." Reagent Lot Number	mple ge	artid
Was C12/Res negative? Sample ID on Bottle 10 - 2 - G02 - 08 7 1 1 - 1 - - 08 8	7 401- 17 407	Sample ID of J - GOD - COD	n coc 0817 - C - 0818	17 Date	Cog the	Identified by: " On Sar S Match Co Af Way." Reagent Lot Number	mple ge	artid
Sample ID on Bottle	7 401- 17 401 Bottle Count Bottle Type	Sample ID of 2 - GO2 - CO1 Out of Head-Temp space	n coc 08 7 - 0	17 Data Col-	Volume added	Identified by: " on Sar S Match Co Af Way. " Reagent Lot Number	mple ge	artid
Sample ID on Bottle	7 401- 17 401 Bottle Count Bottle Type tions: V Q	Sample ID of 2-602 (CO) Out of Head-Temp space	n coc 08 7 - 0 - 08 8 Broke pH	17 Data Col- Reagent	Volume added	Identified by: " on Sar S Mafch (Co Af Way." Reagent Lot Number	mple ge	artid
Sample ID on Bottle	7 401- 17 401 Bottle Count Bottle Type	Sample ID of 2-602 (CO) Out of Head-Temp space	n coc 08 7 - 0 - 08 8 Broke pH	17 Data Col- Reagent	Volume added	Identified by: " on Sar S Mafch (Co Af Way." Reagent Lot Number	mple ge	artid
Sample ID on Bottle	7 401- 17 401 Bottle Count Bottle Type tions: V Q	Sample ID of 2-602 (CO) Out of Head-Temp space	n coc 08 7 - 0 - 08 8 Broke pH	17 Data Col- Reagent	Volume added	Identified by: " On Sar S Match (Co Af Way." Reagent Lot Number Wasn't	mple ge	artid
Sample ID on Bottle	7 401- 17 401 Bottle Count Bottle Type tions: V Q	Sample ID of 2-602 (CO) Out of Head-Temp space	Broke pH	17 Data Col- Reagent	Volume added	Identified by: " on Sar S Mafch (Co Af Way." Reagent Lot Number	mple ge	artid

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Total Solids

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Client: Teck American Incorporated

Service Request: K1708850 **Date Collected:** 08/18/17**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Received:** 08/22/17

Sample Matrix:

Analysis Method:

Soil

160.3 Modified Units: Percent

Prep Method: None Basis: As Received

Solids, Total

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
401-1-H09-081817	K1708850-001	94.0	-	-	1	08/26/17 10:27	
401-1-H10-081817	K1708850-002	95.6	-	-	1	08/26/17 10:27	
401-1-I01-081817	K1708850-003	96.5	-	-	1	08/26/17 10:27	
401-1-I02-081817	K1708850-004	95.4	-	-	1	08/26/17 10:27	
401-1-I03-081817	K1708850-005	94.8	-	-	1	08/26/17 10:27	
401-1-I04-081817	K1708850-006	93.9	-	-	1	08/26/17 10:27	
401-1-I05-081817	K1708850-007	97.2	-	-	1	08/26/17 10:27	
401-1-I06-081817	K1708850-008	94.7	-	-	1	08/26/17 10:27	
401-1-I07-081817	K1708850-009	96.7	-	-	1	08/26/17 10:27	
401-1-I08-081817	K1708850-010	95.2	-	-	1	08/26/17 10:27	
401-1-I09-081817	K1708850-011	94.1	-	-	1	08/26/17 10:27	
401-1-I10-081817	K1708850-012	96.4	-	-	1	08/26/17 10:27	
401-1-I05-081817-D	K1708850-013	96.7	-	-	1	08/26/17 10:27	
401-1-J01-081817	K1708850-014	97.0	-	-	1	08/26/17 10:27	
401-1-J02-081817	K1708850-015	96.9	-	-	1	08/26/17 10:27	
401-1-J03-081817	K1708850-016	96.1	-	-	1	08/26/17 10:27	
401-1-J04-081817	K1708850-017	93.3	-	-	1	08/26/17 10:27	
401-1-J05-081817	K1708850-018	96.4	-	-	1	08/26/17 10:27	
401-1-J06-081817	K1708850-019	96.7	-	-	1	08/26/17 10:27	
401-1-J07-081817	K1708850-020	95.9	-	-	1	08/26/17 10:27	

QA/QC Report

Client: Teck American Incorporated

Project August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Analysis Method:

160.3 Modified

Prep Method: None

Service Request: K1708850 Date Collected: 08/18/17

Date Received: 08/22/17

Units:Percent

Basis: As Received

Replicate Sample Summary Inorganic Parameters

			Sample	Duplicate			RPD	Date
Sample Name:	Lab Code:	MRL	Result	Result	Average	RPD	Limit	Analyzed
401-1-H09-081817	K1708850-001DUP	-	94.0	95.2	94.6	1	20	08/26/17
401-1-I09-081817	K1708850-011DUP	_	94.1	95.6	94.9	2	20	08/26/17

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Printed 09/05/17 1:22:05 PM Superset Reference:17-0000434651 rev 00



Metals

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Client: Teck American Incorporated

Service Request: K1708850 **Date Collected:** 08/18/17 15:25 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-1-H09-081817 Basis: Dry

Lab Code: K1708850-001

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 41.1 mg/Kg 4.2 2.1 2 08/31/17 19:26 08/30/17 Lead 6010C 1350 mg/Kg2.1 0.7 2 08/31/17 19:26 08/30/17

Printed 9/1/2017 4:41:10 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708850 **Date Collected:** 08/18/17 15:28 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-1-H10-081817 Basis: Dry

Lab Code: K1708850-002

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 36.2 mg/Kg 4.2 2.1 2 08/31/17 19:36 08/30/17 Lead 6010C 1190 mg/Kg2.1 0.7 2 08/31/17 19:36 08/30/17

Printed 9/1/2017 4:41:10 PM Superset Reference:

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Analytical Report

Service Request: K1708850

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/18/17 15:46

Sample Matrix: Soil Date Received: 08/22/17 09:50

Sample Name: 401-1-I01-081817 **Basis:** Dry

Lab Code: K1708850-003

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 23.7 mg/Kg 3.9 1.9 2 08/31/17 19:38 08/30/17 Lead 6010C 486 mg/Kg1.9 0.7 2 08/31/17 19:38 08/30/17

Printed 9/1/2017 4:41:10 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708850 **Date Collected:** 08/18/17 15:48 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-1-I02-081817 Basis: Dry

Lab Code: K1708850-004

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 29.8 mg/Kg 4.2 2.1 2 08/31/17 19:40 08/30/17 Lead 6010C **767** mg/Kg2.1 0.7 2 08/31/17 19:40 08/30/17

Printed 9/1/2017 4:41:10 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708850 **Date Collected:** 08/18/17 15:50 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-1-I03-081817 Basis: Dry

Lab Code: K1708850-005

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 29.8 mg/Kg 4.1 2.0 2 08/31/17 19:42 08/30/17 Lead 6010C 684 mg/Kg2.0 0.7 2 08/31/17 19:42 08/30/17

Printed 9/1/2017 4:41:10 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708850 **Date Collected:** 08/18/17 15:52 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-1-I04-081817 Basis: Dry

Lab Code: K1708850-006

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 33.0 mg/Kg 4.0 2.0 2 08/31/17 19:44 08/30/17 Lead 6010C 656 mg/Kg2.0 0.7 2 08/31/17 19:44 08/30/17

Printed 9/1/2017 4:41:10 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708850 **Date Collected:** 08/18/17 15:54 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-1-I05-081817 Basis: Dry

Lab Code: K1708850-007

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 37.2 mg/Kg 4.1 2.0 2 08/31/17 19:53 08/30/17 Lead 6010C 708 mg/Kg2.0 0.7 2 08/31/17 19:53 08/30/17

Printed 9/1/2017 4:41:10 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708850 **Date Collected:** 08/18/17 15:56 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-1-I06-081817 Basis: Dry

Lab Code: K1708850-008

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 37.0 mg/Kg 4.1 2.0 2 08/31/17 19:55 08/30/17 Lead 6010C 831 mg/Kg2.0 0.7 2 08/31/17 19:55 08/30/17

Printed 9/1/2017 4:41:10 PM Superset Reference:

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Analytical Report

Service Request: K1708850

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/18/17 15:59

Sample Matrix: Soil Date Received: 08/22/17 09:50

Sample Name: 401-1-I07-081817 **Basis:** Dry

Lab Code: K1708850-009

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 42.1 mg/Kg 3.9 1.9 2 08/31/17 19:57 08/30/17 Lead 6010C **797** mg/Kg1.9 0.7 2 08/31/17 19:57 08/30/17

Printed 9/1/2017 4:41:10 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708850 **Date Collected:** 08/18/17 16:01 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Date Received: 08/22/17 09:50 **Sample Matrix:** Soil

Sample Name: 401-1-I08-081817 Basis: Dry

Lab Code: K1708850-010

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	Pate Extracted	Q
Arsenic	6010C	67.3	mg/Kg	4.1	2.0	2	08/31/17 19:59	08/30/17	
Lead	6010C	527	mg/Kg	2.0	0.7	2	08/31/17 19:59	08/30/17	

Printed 9/1/2017 4:41:11 PM Superset Reference:

Analytical Report

Client: Teck American Incorporated

Service Request: K1708850 **Date Collected:** 08/18/17 16:03 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-1-I09-081817 Basis: Dry

Lab Code: K1708850-011

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 54.3 mg/Kg 4.1 2.1 2 08/31/17 20:01 08/30/17 Lead 6010C 1430 mg/Kg2.1 0.7 2 08/31/17 20:01 08/30/17

Printed 9/1/2017 4:41:11 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708850 **Date Collected:** 08/18/17 16:07 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-1-I10-081817 Basis: Dry

Lab Code: K1708850-012

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 38.9 mg/Kg 3.9 2.0 2 08/31/17 20:03 08/30/17 Lead 6010C 684 mg/Kg2.0 0.7 2 08/31/17 20:03 08/30/17

Printed 9/1/2017 4:41:11 PM Superset Reference:

Analytical Report

Service Request: K1708850

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/18/17 15:54

Sample Matrix: Soil Date Received: 08/22/17 09:50

Sample Name: 401-1-I05-081817-D **Basis:** Dry

Lab Code: K1708850-013

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 35.3 mg/Kg 4.0 2.0 2 08/31/17 20:06 08/30/17 Lead 6010C 632 mg/Kg2.0 0.7 2 08/31/17 20:06 08/30/17

Printed 9/1/2017 4:41:11 PM Superset Reference:

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Analytical Report

Service Request: K1708850

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/18/17 16:29

Sample Matrix: Soil Date Received: 08/22/17 09:50

Sample Name: 401-1-J01-081817 **Basis:** Dry

Lab Code: K1708850-014

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 24.9 mg/Kg 4.0 2.0 2 08/31/17 20:08 08/30/17 Lead 6010C 480 mg/Kg2.0 0.7 2 08/31/17 20:08 08/30/17

Printed 9/1/2017 4:41:11 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708850 **Date Collected:** 08/18/17 16:32 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-1-J02-081817 Basis: Dry

Lab Code: K1708850-015

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 26.3 mg/Kg 4.1 2.0 2 08/31/17 20:10 08/30/17 Lead 6010C **470** mg/Kg2.0 0.7 2 08/31/17 20:10 08/30/17

Printed 9/1/2017 4:41:11 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708850 **Date Collected:** 08/18/17 16:35 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-1-J03-081817 Basis: Dry

Lab Code: K1708850-016

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 21.5 mg/Kg 4.1 2.0 2 08/31/17 20:12 08/30/17 Lead 6010C **300** mg/Kg2.0 0.7 2 08/31/17 20:12 08/30/17

Printed 9/1/2017 4:41:11 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708850 **Date Collected:** 08/18/17 16:38 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-1-J04-081817 Basis: Dry

Lab Code: K1708850-017

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 39.4 mg/Kg 4.2 2.1 2 08/31/17 20:20 08/30/17 Lead 6010C 805 mg/Kg2.1 0.7 2 08/31/17 20:20 08/30/17

Printed 9/1/2017 4:41:11 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708850 **Date Collected:** 08/18/17 16:41 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-1-J05-081817 Basis: Dry

Lab Code: K1708850-018

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 37.4 mg/Kg 3.8 1.9 2 08/31/17 20:23 08/30/17 Lead 6010C **591** mg/Kg1.9 0.7 2 08/31/17 20:23 08/30/17

Printed 9/1/2017 4:41:11 PM Superset Reference:

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Analytical Report

Service Request: K1708850

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/18/17 16:43

Sample Matrix: Soil Date Received: 08/22/17 09:50

Sample Name: 401-1-J06-081817 **Basis:** Dry

Lab Code: K1708850-019

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 18.8 mg/Kg 3.8 1.9 2 08/31/17 20:25 08/30/17 Lead 6010C **266** mg/Kg1.9 0.7 2 08/31/17 20:25 08/30/17

Printed 9/1/2017 4:41:11 PM Superset Reference:

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Analytical Report

Service Request: K1708850

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/18/17 16:46

Sample Matrix: Soil Date Received: 08/22/17 09:50

Sample Name: 401-1-J07-081817 **Basis:** Dry

Lab Code: K1708850-020

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 23.2 mg/Kg 4.0 2.0 2 08/31/17 20:27 08/30/17 Lead 6010C 419 mg/Kg2.0 0.7 2 08/31/17 20:27 08/30/17

Printed 9/1/2017 4:41:11 PM Superset Reference:

Analytical Report

Client: Teck American Incorporated Service Request: K1708850

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 Date Collected: NA

Sample Matrix:

Date Received: NA

Soil

Basis: Dry

Sample Name: Lab Code:

Method Blank KQ1712442-02

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	Pate Extracted	Q
Arsenic	6010C	ND U	mg/Kg	4	2.0	2	08/31/17 19:15	08/30/17	
Lead	6010C	ND U	mg/Kg	2	0.7	2	08/31/17 19:15	08/30/17	

Printed 9/1/2017 4:41:11 PM Superset Reference:

QA/QC Report

Client: Teck American Incorporated **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Service Request: Date Collected:

K1708850

Sample Matrix: Soil

Date Received:

08/18/17

Date Analyzed:

08/22/17 08/31/17

Date Extracted:

08/30/17

Duplicate Matrix Spike Summary

Total Metals

Sample Name:

401-1-H09-081817

Units: Basis:

mg/Kg Dry

Lab Code: **Analysis Method:**

Prep Method:

K1708850-001

6010C

EPA 3050B

Matrix Spike

Duplicate Matrix Spike

KQ1712442-04

KQ1712442-03

	Sample		Spike			Spike		% Rec		RPD
Analyte Name	Result	Result	Amount	% Rec	Result	Amount	% Rec	Limits	RPD	Limit
Arsenic	41.1	149	106	102	147	102	104	75-125	1	30
Lead	1350	1960	106	576#	1880	102	512#	75-125	5	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Printed 9/1/2017 4:41:11 PM Superset Reference:

QA/QC Report

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Analyzed:** 08/31/17

Sample Matrix: Soil

Lab Control Sample Summary Total Metals

> Units:mg/Kg Basis:Dry

Service Request: K1708850

Lab Control Sample KQ1712442-01

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Arsenic	6010C	493	500	99	80-120
Lead	6010C	519	500	104	80-120

Printed 9/1/2017 4:41:11 PM Superset Reference:

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ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue Kelso, WA 98626

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F:+1 360 636 1068 www.alsglobal.com

September 05, 2017

Analytical Report for Service Request No: K1708851

Dave Enos Teck American Incorporated 501 North Riverpoint Blvd., Suite 300 Spokane, WA 99202

RE: August 2017 Sampling SAT Study / B0095010.0005.00001

Dear Dave.

Enclosed are the results of the sample(s) submitted to our laboratory August 22, 2017 For your reference, these analyses have been assigned our service request number **K1708851**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3330. You may also contact me via email at Jeff.Coronado@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Jeff Coronado

Metals Department

Manager



ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue Kelso, WA 98626

T: +1 360 577 7222 F: +1 360 636 1068 www.alsglobal.com

Table of Contents

Acronyms

Qualifiers

State Certifications, Accreditations, And Licenses

Case Narrative

Chain of Custody

Total Solids

Metals

Acronyms

ASTM American Society for Testing and Materials

A2LA American Association for Laboratory Accreditation

CARB California Air Resources Board

CAS Number Chemical Abstract Service registry Number

CFC Chlorofluorocarbon
CFU Colony-Forming Unit

DEC Department of Environmental Conservation

DEQ Department of Environmental Quality

DHS Department of Health Services

DOE Department of Ecology
DOH Department of Health

EPA U. S. Environmental Protection Agency

ELAP Environmental Laboratory Accreditation Program

GC Gas Chromatography

GC/MS Gas Chromatography/Mass Spectrometry

LOD Limit of Detection
LOQ Limit of Quantitation

LUFT Leaking Underground Fuel Tank

M Modified

MCL Maximum Contaminant Level is the highest permissible concentration of a substance

allowed in drinking water as established by the USEPA.

MDL Method Detection Limit
MPN Most Probable Number
MRL Method Reporting Limit

NA Not Applicable
NC Not Calculated

NCASI National Council of the Paper Industry for Air and Stream Improvement

ND Not Detected

NIOSH National Institute for Occupational Safety and Health

PQL Practical Quantitation Limit

RCRA Resource Conservation and Recovery Act

SIM Selected Ion Monitoring

TPH Total Petroleum Hydrocarbons

tr Trace level is the concentration of an analyte that is less than the PQL but greater than or

equal to the MDL.

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L14-51
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	_
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
	https://deq.nc.gov/about/divisions/water-resources/water-resources-	
	data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-	
North Carolina DEQ	certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaborator	
Oregon – DEQ (NELAP)	yAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.



Case Narrative

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

ALS ENVIRONMENTAL

Client: Teck American Incorporated Service Request No.: K1708851

Project: August 2017 Sampling SAT Study/ Date Received: 08/22/17

B0095010.0005.00001

Sample Matrix: Soil

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

Sample Receipt

Twenty soil samples were received for analysis at ALS Environmental on 08/22/17. The samples were received in good condition and consistent with the accompanying chain of custody form, except where noted on the cooler receipt and preservation form included in this report.. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Total Metals

No anomalies associated with the analysis of these samples were observed.

Approved by



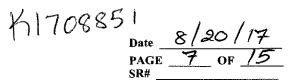
Chain of Custody

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ALS Environmental-Kelso

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(360) 577-7222 FAX (360) 636-1068

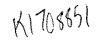


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Date 8/20/17
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Company/Address: 189 North Ce	dar Street	Phone: <u>30</u>	7-203-3510 or 810-588-1488			050B						
City, State, Zip: Buffalo, WY 828	34 FAX: <u>3</u>	07-684-596	<u>51</u>		er of	iead/arsenic 3050B/6010						
Sampler's Signature:		Number	/ars									
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501 N Riverpoint Blvd, Suite 300 Spokane, WA 9926												
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K1708851

Date 8/20/17
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Proje	ct Contact: <u>Kady Y</u>	oung (Compan	y: Arcadis			Containers	lead/arsenic 3050B/6010	İ				
Comp	any/Address: 189	North Co	edar Str	<u>eet</u> Phone	: <u>307-203-3510 or 810-588-1488</u>		S	50B		1 1	ļ		
City.	State, Zip: <u>Buffalo.</u>	WY 828	R34 FAX	ζ: 307-684	-5961		5	ic 30			i		
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Samp	ler's Signature:		Dat				Į	ad/a]			DELL NVC
1101	Sample I.D. - - F0 -08	1817				Matrix S	1						REMARKS
401	F02	1017	01101	130			1	X					
_	F03		-	131		S	1	X					
		-	\longrightarrow			S	1	X					
	F04	ļ	-	13/	·	S	1	X					
	F05			131		S	1	X					
	F0 6			132		S	1	X					
	F07			/32		S	1	X					
	Fog			134	6	S	1	х					
. A.	F69			134	9	S	1	X					
. ₹	F10 V	1	V	/35	2	S	1	Х					
	ROUND REQUIRI				REPORT REQUIREMENTS		Comments/Special Instructions:						
	1 hr 48 hr	5	day	 	I. Routine Report: Results, Method I	Blank,	Hold I	Remainde	r				
	tandard (10 days) rovide FAX Prelim	inary R <i>a</i>	enite		Surrogate, as required II. Report Dup., MS, MSD as require	ad .							
	ed Report Date:	mai y ice	Suits	<u> </u>	III. Data Validation Report (includes								
nvoice l	Information				raw data)								
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_	risty Kessel - Teck			X	V. EDD	ŀ							ì
	Riverpoint Blvd, Suite	300 Spoka	ne, WA 9										
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ate/Tim	e: 8/21/17	13: 0	<u> </u>	Date/Ti	ne: 8/22/17 0950	. 1	Date/Time: Date/Time:						



PC SC

Cooler Receipt and Preservation Form
ent Teck America. Service Request K17 08851
ceived: 8/22/17 Opened: 8/22/17 By: KM Unloaded: 8/22/17 By: KM.
Samples were received via? USPS Fed Ex UPS DHL PDX Courier Hand Delivered
Samples were received in: (circle) Cooler Box Envelope Other NA
Were custody seals on coolers? NA (Y) N If yes, how many and where 2 1 TONT.
If present, were custody seals intact? Y N If present, were they signed and dated? Y N
Raw Corrected Raw Corrected Corr. Thermometer Coeler/COCID Tracking Number oler Temp Blank Temp Blank Factor ID NA NA Filed
5.2 5.4 13.1 13.3 to.2 325 8745 6738 5575
3 7.9 11.5 11.6 +0.1 373 8745 6738 5586
7 72 7,2 7,4 70.2 379 8105 9112 1296
1.3 19 14.0 1-0.1 328 8745 6738 5597
Packing material: Inserts Baggies (Bubble Wrap) Gel Packs (Wet Ice Pry Ice Sleeves
Were custody papers properly filled out (ink, signed, etc.)? NA Y N
Were samples received in good condition (temperature, unbroken)? Indicate in the table below. If applicable, tissue samples were received: Frozen Partially Thawed Thawed
Were all sample labels complete (i.e analysis, preservation, etc.)?
Did all sample labels and tags agree with custody papers? Indicate major discrepancies in the table on page 2. NA Y (N)
Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
Were the pH-preserved bottles (see SMO GEN SOP) received at the appropriate pH? Indicate in the table below NA Y N
Were VOA vials received without headspace? Indicate in the table below. NA Y N Was C12/Res negative?
THE CITY AND REGISTRES.
Sample ID on Bottle Sample ID on COC Identified by:
101-2-GO2-0x1717 401-2-GO2-0817-0 "GO2-D" on Sample carlid
to1-1- C1-081817 401-1-C01-081817 Dates + fines match Col. Material
Sample ID Bottle Count Out of Head- Sample ID Bottle Type Temp space Broke pH Reagent added Number Initials Time
s, Discrepancies, & Resolutions: In all of the Cooleies, there wasn't
senough ice and what was there was melted
, ,
Page of

Page 12 of 39



Total Solids

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Client: Teck American Incorporated

Service Request: K1708851 **Date Collected:** 08/18/17**Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix:

Analysis Method:

Soil

160.3 Modified

Prep Method: None Units: Percent Basis: As Received

Date Received: 08/22/17

Solids, Total

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
401-1-E01-081817	K1708851-001	96.5	-	-	1	08/25/17 16:15	
401-1-E02-081817	K1708851-002	95.4	-	-	1	08/25/17 16:15	
401-1-E03-081817	K1708851-003	94.3	-	-	1	08/25/17 16:15	
401-1-E04-081817	K1708851-004	97.5	-	-	1	08/25/17 16:15	
401-1-E05-081817	K1708851-005	97.6	-	-	1	08/25/17 16:15	
401-1-E06-081817	K1708851-006	96.8	-	-	1	08/25/17 16:15	
401-1-E07-081817	K1708851-007	97.1	-	-	1	08/25/17 16:15	
401-1-E08-081817	K1708851-008	93.8	-	-	1	08/25/17 16:15	
401-1-E09-081817	K1708851-009	95.3	-	-	1	08/25/17 16:15	
401-1-E10-081817	K1708851-010	94.8	-	-	1	08/25/17 16:15	
401-1-E02-081817-D	K1708851-011	94.1	-	-	1	08/25/17 16:15	
401-1-F01-081817	K1708851-012	95.1	-	-	1	08/25/17 16:15	
401-1-F02-081817	K1708851-013	96.9	-	-	1	08/25/17 16:15	
401-1-F03-081817	K1708851-014	93.6	-	-	1	08/25/17 16:15	
401-1-F04-081817	K1708851-015	95.4	-	-	1	08/25/17 16:15	
401-1-F05-081817	K1708851-016	96.6	-	-	1	08/25/17 16:15	
401-1-F06-081817	K1708851-017	95.4	-	-	1	08/25/17 16:15	
401-1-F07-081817	K1708851-018	96.3	-	_	1	08/25/17 16:15	
401-1-F08-081817	K1708851-019	95.0	-	_	1	08/25/17 16:15	
401-1-F09-081817	K1708851-020	96.5	-	-	1	08/25/17 16:15	

QA/QC Report

Client: Teck American Incorporated

Project August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Analysis Method:

160.3 Modified Units:Percent

Service Request:K1708851

Date Collected:08/18/17 **Date Received:**08/22/17

Prep Method: None Basis: As Received

Replicate Sample Summary Inorganic Parameters

~			Sample	Duplicate			RPD	Date
Sample Name:	Lab Code:	MRL	Result	Result	Average	RPD	Limit	Analyzed
401-1-E01-081817	K1708851-001DUP	-	96.5	96.7	96.6	<1	20	08/25/17
401-1-E02-081817-D	K1708851-011DUP	_	94.1	95.0	94.6	<1	20	08/25/17

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Printed 09/05/17 1:23:01 PM Superset Reference:17-0000434660 rev 00



Metals

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Client: Teck American Incorporated

Service Request: K1708851 **Date Collected:** 08/18/17 11:54 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-1-E01-081817 Basis: Dry

Lab Code: K1708851-001

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 23.1 mg/Kg 4.0 0.8 2 08/31/17 19:45 08/30/17 Lead 6010C 305 mg/Kg2.0 0.4 2 08/31/17 19:45 08/30/17

Printed 9/1/2017 4:42:21 PM Superset Reference:

Analytical Report

Service Request: K1708851

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/18/17 11:57

Sample Matrix: Soil Date Received: 08/22/17 09:50

Sample Name: 401-1-E02-081817 **Basis:** Dry

Lab Code: K1708851-002

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 22.1 mg/Kg 4.0 0.8 2 08/31/17 19:56 08/30/17 Lead 6010C 241 mg/Kg2.0 0.4 2 08/31/17 19:56 08/30/17

Printed 9/1/2017 4:42:21 PM Superset Reference:

Analytical Report

Service Request: K1708851

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/18/17 12:00

Sample Matrix: Soil Date Received: 08/22/17 09:50

Sample Name: 401-1-E03-081817 **Basis:** Dry

Lab Code: K1708851-003

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 21.8 mg/Kg 4.0 0.8 2 08/31/17 20:06 08/30/17 Lead 6010C 822 mg/Kg2.0 0.4 2 08/31/17 20:06 08/30/17

Printed 9/1/2017 4:42:22 PM Superset Reference:

Analytical Report

Client: Teck American Incorporated

Service Request: K1708851 **Date Collected:** 08/18/17 12:03 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-1-E04-081817 Basis: Dry

Lab Code: K1708851-004

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q 22,9 Arsenic 6010C mg/Kg 4.0 0.8 2 08/31/17 20:08 08/30/17 Lead 6010C 313 mg/Kg2.0 0.4 2 08/31/17 20:08 08/30/17

Printed 9/1/2017 4:42:22 PM Superset Reference:

Analytical Report

Service Request: K1708851

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/18/17 12:06

Sample Matrix: Soil Date Received: 08/22/17 09:50

Sample Name: 401-1-E05-081817 **Basis:** Dry

Lab Code: K1708851-005

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 32.2 mg/Kg 4.0 0.8 2 08/31/17 20:10 08/30/17 Lead 6010C 416 mg/Kg2.0 0.4 2 08/31/17 20:10 08/30/17

Printed 9/1/2017 4:42:22 PM Superset Reference:

Analytical Report

Service Request: K1708851

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/18/17 12:08

Sample Matrix: Soil Date Received: 08/22/17 09:50

Sample Name: 401-1-E06-081817 **Basis:** Dry

Lab Code: K1708851-006

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 39.2 mg/Kg 4.0 0.8 2 08/31/17 20:12 08/30/17 Lead 6010C 423 mg/Kg2.0 0.4 2 08/31/17 20:12 08/30/17

Printed 9/1/2017 4:42:22 PM Superset Reference:

Analytical Report

Service Request: K1708851

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/18/17 12:10

Sample Matrix: Soil Date Received: 08/22/17 09:50

Sample Name: 401-1-E07-081817 **Basis:** Dry

Lab Code: K1708851-007

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 27.0 mg/Kg 4.1 0.8 2 08/31/17 20:15 08/30/17 Lead 6010C 348 mg/Kg2.0 0.4 2 08/31/17 20:15 08/30/17

Analytical Report

Service Request: K1708851

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/18/17 12:13

Sample Matrix: Soil Date Received: 08/22/17 09:50

Sample Name: 401-1-E08-081817 **Basis:** Dry

Lab Code: K1708851-008

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 36.8 mg/Kg 4.2 0.8 2 08/31/17 20:17 08/30/17 Lead 6010C **756** mg/Kg2.1 0.4 2 08/31/17 20:17 08/30/17

Analytical Report

Service Request: K1708851

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/18/17 12:16

Sample Matrix: Soil Date Received: 08/22/17 09:50

Sample Name: 401-1-E09-081817 **Basis:** Dry

Lab Code: K1708851-009

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 53.8 mg/Kg 4.0 0.8 2 08/31/17 20:20 08/30/17 Lead 6010C 416 mg/Kg2.0 0.4 2 08/31/17 20:20 08/30/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708851 **Date Collected:** 08/18/17 12:19 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-1-E10-081817 Basis: Dry

Lab Code: K1708851-010

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 82.3 mg/Kg 4.0 0.8 2 08/31/17 20:22 08/30/17 Lead 6010C 634 mg/Kg2.0 0.4 2 08/31/17 20:22 08/30/17

Analytical Report

Service Request: K1708851

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/18/17 11:57

Sample Matrix: Soil Date Received: 08/22/17 09:50

Sample Name: 401-1-E02-081817-D **Basis:** Dry

Lab Code: K1708851-011

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 20.8 mg/Kg 4.2 0.8 2 08/31/17 20:24 08/30/17 Lead 6010C 235 mg/Kg2.1 0.4 2 08/31/17 20:24 08/30/17

Analytical Report

Service Request: K1708851

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/18/17 13:06

Sample Matrix: Soil Date Received: 08/22/17 09:50

Sample Name: 401-1-F01-081817 **Basis:** Dry

Lab Code: K1708851-012

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 40.1 mg/Kg 4.1 0.8 2 08/31/17 20:27 08/30/17 Lead 6010C 671 mg/Kg2.1 0.4 2 08/31/17 20:27 08/30/17

Analytical Report

Service Request: K1708851

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/18/17 13:08

Sample Matrix: Soil Date Received: 08/22/17 09:50

Sample Name: 401-1-F02-081817 **Basis:** Dry

Lab Code: K1708851-013

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 23.7 mg/Kg 3.8 0.8 2 08/31/17 20:36 08/30/17 Lead 6010C 279 mg/Kg1.9 0.4 2 08/31/17 20:36 08/30/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708851 **Date Collected:** 08/18/17 13:11 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-1-F03-081817 Basis: Dry

Lab Code: K1708851-014

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 29.5 mg/Kg 4.2 0.8 2 08/31/17 20:38 08/30/17 Lead 6010C 1020 mg/Kg2.1 0.4 2 08/31/17 20:38 08/30/17

Printed 9/1/2017 4:42:22 PM Superset Reference:

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Analytical Report

Service Request: K1708851

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/18/17 13:14

Sample Matrix: Soil Date Received: 08/22/17 09:50

Sample Name: 401-1-F04-081817 **Basis:** Dry

Lab Code: K1708851-015

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 31.3 mg/Kg 4.1 0.8 2 08/31/17 20:40 08/30/17 Lead 6010C 282 mg/Kg2.1 0.4 2 08/31/17 20:40 08/30/17

Analytical Report

Service Request: K1708851

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/18/17 13:17

Sample Matrix: Soil Date Received: 08/22/17 09:50

Sample Name: 401-1-F05-081817 **Basis:** Dry

Lab Code: K1708851-016

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 27.0 mg/Kg 4.0 0.8 2 08/31/17 20:43 08/30/17 Lead 6010C 238 mg/Kg2.0 0.4 2 08/31/17 20:43 08/30/17

Analytical Report

Service Request: K1708851

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/18/17 13:20

Sample Matrix: Soil Date Received: 08/22/17 09:50

Sample Name: 401-1-F06-081817 **Basis:** Dry

Lab Code: K1708851-017

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 43.5 mg/Kg 4.2 0.8 2 08/31/17 20:45 08/30/17 Lead 6010C 354 mg/Kg2.1 0.4 2 08/31/17 20:45 08/30/17

Printed 9/1/2017 4:42:23 PM Superset Reference:

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Analytical Report

Service Request: K1708851

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/18/17 13:23

Sample Matrix: Soil Date Received: 08/22/17 09:50

Sample Name: 401-1-F07-081817 **Basis:** Dry

Lab Code: K1708851-018

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 38.8 mg/Kg 4.0 0.8 2 08/31/17 20:47 08/30/17 Lead 6010C **595** mg/Kg2.0 0.4 2 08/31/17 20:47 08/30/17

Analytical Report

Service Request: K1708851

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/18/17 13:46

Sample Matrix: Soil Date Received: 08/22/17 09:50

Sample Name: 401-1-F08-081817 **Basis:** Dry

Lab Code: K1708851-019

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 32.6 mg/Kg 4.1 0.8 2 08/31/17 20:50 08/30/17 Lead 6010C 377 mg/Kg2.1 0.4 2 08/31/17 20:50 08/30/17

Printed 9/1/2017 4:42:23 PM Superset Reference:

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Analytical Report

Service Request: K1708851

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/18/17 13:49

Sample Matrix: Soil Date Received: 08/22/17 09:50

Sample Name: 401-1-F09-081817 **Basis:** Dry

Lab Code: K1708851-020

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 38.4 mg/Kg 3.8 0.8 2 08/31/17 20:52 08/30/17 Lead 6010C **578** mg/Kg1.9 0.4 2 08/31/17 20:52 08/30/17

Printed 9/1/2017 4:42:23 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated Service Request: K1708851

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 Date Collected: NA

Sample Matrix:

Soil

Date Received: NA

Sample Name:

Method Blank

Basis: Dry

Lab Code: KQ1712444-02

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	ate Extracted	Q
Arsenic	6010C	ND U	mg/Kg	4	0.8	2	08/31/17 19:40	08/30/17	
Lead	6010C	ND U	mg/Kg	2	0.4	2	08/31/17 19:40	08/30/17	

QA/QC Report

Client: Teck American Incorporated **Project:**

August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Service Request: Date Collected:

K1708851

Date Received:

08/18/17 08/22/17

Date Analyzed:

08/31/17

Date Extracted:

08/30/17

Duplicate Matrix Spike Summary

Total Metals

Sample Name:

401-1-E01-081817

Units: Basis: mg/Kg Dry

Lab Code:

K1708851-001

Analysis Method: Prep Method:

6010C

EPA 3050B

Matrix Spike

Duplicate Matrix Spike

			KQ171	2444-03		KQ1712	444-04			
	Sample	Spike				Spike		% Rec		RPD
Analyte Name	Result	Result	Amount	% Rec	Result	Amount	% Rec	Limits	RPD	Limit
Arsenic	23.1	119	98.1	98	119	96.9	99	75-125	<1	30
Lead	305	389	98.1	86	391	96.9	89	75-125	<1	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

QA/QC Report

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Service Request: K1708851 Date Analyzed: 08/31/17

Lab Control Sample Summary Total Metals

Units:mg/Kg
Basis:Dry

Lab Control Sample

KQ1712444-01

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Arsenic	6010C	505	500	101	80-120
Lead	6010C	476	500	95	80-120

Printed 9/1/2017 4:42:23 PM Superset Reference:

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ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue Kelso, WA 98626

T:+1 360 577 7222

F:+1 360 636 1068 www.alsglobal.com

September 07, 2017

Analytical Report for Service Request No: K1708852

Dave Enos Teck American Incorporated 501 North Riverpoint Blvd., Suite 300 Spokane, WA 99202

RE: August 2017 Sampling SAT Study / B0095010.0005.00001

Dear Dave,

Enclosed are the results of the sample(s) submitted to our laboratory August 22, 2017 For your reference, these analyses have been assigned our service request number **K1708852**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3330. You may also contact me via email at Jeff.Coronado@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Jeff Coronado Metals Department Manager



ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue Kelso, WA 98626

T: +1 360 577 7222 F: +1 360 636 1068 www.alsglobal.com

Table of Contents

Acronyms

Qualifiers

State Certifications, Accreditations, And Licenses

Case Narrative

Chain of Custody

Total Solids

Metals

Acronyms

ASTM American Society for Testing and Materials

A2LA American Association for Laboratory Accreditation

CARB California Air Resources Board

CAS Number Chemical Abstract Service registry Number

CFC Chlorofluorocarbon
CFU Colony-Forming Unit

DEC Department of Environmental Conservation

DEQ Department of Environmental Quality

DHS Department of Health Services

DOE Department of Ecology
DOH Department of Health

EPA U. S. Environmental Protection Agency

ELAP Environmental Laboratory Accreditation Program

GC Gas Chromatography

GC/MS Gas Chromatography/Mass Spectrometry

LOD Limit of Detection
LOO Limit of Quantitation

LUFT Leaking Underground Fuel Tank

M Modified

MCL Maximum Contaminant Level is the highest permissible concentration of a substance

allowed in drinking water as established by the USEPA.

MDL Method Detection Limit
MPN Most Probable Number
MRL Method Reporting Limit

NA Not Applicable
NC Not Calculated

NCASI National Council of the Paper Industry for Air and Stream Improvement

ND Not Detected

NIOSH National Institute for Occupational Safety and Health

PQL Practical Quantitation Limit

RCRA Resource Conservation and Recovery Act

SIM Selected Ion Monitoring

TPH Total Petroleum Hydrocarbons

tr Trace level is the concentration of an analyte that is less than the PQL but greater than or

equal to the MDL.

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
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- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L14-51
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	_
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
	https://deq.nc.gov/about/divisions/water-resources/water-resources-	
	data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-	
North Carolina DEQ	certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaborator	
Oregon – DEQ (NELAP)	yAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.



Case Narrative

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

ALS ENVIRONMENTAL

Client: Teck American Incorporated Service Request No.: K1708852

Project: August 2017 Sampling SAT Study/ Date Received: 08/22/17

B0095010.0005.00001

Sample Matrix: Soil

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

Sample Receipt

Three soil samples were received for analysis at ALS Environmental on 08/22/17. The samples were received in good condition and consistent with the accompanying chain of custody form, except where noted on the cooler receipt and preservation form included in this report.. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Total Metals

No anomalies associated with the analysis of these samples were observed.

Approved by



Chain of Custody

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

ALS Environmental-Kelso

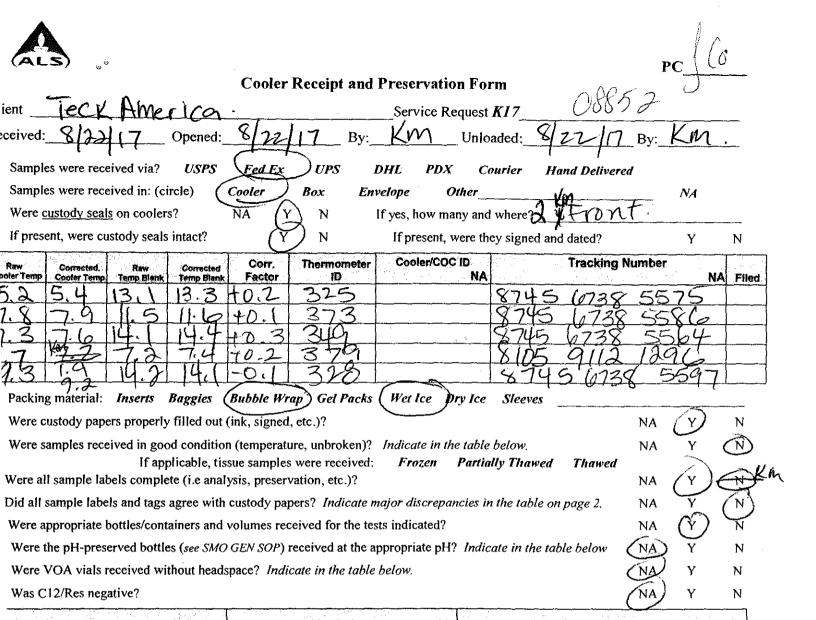
1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068



Date 8/20/17
PAGE 15 OF 15

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	J03 "				1635		S	1	X						
	J04				1638		S	1	X						
	J05				1641		S	1	X						
	J06				1643		1	X							
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Sample ID on COC

Page 10

Sample ID on Bottle

25/16

Page___of___

Identified by:

Dates + fimos match



Total Solids

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Client: Teck American Incorporated

Service Request: K1708852 **Date Collected:** 08/18/17 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Analysis Method: 160.3 Modified Units: Percent

Prep Method: None Basis: As Received

Date Received: 08/22/17

Solids, Total

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
401-1-J08-081817	K1708852-001	94.7	=	-	1	08/25/17 16:15	
401-1-J09-081817	K1708852-002	94.9	-	-	1	08/25/17 16:15	
401-1-J10-081817	K1708852-003	96.4	-	-	1	08/25/17 16:15	

QA/QC Report

Client: Teck American Incorporated

Project August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix:

Analysis Method:

Prep Method:

Soil

None

Service Request: K1708852 Date Collected: 08/18/17

Date Received: 08/18/17

160.3 Modified Units:Percent

Basis: As Received

Replicate Sample Summary Inorganic Parameters

			Sample	Duplicate			RPD	Date
Sample Name:	Lab Code:	MRL	Result	Result	Average	RPD	Limit	Analyzed
401-1-J08-081817	K1708852-001DUP	-	94.7	94.9	94.8	<1	20	08/25/17

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Printed 09/07/17 11:43:46 AM Superset Reference:17-0000434661 rev 00



Metals

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Service Request: K1708852

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/18/17 16:49

Sample Matrix: Soil Date Received: 08/22/17 09:50

Sample Name: 401-1-J08-081817 **Basis:** Dry

Lab Code: K1708852-001

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 60.8 mg/Kg 4.2 2.1 2 09/05/17 09:03 08/30/17 Lead 6010C 947 mg/Kg2.1 0.7 2 09/05/17 09:03 08/30/17

Printed 9/6/2017 2:38:45 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708852 **Date Collected:** 08/18/17 16:51 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-1-J09-081817 Basis: Dry

Lab Code: K1708852-002

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 44.6 mg/Kg 3.9 2.0 2 09/05/17 09:13 08/30/17 Lead 6010C **721** mg/Kg2.0 0.7 2 09/05/17 09:13 08/30/17

Printed 9/6/2017 2:38:45 PM Superset Reference:

Analytical Report

Client: Teck American Incorporated

Service Request: K1708852 **Date Collected:** 08/18/17 16:54 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/22/17 09:50

Sample Name: 401-1-J10-081817 Basis: Dry

Lab Code: K1708852-003

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 32.8 mg/Kg 4.0 2.0 2 09/05/17 09:15 08/30/17 Lead 6010C 486 mg/Kg2.0 0.7 2 09/05/17 09:15 08/30/17

Printed 9/6/2017 2:38:46 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708852

Project: August 2017 Sampling SAT Study/B0095010.0005.00001

Date Collected: NA

Sample Matrix: Soil

~ ..

Date Received: NA

Sample Name:

Method Blank

Basis: Dry

Lab Code: KQ1712446-02

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	ate Extracted	Q
Arsenic	6010C	ND U	mg/Kg	4	2.0	2	09/05/17 08:59	08/30/17	
Lead	6010C	ND U	mg/Kg	2	0.7	2	09/05/17 08:59	08/30/17	

Printed 9/6/2017 2:38:46 PM Superset Reference:

QA/QC Report

Client: Teck American Incorporated

August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Service Request: Date Collected:

K1708852

Date Received:

08/18/17 08/22/17

Date Received: Date Analyzed:

09/5/17

Date Extracted:

08/30/17

Duplicate Matrix Spike Summary

Total Metals

Sample Name:

401-1-J08-081817

Units:

Basis:

mg/Kg Dry

Lab Code:

Project:

K1708852-001

Analysis Method:

6010C

Prep Method:

EPA 3050B

Matrix Spike

Duplicate Matrix Spike

KQ1712446-04

KQ1712446-03

	Sample		Spike			Spike		% Rec		RPD
Analyte Name	Result	Result	Amount	% Rec	Result	Amount	% Rec	Limits	RPD	Limit
Arsenic	60.8	160	104	95	164	104	99	75-125	2	30
Lead	947	1030	104	81 #	1010	104	65 #	75-125	2	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Printed 9/6/2017 2:38:46 PM Superset Reference:

QA/QC Report

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Analyzed:** 09/05/17

Sample Matrix: Soil

Lab Control Sample Summary Total Metals

> Units:mg/Kg Basis:Dry

Service Request: K1708852

Lab Control Sample

KQ1712446-01

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Arsenic	6010C	492	500	98	80-120
Lead	6010C	504	500	101	80-120



ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue Kelso, WA 98626

T:+1 360 577 7222

F:+1 360 636 1068 www.alsglobal.com

September 07, 2017

Analytical Report for Service Request No: K1708945

Dave Enos Teck American Incorporated 501 North Riverpoint Blvd., Suite 300 Spokane, WA 99202

RE: August 2017 Sampling SAT Study / B0095010.0005.00001

Dear Dave.

Enclosed are the results of the sample(s) submitted to our laboratory August 24, 2017 For your reference, these analyses have been assigned our service request number **K1708945**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3330. You may also contact me via email at Jeff.Coronado@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Jeff Coronado Metals Department Manager



ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue Kelso, WA 98626

T: +1 360 577 7222 F: +1 360 636 1068 www.alsglobal.com

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Total Solids

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A2LA American Association for Laboratory Accreditation

CARB California Air Resources Board

CAS Number Chemical Abstract Service registry Number

CFC Chlorofluorocarbon
CFU Colony-Forming Unit

DEC Department of Environmental Conservation

DEQ Department of Environmental Quality

DHS Department of Health Services

DOE Department of Ecology
DOH Department of Health

EPA U. S. Environmental Protection Agency

ELAP Environmental Laboratory Accreditation Program

GC Gas Chromatography

GC/MS Gas Chromatography/Mass Spectrometry

LOD Limit of Detection
LOQ Limit of Quantitation

LUFT Leaking Underground Fuel Tank

M Modified

MCL Maximum Contaminant Level is the highest permissible concentration of a substance

allowed in drinking water as established by the USEPA.

MDL Method Detection Limit
MPN Most Probable Number
MRL Method Reporting Limit

NA Not Applicable
NC Not Calculated

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ND Not Detected

NIOSH National Institute for Occupational Safety and Health

PQL Practical Quantitation Limit

RCRA Resource Conservation and Recovery Act

SIM Selected Ion Monitoring

TPH Total Petroleum Hydrocarbons

tr Trace level is the concentration of an analyte that is less than the PQL but greater than or

equal to the MDL.

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
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- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
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- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
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- + The correlation coefficient for the MSA is less than 0.995.
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Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L14-51
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	_
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
	https://deq.nc.gov/about/divisions/water-resources/water-resources-	
	data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-	
North Carolina DEQ	certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaborator	
Oregon – DEQ (NELAP)	yAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.



Case Narrative

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

ALS ENVIRONMENTAL

Client: Teck American Incorporated Service Request No.: K1708945

Project: August 2017 Sampling SAT Study/ Date Received: 08/24/17

B0095010.0005.00001

Sample Matrix: Soil

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

Sample Receipt

Twenty soil samples were received for analysis at ALS Environmental on 08/24/17. The samples were received in good condition and consistent with the accompanying chain of custody form, except where noted on the cooler receipt and preservation form included in this report.. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Total Metals

No anomalies associated with the analysis of these samples were observed.

Approved by



Chain of Custody

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

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	A07				1159		S	1	X						
	A08				1202		S	1	X						
	AOA				1203		S	1	A X	. 4					
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	CR-ALS-D34-17					IV. CLP Deliverable Report									
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ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

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J	Sample I.D.			ate	Time	Time LAB ID		Ž	lead,					REMARKS	
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	B09				1221		S	1	X						
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	e Information					raw data)									
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Cooler Receipt and Preservation Form

Jeff
PCCOvagado

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ceived: Aug. ZUIT	Opened: 🥏	1/21	4	By:	ca		_ Unloa		`	By:	\sim
Samples were received via? Samples were received in: (cii) Were custody seals on coolers	,		<i>UPS</i> Box N	Env	OHL velope If ves. 1		Other	urier F	land Delivered	<i>N</i> .	4
If present, were custody seals		©	N	•	-		-	y signed ar		S	N
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Packing material: Inserts 1	Baggies (Bubble	e Wrap	Gel I	Packs	Wet	ce D	ry Ice	Sleeves			
Were custody papers properly							•		1	VA CY	$\sqrt{\sqrt{N}}$
/ere all sample labels complet id all sample labels and tags a Vere appropriate bottles/conta Were the pH-preserved bottles Were VOA vials received with Was C12/Res negative? Sample ID on Bottle	gree with custody iners and volume (see SMO GEN Se	eservation y papers s receive OP) rece Indicate	on, etc. ? Indicated for the leaves of the	.)? cate me the test the ap table l	s indic propria	s <i>crepai</i> ated?	ncies in t	te in the ta	n page 2. N	NA (Y) NA	М (М М М М
Sample ID	Bottle Count Bottle Type	Out of	Head- space	Broke	Hq	Re	agent	Volume added	Reagent Lot Number	Initials	Time
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Total Solids

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Client: Teck American Incorporated

Service Request: K1708945 **Date Collected:** 08/19/17 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Analysis Method:

160.3 Modified

Prep Method: None **Date Received:** 08/24/17 Units: Percent Basis: As Received

Solids, Total

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
258-2-A01-081917	K1708945-001	97.3	-	-	1	08/29/17 09:57	
258-2-A02-081917	K1708945-002	97.0	-	-	1	08/29/17 09:57	
258-2-A03-081917	K1708945-003	96.7	-	-	1	08/29/17 09:57	
258-2-A04-081917	K1708945-004	96.1	-	-	1	08/29/17 09:57	
258-2-A05-081917	K1708945-005	96.0	-	-	1	08/29/17 09:57	
258-2-A06-081917	K1708945-006	97.5	-	=	1	08/29/17 09:57	
258-2-A07-081917	K1708945-007	97.5	-	-	1	08/29/17 09:57	
258-2-A08-081917	K1708945-008	95.9	-	-	1	08/29/17 09:57	
258-2-A09-081917	K1708945-009	95.3	-	-	1	08/29/17 09:57	
258-2-A10-081917	K1708945-010	96.4	-	-	1	08/29/17 09:57	
258-2-B01-081917	K1708945-011	97.9	-	-	1	08/29/17 09:57	
258-2-B02-081917	K1708945-012	96.1	-	-	1	08/29/17 09:57	
258-2-B03-081917	K1708945-013	97.4	-	-	1	08/29/17 09:57	
258-2-B04-081917	K1708945-014	96.9	-	-	1	08/29/17 09:57	
258-2-B05-081917	K1708945-015	96.3	-	-	1	08/29/17 09:57	
258-2-B06-081917	K1708945-016	95.4	-	-	1	08/29/17 09:57	
258-2-B07-081917	K1708945-017	96.9	-	-	1	08/29/17 09:57	
258-2-B08-081917	K1708945-018	98.0	-	-	1	08/29/17 09:57	
258-2-B09-081917	K1708945-019	98.0	-	-	1	08/29/17 09:57	
258-2-B10-081917	K1708945-020	98.3	-	-	1	08/29/17 09:57	

QA/QC Report

Client: Teck American Incorporated

Project August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Analysis Method:

160.3 Modified

Prep Method: None

Service Request: K1708945

Date Collected: 08/19/17

Date Received: 08/24/17

Units:Percent

Basis: As Received

Replicate Sample Summary Inorganic Parameters

			Sample	Duplicate			RPD	Date
Sample Name:	Lab Code:	MRL	Result	Result	Average	RPD	Limit	Analyzed
258-2-A01-081917	K1708945-001DUP	-	97.3	97.2	97.3	<1	20	08/29/17
258-2-B01-081917	K1708945-011DUP	-	97.9	97.8	97.9	<1	20	08/29/17

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Printed 09/07/17 11:41:01 AM Superset Reference:17-0000434995 rev 00



Metals

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Service Request: K1708945

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/19/17 11:45

Sample Matrix: Soil Date Received: 08/24/17 10:30

Sample Name: 258-2-A01-081917 **Basis:** Dry

Lab Code: K1708945-001

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 12.6 mg/Kg 4.1 2.1 2 09/05/17 09:31 08/31/17 Lead 6010C 193 mg/Kg2.1 0.7 2 09/05/17 09:31 08/31/17

Analytical Report

Service Request: K1708945

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/19/17 11:47

Sample Matrix: Soil Date Received: 08/24/17 10:30

Sample Name: 258-2-A02-081917 **Basis:** Dry

Lab Code: K1708945-002

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 14.8 mg/Kg 4.1 2.1 2 09/05/17 09:41 08/31/17 Lead 6010C 208 mg/Kg2.1 0.7 2 09/05/17 09:41 08/31/17

Printed 9/6/2017 2:49:37 PM Superset Reference:

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Analytical Report

Service Request: K1708945

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/19/17 11:49

Sample Matrix: Soil Date Received: 08/24/17 10:30

Sample Name: 258-2-A03-081917 **Basis:** Dry

Lab Code: K1708945-003

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 29.1 mg/Kg 4.1 2.0 2 09/05/17 09:43 08/31/17 Lead 6010C **718** mg/Kg2.0 0.7 2 09/05/17 09:43 08/31/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708945 **Date Collected:** 08/19/17 11:51 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:30

Sample Name: 258-2-A04-081917 Basis: Dry

Lab Code: K1708945-004

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 13.4 mg/Kg 4.1 2.0 2 09/05/17 09:45 08/31/17 Lead 6010C 214 mg/Kg2.0 0.7 2 09/05/17 09:45 08/31/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708945 **Date Collected:** 08/19/17 11:55 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:30

Sample Name: 258-2-A05-081917 Basis: Dry

Lab Code: K1708945-005

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 15.6 mg/Kg 4.0 2.0 2 09/05/17 09:47 08/31/17 Lead 6010C 249 mg/Kg2.0 0.7 2 09/05/17 09:47 08/31/17

Printed 9/6/2017 2:49:38 PM Superset Reference:

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Analytical Report

Service Request: K1708945

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/19/17 11:57

Sample Matrix: Soil Date Received: 08/24/17 10:30

Sample Name: 258-2-A06-081917 **Basis:** Dry

Lab Code: K1708945-006

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 7.9 mg/Kg 3.9 2.0 2 09/05/17 09:56 08/31/17 Lead 6010C 109 mg/Kg2.0 0.7 2 09/05/17 09:56 08/31/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708945 **Date Collected:** 08/19/17 11:59 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:30

Sample Name: 258-2-A07-081917 Basis: Dry

Lab Code: K1708945-007

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 12.7 mg/Kg 4.0 2.0 2 09/05/17 09:58 08/31/17 Lead 6010C 138 mg/Kg2.0 0.7 2 09/05/17 09:58 08/31/17

Analytical Report

Service Request: K1708945

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/19/17 12:02

Sample Matrix: Soil Date Received: 08/24/17 10:30

Sample Name: 258-2-A08-081917 **Basis:** Dry

Lab Code: K1708945-008

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 21.3 mg/Kg 4.1 2.0 2 09/05/17 10:00 08/31/17 Lead 6010C 303 mg/Kg2.0 0.7 2 09/05/17 10:00 08/31/17

Printed 9/6/2017 2:49:38 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708945 **Date Collected:** 08/19/17 12:03 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:30

Sample Name: 258-2-A09-081917 Basis: Dry

Lab Code: K1708945-009

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q 15.2 Arsenic 6010C mg/Kg 3.9 1.9 2 09/05/17 10:02 08/31/17 Lead 6010C 240 mg/Kg1.9 0.7 2 09/05/17 10:02 08/31/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708945 **Date Collected:** 08/19/17 12:05 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Date Received: 08/24/17 10:30 **Sample Matrix:** Soil

Sample Name: 258-2-A10-081917 Basis: Dry

Lab Code: K1708945-010

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	Q	
Arsenic	6010C	25.3	mg/Kg	4.0	2.0	2	09/05/17 10:04	08/31/17	
Lead	6010C	450	mg/Kg	2.0	0.7	2	09/05/17 10:04	08/31/17	

Analytical Report

Client: Teck American Incorporated

Service Request: K1708945 **Date Collected:** 08/19/17 12:08 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:30

Sample Name: 258-2-B01-081917 Basis: Dry

Lab Code: K1708945-011

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 8.5 mg/Kg 4.0 2.0 2 09/05/17 10:06 08/31/17 Lead 6010C 132 mg/Kg2.0 0.7 2 09/05/17 10:06 08/31/17

Analytical Report

Service Request: K1708945

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/19/17 12:10

Sample Matrix: Soil Date Received: 08/24/17 10:30

Sample Name: 258-2-B02-081917 **Basis:** Dry

Lab Code: K1708945-012

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 13.2 mg/Kg 4.1 2.1 2 09/05/17 10:09 08/31/17 Lead 6010C 308 mg/Kg2.1 0.7 2 09/05/17 10:09 08/31/17

Printed 9/6/2017 2:49:38 PM Superset Reference:

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Analytical Report

Service Request: K1708945

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/19/17 12:12

Sample Matrix: Soil Date Received: 08/24/17 10:30

Sample Name: 258-2-B03-081917 **Basis:** Dry

Lab Code: K1708945-013

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 14.4 mg/Kg 3.9 2.0 2 09/05/17 10:11 08/31/17 Lead 6010C 242 mg/Kg2.0 0.7 2 09/05/17 10:11 08/31/17

Printed 9/6/2017 2:49:38 PM Superset Reference:

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Analytical Report

Service Request: K1708945

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/19/17 12:13

Sample Matrix: Soil Date Received: 08/24/17 10:30

Sample Name: 258-2-B04-081917 **Basis:** Dry

Lab Code: K1708945-014

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 11.7 mg/Kg 3.8 1.9 2 09/05/17 10:13 08/31/17 Lead 6010C 227 mg/Kg1.9 0.7 2 09/05/17 10:13 08/31/17

Analytical Report

Service Request: K1708945

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/19/17 12:15

Sample Matrix: Soil Date Received: 08/24/17 10:30

Sample Name: 258-2-B05-081917 **Basis:** Dry

Lab Code: K1708945-015

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 15.6 mg/Kg 4.0 2.0 2 09/05/17 10:15 08/31/17 Lead 6010C **296** mg/Kg2.0 0.7 2 09/05/17 10:15 08/31/17

Printed 9/6/2017 2:49:38 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708945 **Date Collected:** 08/19/17 12:17 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:30

Sample Name: 258-2-B06-081917 Basis: Dry

Lab Code: K1708945-016

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q 15.5 Arsenic 6010C mg/Kg 4.1 2.1 2 09/05/17 10:23 08/31/17 Lead 6010C 262 mg/Kg2.1 0.7 2 09/05/17 10:23 08/31/17

Printed 9/6/2017 2:49:38 PM Superset Reference:

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Analytical Report

Service Request: K1708945

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/19/17 12:18

Sample Matrix: Soil Date Received: 08/24/17 10:30

Sample Name: 258-2-B07-081917 **Basis:** Dry

Lab Code: K1708945-017

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 17.2 mg/Kg 4.0 2.0 2 09/05/17 10:26 08/31/17 Lead 6010C 282 mg/Kg2.0 0.7 2 09/05/17 10:26 08/31/17

Printed 9/6/2017 2:49:38 PM Superset Reference:

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Analytical Report

Service Request: K1708945

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/19/17 12:20

Sample Matrix: Soil Date Received: 08/24/17 10:30

Sample Name: 258-2-B08-081917 **Basis:** Dry

Lab Code: K1708945-018

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 11.9 mg/Kg 4.0 2.0 2 09/05/17 10:28 08/31/17 Lead 6010C 121 mg/Kg2.0 0.7 2 09/05/17 10:28 08/31/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708945 **Date Collected:** 08/19/17 12:21 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:30

Sample Name: 258-2-B09-081917 Basis: Dry

Lab Code: K1708945-019

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 15.6 mg/Kg 3.8 1.9 2 09/05/17 10:30 08/31/17 Lead 6010C **291** mg/Kg1.9 0.7 2 09/05/17 10:30 08/31/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708945 **Date Collected:** 08/19/17 12:23 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:30

Sample Name: 258-2-B10-081917 Basis: Dry

Lab Code: K1708945-020

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 14.9 mg/Kg 4.0 2.0 2 09/05/17 10:32 08/31/17 Lead 6010C 350 mg/Kg2.0 0.7 2 09/05/17 10:32 08/31/17

Printed 9/6/2017 2:49:39 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708945

Project: August 2017 Sampling SAT Study/B0095010.0005.00001

Date Collected: NA

Sample Matrix: So

Soil

Date Received: NA

Sample Name:

Method Blank

Basis: Dry

Lab Code: KQ1712490-02

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	ate Extracted	Q
Arsenic	6010C	ND U	mg/Kg	4	2.0	2	09/05/17 09:18	08/31/17	
Lead	6010C	ND U	mg/Kg	2	0.7	2	09/05/17 09:18	08/31/17	

QA/QC Report

Client: Teck American Incorporated

Project: August 2017 Sampling SAT S

August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Service Request: Date Collected: K1708945

Data Dagaiyadı

08/19/17

Date Received: Date Analyzed: 08/24/17 09/5/17

Date Extracted:

08/31/17

Duplicate Matrix Spike Summary

Total Metals

Sample Name:

258-2-A01-081917

Units:

Basis:

mg/Kg Dry

Lab Code:

K1708945-001

Analysis Method: Prep Method:

6010C

EPA 3050B

Matrix Spike

Duplicate Matrix Spike

KQ1712490-04

KQ1712490-03

	Sample		Spike			Spike		% Rec		RPD
Analyte Name	Result	Result	Amount	% Rec	Result	Amount	% Rec	Limits	RPD	Limit
Arsenic	12.6	105	97.8	94	111	103	96	75-125	6	30
Lead	193	285	97.8	94	296	103	100	75-125	4	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

QA/QC Report

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001

Analytical Method

6010C

6010C

Sample Matrix: Soil

Analyte Name

Arsenic

Lead

Date Analyzed: 09/05/17

% Rec

96

102

Service Request: K1708945

Lab Control Sample Summary Total Metals

Units:mg/Kg
Basis:Dry

% Rec Limits

80-120

80-120

Lab Control Sample

KQ1712490-01

Result

481

510

Spike Amount

500

500

Printed 9/6/2017 2:49:39 PM Superset Reference:

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ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue Kelso, WA 98626

T:+1 360 577 7222

F: +1 360 636 1068 www.alsglobal.com

September 07, 2017

Analytical Report for Service Request No: K1708951

Dave Enos Teck American Incorporated 501 North Riverpoint Blvd., Suite 300 Spokane, WA 99202

RE: August 2017 Sampling SAT Study / B0095010.0005.00001

Dear Dave.

Enclosed are the results of the sample(s) submitted to our laboratory August 24, 2017 For your reference, these analyses have been assigned our service request number **K1708951**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3330. You may also contact me via email at Jeff.Coronado@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Jeff Coronado

Metals Department

Manager



ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue Kelso, WA 98626

T: +1 360 577 7222 F: +1 360 636 1068 www.alsglobal.com

Table of Contents

Acronyms

Qualifiers

State Certifications, Accreditations, And Licenses

Case Narrative

Chain of Custody

Total Solids

Metals

Acronyms

ASTM American Society for Testing and Materials

A2LA American Association for Laboratory Accreditation

CARB California Air Resources Board

CAS Number Chemical Abstract Service registry Number

CFC Chlorofluorocarbon
CFU Colony-Forming Unit

DEC Department of Environmental Conservation

DEQ Department of Environmental Quality

DHS Department of Health Services

DOE Department of Ecology
DOH Department of Health

EPA U. S. Environmental Protection Agency

ELAP Environmental Laboratory Accreditation Program

GC Gas Chromatography

GC/MS Gas Chromatography/Mass Spectrometry

LOD Limit of Detection
LOQ Limit of Quantitation

LUFT Leaking Underground Fuel Tank

M Modified

MCL Maximum Contaminant Level is the highest permissible concentration of a substance

allowed in drinking water as established by the USEPA.

MDL Method Detection Limit
MPN Most Probable Number
MRL Method Reporting Limit

NA Not Applicable
NC Not Calculated

NCASI National Council of the Paper Industry for Air and Stream Improvement

ND Not Detected

NIOSH National Institute for Occupational Safety and Health

PQL Practical Quantitation Limit

RCRA Resource Conservation and Recovery Act

SIM Selected Ion Monitoring

TPH Total Petroleum Hydrocarbons

tr Trace level is the concentration of an analyte that is less than the PQL but greater than or

equal to the MDL.

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L14-51
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	_
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
	https://deq.nc.gov/about/divisions/water-resources/water-resources-	
	data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-	
North Carolina DEQ	certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaborator	
Oregon – DEQ (NELAP)	yAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.



Case Narrative

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

ALS ENVIRONMENTAL

Client: Teck American Incorporated Service Request No.: K1708951

Project: August 2017 Sampling SAT Study/ Date Received: 08/24/17

B0095010.0005.00001

Sample Matrix: Soil

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

Sample Receipt

Twenty soil samples were received for analysis at ALS Environmental on 08/24/17. The samples were received in good condition and consistent with the accompanying chain of custody form, except where noted on the cooler receipt and preservation form included in this report.. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Total Metals

No anomalies associated with the analysis of these samples were observed.

Approved by



Chain of Custody

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ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

Date 8/20/17
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ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

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ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

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Did all sample labels and tags	agree with	custody	papers	? Indi	cate m	ajor dis	crepancies ir	the table o	n page 2.	NA TY) N
Were appropriate bottles/conta	ainers and	volumes	receiv	ed for t	he test	s indica	ited?			NA KY	N (
Were the pH-preserved bottle	s (see SMO	GEN SO	P) rece	eived at	the ap	propria	te pH? India	ate in the to	ible below 🛮 🗗	AY A	N
Were VOA vials received wit	•		•		-				Á	NA Y	N
Was C12/Res negative?		•							R	NA) Y	N
	: 1				_ 						
Sample ID on Bottle			Sam	ple ID o	n COC				Identified by:		***
				·						·	
	Bottle (Count	Out of	Lland	Γ	 		Volume	Reagent Lot	T .	
Sample ID	Bottle			space	Broke	Hq	Reagent	added	Number	Initials	Time
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, Discrepancies, & Resolu	utions: H		Gu	nfl.	25	kί	ce a	of Of	temp.		
, Discrepancies, & Resolu	utions: A		Gu	nfl.	25	lil	in a	& Of	temp.		
, Discrepancies, & Resolu	utions: <u>P</u>	LC	Gu		2-5	W	coe a	A Of	temp.		

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Total Solids

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Client: Teck American Incorporated

Service Request: K1708951 **Date Collected:** 08/19/17 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Analysis Method: 160.3 Modified Units: Percent **Prep Method:** Basis: As Received None

Solids, Total

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
258-2-C01-081917	K1708951-001	97.0	-	-	1	08/29/17 09:57	
258-2-C02-081917	K1708951-002	97.3	-	-	1	08/29/17 09:57	
258-2-C03-081917	K1708951-003	98.2	-	-	1	08/29/17 09:57	
258-2-C04-081917	K1708951-004	95.7	-	-	1	08/29/17 09:57	
258-2-C05-081917	K1708951-005	94.1	-	-	1	08/29/17 09:57	
258-2-C06-081917	K1708951-006	97.1	-	-	1	08/29/17 09:57	
258-2-C07-081917	K1708951-007	97.3	-	-	1	08/29/17 09:57	
258-2-C08-081917	K1708951-008	98.3	-	-	1	08/29/17 09:57	
258-2-C09-081917	K1708951-009	97.3	-	-	1	08/29/17 09:57	
258-2-C10-081917	K1708951-010	97.7	-	-	1	08/29/17 09:57	
258-2-C06-081917-D	K1708951-011	97.1	-	-	1	08/29/17 09:57	
258-2-D01-081917	K1708951-012	96.6	-	-	1	08/29/17 09:57	
258-2-D02-081917	K1708951-013	94.5	-	-	1	08/29/17 09:57	
258-2-D03-081917	K1708951-014	96.9	-	-	1	08/29/17 09:57	
258-2-D04-081917	K1708951-015	97.3	-	-	1	08/29/17 09:57	
258-2-D05-081917	K1708951-016	95.7	-	-	1	08/29/17 09:57	
258-2-D06-081917	K1708951-017	96.8	-	-	1	08/29/17 09:57	
258-2-D07-081917	K1708951-018	96.2	-	-	1	08/29/17 09:57	
258-2-D08-081917	K1708951-019	95.5	-	-	1	08/29/17 09:57	
258-2-D09-081917	K1708951-020	96.6	-	-	1	08/29/17 09:57	

Date Received: 08/24/17

QA/QC Report

Client: Teck American Incorporated

Project August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Analysis Method:

160.3 Modified

Prep Method: None

Service Request:K1708951 Date Collected:08/19/17

Date Received: 08/24/17

Units:Percent
Basis: As Received

Replicate Sample Summary Inorganic Parameters

			Sample	Duplicate			RPD	Date
Sample Name:	Lab Code:	MRL	Result	Result	Average	RPD	Limit	Analyzed
258-2-C01-081917	K1708951-001DUP	-	97.0	96.7	96.9	<1	20	08/29/17
258-2-C06-081917-D	K1708951-011DUP	-	97.1	97.1	97.1	<1	20	08/29/17

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Printed 09/07/17 11:41:47 AM Superset Reference:17-0000434994 rev 00



Metals

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Service Request: K1708951

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/19/17 13:05

Sample Matrix: Soil Date Received: 08/24/17 10:30

Sample Name: 258-2-C01-081917 **Basis:** Dry

Lab Code: K1708951-001

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 10.4 mg/Kg 4.0 2.0 2 09/05/17 10:38 08/31/17 Lead 6010C 294 mg/Kg2.0 0.7 2 09/05/17 10:38 08/31/17

Printed 9/6/2017 2:51:30 PM Superset Reference:

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Analytical Report

Service Request: K1708951

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/19/17 13:07

Sample Matrix: Soil Date Received: 08/24/17 10:30

Sample Name: 258-2-C02-081917 **Basis:** Dry

Lab Code: K1708951-002

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 10.4 mg/Kg 4.1 2.0 2 09/05/17 10:58 08/31/17 Lead 6010C 145 mg/Kg2.0 0.7 2 09/05/17 10:58 08/31/17

Printed 9/6/2017 2:51:30 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708951 **Date Collected:** 08/19/17 13:09 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Date Received: 08/24/17 10:30

Sample Name: 258-2-C03-081917 Basis: Dry

Lab Code: K1708951-003

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	Q	
Arsenic	6010C	7.5	mg/Kg	3.9	1.9	2	09/05/17 11:00	08/31/17	
Lead	6010C	213	mg/Kg	1.9	0.7	2	09/05/17 11:00	08/31/17	

Printed 9/6/2017 2:51:30 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708951 **Date Collected:** 08/19/17 13:11 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:30

Sample Name: 258-2-C04-081917 Basis: Dry

Lab Code: K1708951-004

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 21.8 mg/Kg 3.9 2.0 2 09/05/17 11:02 08/31/17 Lead 6010C **560** mg/Kg2.0 0.7 2 09/05/17 11:02 08/31/17

Analytical Report

Service Request: K1708951

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/19/17 13:13

Sample Matrix: Soil Date Received: 08/24/17 10:30

Sample Name: 258-2-C05-081917 **Basis:** Dry

Lab Code: K1708951-005

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 16.0 mg/Kg 4.1 2.1 2 09/05/17 11:04 08/31/17 Lead 6010C 351 mg/Kg2.1 0.7 2 09/05/17 11:04 08/31/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708951 **Date Collected:** 08/19/17 13:15 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:30

Sample Name: 258-2-C06-081917 Basis: Dry

Lab Code: K1708951-006

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 14.5 mg/Kg 4.0 2.0 2 09/05/17 11:06 08/31/17 Lead 6010C 227 mg/Kg2.0 0.7 2 09/05/17 11:06 08/31/17

Analytical Report

Service Request: K1708951

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/19/17 13:17

Sample Matrix: Soil Date Received: 08/24/17 10:30

Sample Name: 258-2-C07-081917 **Basis:** Dry

Lab Code: K1708951-007

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 10.9 mg/Kg 3.8 1.9 2 09/05/17 11:08 08/31/17 Lead 6010C 112 mg/Kg1.9 0.7 2 09/05/17 11:08 08/31/17

Analytical Report

Service Request: K1708951

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/19/17 13:18

Sample Matrix: Soil Date Received: 08/24/17 10:30

Sample Name: 258-2-C08-081917 **Basis:** Dry

Lab Code: K1708951-008

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 18.9 mg/Kg 3.7 1.9 2 09/05/17 11:10 08/31/17 Lead 6010C 222 mg/Kg1.9 0.7 2 09/05/17 11:10 08/31/17

Analytical Report

Service Request: K1708951

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/19/17 13:19

Sample Matrix: Soil Date Received: 08/24/17 10:30

Sample Name: 258-2-C09-081917 **Basis:** Dry

Lab Code: K1708951-009

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 16.1 mg/Kg 4.0 2.0 2 09/05/17 11:12 08/31/17 Lead 6010C 208 mg/Kg2.0 0.7 2 09/05/17 11:12 08/31/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708951 **Date Collected:** 08/19/17 13:21 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:30

Sample Name: 258-2-C10-081917 Basis: Dry

Lab Code: K1708951-010

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 9.3 mg/Kg 3.9 1.9 2 09/05/17 11:21 08/31/17 Lead 6010C 198 mg/Kg1.9 0.7 2 09/05/17 11:21 08/31/17

Analytical Report

Service Request: K1708951

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/19/17 13:15

Sample Matrix: Soil Date Received: 08/24/17 10:30

Sample Name: 258-2-C06-081917-D **Basis:** Dry

Lab Code: K1708951-011

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q 15.0 Arsenic 6010C mg/Kg 4.0 2.0 2 09/05/17 11:23 08/31/17 Lead 6010C 234 mg/Kg2.0 0.7 2 09/05/17 11:23 08/31/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708951 **Date Collected:** 08/19/17 13:24 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:30

Sample Name: 258-2-D01-081917 Basis: Dry

Lab Code: K1708951-012

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 11.5 mg/Kg 4.1 2.0 2 09/05/17 11:25 08/31/17 Lead 6010C 411 mg/Kg2.0 0.7 2 09/05/17 11:25 08/31/17

Analytical Report

Service Request: K1708951

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/19/17 13:26

Sample Matrix: Soil Date Received: 08/24/17 10:30

Sample Name: 258-2-D02-081917 **Basis:** Dry

Lab Code: K1708951-013

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 8.4 mg/Kg 4.1 2.0 2 09/05/17 11:27 08/31/17 Lead 6010C **281** mg/Kg2.0 0.7 2 09/05/17 11:27 08/31/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708951 **Date Collected:** 08/19/17 13:29 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Date Received: 08/24/17 10:30 **Sample Matrix:** Soil

Sample Name: 258-2-D03-081917 Basis: Dry

Lab Code: K1708951-014

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed Date Extracted		
Arsenic	6010C	13.1	mg/Kg	4.0	2.0	2	09/05/17 11:29	08/31/17	
Lead	6010C	186	mg/Kg	2.0	0.7	2	09/05/17 11:29	08/31/17	

Printed 9/6/2017 2:51:31 PM Superset Reference:

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Analytical Report

Service Request: K1708951

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/19/17 13:30

Sample Matrix: Soil Date Received: 08/24/17 10:30

Sample Name: 258-2-D04-081917 **Basis:** Dry

Lab Code: K1708951-015

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 12.3 mg/Kg 4.0 2.0 2 09/05/17 11:31 08/31/17 Lead 6010C **400** mg/Kg2.0 0.7 2 09/05/17 11:31 08/31/17

Analytical Report

Service Request: K1708951

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/19/17 13:33

Sample Matrix: Soil Date Received: 08/24/17 10:30

Sample Name: 258-2-D05-081917 **Basis:** Dry

Lab Code: K1708951-016

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 16.2 mg/Kg 3.9 1.9 2 09/05/17 11:33 08/31/17 Lead 6010C 247 mg/Kg1.9 0.7 2 09/05/17 11:33 08/31/17

Analytical Report

Service Request: K1708951

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/19/17 13:37

Sample Matrix: Soil Date Received: 08/24/17 10:30

Sample Name: 258-2-D06-081917 **Basis:** Dry

Lab Code: K1708951-017

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 4.4 mg/Kg 4.1 2.0 2 09/05/17 11:36 08/31/17 Lead 6010C 71.2 mg/Kg2.0 0.7 2 09/05/17 11:36 08/31/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708951 **Date Collected:** 08/19/17 13:38 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:30

Sample Name: 258-2-D07-081917 Basis: Dry

Lab Code: K1708951-018

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 15.0 mg/Kg 4.0 2.0 2 09/05/17 11:38 08/31/17 Lead 6010C 635 mg/Kg2.0 0.7 2 09/05/17 11:38 08/31/17

Printed 9/6/2017 2:51:31 PM Superset Reference:

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Analytical Report

Service Request: K1708951

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/19/17 13:40

Sample Matrix: Soil Date Received: 08/24/17 10:30

Sample Name: 258-2-D08-081917 **Basis:** Dry

Lab Code: K1708951-019

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 20.4 mg/Kg 4.1 2.0 2 09/05/17 11:40 08/31/17 Lead 6010C 289 mg/Kg2.0 0.7 2 09/05/17 11:40 08/31/17

Printed 9/6/2017 2:51:32 PM Superset Reference:

Analytical Report

Service Request: K1708951

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/19/17 13:42

Sample Matrix: Soil Date Received: 08/24/17 10:30

Sample Name: 258-2-D09-081917 **Basis:** Dry

Lab Code: K1708951-020

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 10.6 mg/Kg 4.0 2.0 2 09/05/17 11:48 08/31/17 Lead 6010C 182 mg/Kg2.0 0.7 2 09/05/17 11:48 08/31/17

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Analytical Report

Client: Teck American Incorporated Service Request: K1708951

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 Date Collected: NA

Sample Matrix:

Soil

Date Received: NA

Sample Name:

Method Blank

Basis: Dry

Lab Code: KQ1712491-02

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	ate Extracted	Q
Arsenic	6010C	ND U	mg/Kg	4	2.0	2	09/05/17 10:34	08/31/17	
Lead	6010C	ND U	mg/Kg	2	0.7	2	09/05/17 10:34	08/31/17	

Printed 9/6/2017 2:51:32 PM Superset Reference:

QA/QC Report

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001

Service Request:

K1708951

Sample Matrix:

Soil

Date Collected:

08/19/17

Date Received:

08/24/17

Date Analyzed:

09/5/17

Date Extracted:

08/31/17

Duplicate Matrix Spike Summary

Total Metals

Sample Name:

258-2-C01-081917

Units: Basis: mg/Kg Dry

Lab Code:

K1708951-001

Analysis Method:

6010C

Prep Method:

EPA 3050B

Matrix Spike KQ1712491-03 **Duplicate Matrix Spike**

KQ1712491-04

	Sample		Spike			Spike		% Rec		RPD
Analyte Name	Result	Result	Amount	% Rec	Result	Amount	% Rec	Limits	RPD	Limit
Arsenic	10.4	104	100	94	107	103	93	75-125	3	30
Lead	294	392	100	98	397	103	100	75-125	1	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Printed 9/6/2017 2:51:32 PM Superset Reference:

QA/QC Report

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Analyzed:** 09/05/17

Sample Matrix: Soil

Lab Control Sample Summary Total Metals

Units:mg/Kg
Basis:Dry

Service Request: K1708951

Lab Control Sample KQ1712491-01

Analyte Name Analytical Method Result **Spike Amount** % Rec % Rec Limits Arsenic 6010C 486 500 97 80-120 Lead 6010C 507 500 101 80-120

Printed 9/6/2017 2:51:32 PM Superset Reference:



ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue Kelso, WA 98626

T:+1 360 577 7222

F: +1 360 636 1068 www.alsglobal.com

September 08, 2017

Analytical Report for Service Request No: K1708957

Dave Enos Teck American Incorporated 501 North Riverpoint Blvd., Suite 300 Spokane, WA 99202

RE: August 2017 Sampling SAT Study / B0095010.0005.00001

Dear Dave.

Enclosed are the results of the sample(s) submitted to our laboratory August 24, 2017 For your reference, these analyses have been assigned our service request number **K1708957**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3330. You may also contact me via email at Jeff.Coronado@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Jeff Coronado Metals Department

Manager



ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue Kelso, WA 98626

T: +1 360 577 7222 F: +1 360 636 1068 www.alsglobal.com

Table of Contents

Acronyms

Qualifiers

State Certifications, Accreditations, And Licenses

Case Narrative

Chain of Custody

Total Solids

Metals

Acronyms

ASTM American Society for Testing and Materials

A2LA American Association for Laboratory Accreditation

CARB California Air Resources Board

CAS Number Chemical Abstract Service registry Number

CFC Chlorofluorocarbon
CFU Colony-Forming Unit

DEC Department of Environmental Conservation

DEQ Department of Environmental Quality

DHS Department of Health Services

DOE Department of Ecology
DOH Department of Health

EPA U. S. Environmental Protection Agency

ELAP Environmental Laboratory Accreditation Program

GC Gas Chromatography

GC/MS Gas Chromatography/Mass Spectrometry

LOD Limit of Detection
LOQ Limit of Quantitation

LUFT Leaking Underground Fuel Tank

M Modified

MCL Maximum Contaminant Level is the highest permissible concentration of a substance

allowed in drinking water as established by the USEPA.

MDL Method Detection Limit
MPN Most Probable Number
MRL Method Reporting Limit

NA Not Applicable
NC Not Calculated

NCASI National Council of the Paper Industry for Air and Stream Improvement

ND Not Detected

NIOSH National Institute for Occupational Safety and Health

PQL Practical Quantitation Limit

RCRA Resource Conservation and Recovery Act

SIM Selected Ion Monitoring

TPH Total Petroleum Hydrocarbons

tr Trace level is the concentration of an analyte that is less than the PQL but greater than or

equal to the MDL.

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L14-51
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	_
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
	https://deq.nc.gov/about/divisions/water-resources/water-resources-	
	data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-	
North Carolina DEQ	certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaborator	
Oregon – DEQ (NELAP)	yAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.



Case Narrative

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

ALS ENVIRONMENTAL

Client: Teck American Incorporated Service Request No.: K1708957

Project: August 2017 Sampling SAT Study/ Date Received: 08/24/17

B0095010.0005.00001

Sample Matrix: Soil

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

Sample Receipt

Twenty soil samples were received for analysis at ALS Environmental on 08/24/17. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Total Metals

No anomalies associated with the analysis of these samples were observed.

Approved by



Chain of Custody

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

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ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

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ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

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Page 12 of 31



Total Solids

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Client: Teck American Incorporated

Service Request: K1708957 **Date Collected:** 08/19/17 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Analysis Method:

160.3 Modified Units: Percent

Prep Method: None Basis: As Received

Date Received: 08/24/17

Solids, Total

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
258-2-D10-081917	K1708957-001	96.7		_	1	08/28/17 19:08	
258-2-D01-081917-D	K1708957-002	95.1	-	-	1	08/28/17 19:08	
258-2-E01-081917	K1708957-003	98.1	-	-	1	08/28/17 19:08	
258-2-E02-081917	K1708957-004	98.2	-	-	1	08/28/17 19:08	
258-2-E03-081917	K1708957-005	98.7	-	-	1	08/28/17 19:08	
258-2-E04-081917	K1708957-006	98.2	-	-	1	08/28/17 19:08	
258-2-E05-081917	K1708957-007	98.8	-	-	1	08/28/17 19:08	
258-2-E06-081917	K1708957-008	95.9	-	-	1	08/28/17 19:08	
258-2-E07-081917	K1708957-009	97.3	-	-	1	08/28/17 19:08	
258-2-E08-081917	K1708957-010	98.0	-	-	1	08/28/17 19:08	
258-2-E09-081917	K1708957-011	98.5	-	-	1	08/28/17 19:08	
258-2-E10-081917	K1708957-012	97.0	-	-	1	08/28/17 19:08	

QA/QC Report

Client: Teck American Incorporated

Project August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Analysis Method:

160.3 Modified

Prep Method: None

Service Request: K1708957 Date Collected: 08/19/17

Date Received: 08/24/17

Units:Percent

Basis: As Received

Replicate Sample Summary Inorganic Parameters

			Sample	Duplicate			RPD	Date
Sample Name:	Lab Code:	MRL	Result	Result	Average	RPD	Limit	Analyzed
258-2-D10-081917	K1708957-001DUP	-	96.7	97.3	97.0	<1	20	08/28/17
258-2-E09-081917	K1708957-011DUP	-	98.5	98.1	98.3	<1	20	08/28/17

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Printed 09/09/17 10:07:34 AM Superset Reference:17-0000434908 rev 00



Metals

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Client: Teck American Incorporated

Service Request: K1708957 **Date Collected:** 08/19/17 13:45 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:30

Sample Name: 258-2-D10-081917 Basis: Dry

Lab Code: K1708957-001

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 11.7 mg/Kg 4.0 2.0 2 09/05/17 11:55 08/31/17 Lead 6010C 229 mg/Kg2.0 0.7 2 09/05/17 11:55 08/31/17

Printed 9/6/2017 3:00:12 PM Superset Reference:

Analytical Report

Client: Teck American Incorporated

Service Request: K1708957 **Date Collected:** 08/19/17 13:24 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:30

Sample Name: 258-2-D01-081917-D Basis: Dry

Lab Code: K1708957-002

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 11.2 mg/Kg 4.0 2.0 2 09/05/17 12:05 08/31/17 Lead 6010C 303 mg/Kg2.0 0.7 2 09/05/17 12:05 08/31/17

Printed 9/6/2017 3:00:12 PM Superset Reference:

Analytical Report

Client: Teck American Incorporated

Service Request: K1708957 **Date Collected:** 08/19/17 14:08 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:30

Sample Name: 258-2-E01-081917 Basis: Dry

Lab Code: K1708957-003

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 7.8 mg/Kg 3.8 1.9 2 09/05/17 12:07 08/31/17 Lead 6010C 161 mg/Kg1.9 0.7 2 09/05/17 12:07 08/31/17

Printed 9/6/2017 3:00:12 PM Superset Reference:

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Analytical Report

Service Request: K1708957

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/19/17 14:09

Sample Matrix: Soil Date Received: 08/24/17 10:30

Sample Name: 258-2-E02-081917 **Basis:** Dry

Lab Code: K1708957-004

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 8.2 mg/Kg 3.8 1.9 2 09/05/17 12:16 08/31/17 Lead 6010C **170** mg/Kg1.9 0.7 2 09/05/17 12:16 08/31/17

Printed 9/6/2017 3:00:12 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708957 **Date Collected:** 08/19/17 14:11 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:30

Sample Name: 258-2-E03-081917 Basis: Dry

Lab Code: K1708957-005

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 9.9 mg/Kg 3.8 1.9 2 09/05/17 12:18 08/31/17 Lead 6010C 161 mg/Kg1.9 0.7 2 09/05/17 12:18 08/31/17

Printed 9/6/2017 3:00:12 PM Superset Reference:

Analytical Report

Service Request: K1708957

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/19/17 14:13

Sample Matrix: Soil Date Received: 08/24/17 10:30

Sample Name: 258-2-E04-081917 **Basis:** Dry

Lab Code: K1708957-006

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 10.3 mg/Kg 3.9 1.9 2 09/05/17 12:20 08/31/17 Lead 6010C 183 mg/Kg1.9 0.7 2 09/05/17 12:20 08/31/17

Printed 9/6/2017 3:00:12 PM Superset Reference:

Analytical Report

Service Request: K1708957

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/19/17 14:14

Sample Matrix: Soil Date Received: 08/24/17 10:30

Sample Name: 258-2-E05-081917 **Basis:** Dry

Lab Code: K1708957-007

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 7.5 mg/Kg 3.7 1.9 2 09/05/17 12:22 08/31/17 Lead 6010C 110 mg/Kg1.9 0.7 2 09/05/17 12:22 08/31/17

Printed 9/6/2017 3:00:12 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708957 **Date Collected:** 08/19/17 14:16 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:30

Sample Name: 258-2-E06-081917 Basis: Dry

Lab Code: K1708957-008

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 11.0 mg/Kg 4.0 2.0 2 09/05/17 12:24 08/31/17 Lead 6010C 289 mg/Kg2.0 0.7 2 09/05/17 12:24 08/31/17

Printed 9/6/2017 3:00:12 PM Superset Reference:

Analytical Report

Service Request: K1708957

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/19/17 14:17

Sample Matrix: Soil Date Received: 08/24/17 10:30

Sample Name: 258-2-E07-081917 **Basis:** Dry

Lab Code: K1708957-009

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 14.3 mg/Kg 4.0 2.0 2 09/05/17 12:26 08/31/17 Lead 6010C 304 mg/Kg2.0 0.7 2 09/05/17 12:26 08/31/17

Printed 9/6/2017 3:00:12 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708957 **Date Collected:** 08/19/17 14:19 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Date Received: 08/24/17 10:30 **Sample Matrix:** Soil

Sample Name: 258-2-E08-081917 Basis: Dry

Lab Code: K1708957-010

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	Pate Extracted	Q
Arsenic	6010C	11.4	mg/Kg	4.0	2.0	2	09/05/17 12:28	08/31/17	
Lead	6010C	183	mg/Kg	2.0	0.7	2	09/05/17 12:28	08/31/17	

Printed 9/6/2017 3:00:12 PM Superset Reference:

Analytical Report

Client: Teck American Incorporated

Service Request: K1708957 **Date Collected:** 08/19/17 14:20 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:30

Sample Name: 258-2-E09-081917 Basis: Dry

Lab Code: K1708957-011

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 9.5 mg/Kg 3.8 1.9 2 09/05/17 12:31 08/31/17 Lead 6010C 262 mg/Kg1.9 0.7 2 09/05/17 12:31 08/31/17

Printed 9/6/2017 3:00:12 PM Superset Reference:

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Analytical Report

Service Request: K1708957

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/19/17 14:22

Sample Matrix: Soil Date Received: 08/24/17 10:30

Sample Name: 258-2-E10-081917 **Basis:** Dry

Lab Code: K1708957-012

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 8.0 mg/Kg 4.0 2.0 2 09/05/17 12:33 08/31/17 Lead 6010C **307** mg/Kg2.0 0.7 2 09/05/17 12:33 08/31/17

Printed 9/6/2017 3:00:12 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

eck American Incorporated Service Request: K1708957

Project:August 2017 Sampling SAT Study/B0095010.0005.00001Date Collected:NASample Matrix:SoilDate Received:NA

Sample Name: Method Blank Basis: Dry

Lab Code: KQ1712493-02

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q 08/31/17 Arsenic 6010C ND U mg/Kg 4 2.0 2 09/05/17 11:50 Lead 6010C ND U mg/Kg2 0.7 2 09/05/17 11:50 08/31/17

Printed 9/6/2017 3:00:13 PM Superset Reference:

QA/QC Report

Client: Teck American Incorporated

August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

K1708957

Date Collected: Date Received:

Service Request:

08/19/17 08/24/17

Date Analyzed:

09/5/17

Date Extracted:

08/31/17

Duplicate Matrix Spike Summary

Total Metals

Sample Name:

258-2-D10-081917

Units: Basis: mg/Kg

Dry

Lab Code:

Project:

K1708957-001

Analysis Method: Prep Method:

6010C

EPA 3050B

Matrix Spike KO1712493-03 **Duplicate Matrix Spike**

KO1712493-04

				,		(
	Sample		Spike			Spike		% Rec		RPD
Analyte Name	Result	Result	Amount	% Rec	Result	Amount	% Rec	Limits	RPD	Limit
Arsenic	11.7	107	98.4	97	109	100	96	75-125	2	30
Lead	229	325	98.4	98	328	100	99	75-125	<1	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Printed 9/6/2017 3:00:13 PM Superset Reference:

QA/QC Report

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Analyzed:** 09/05/17

Sample Matrix: Soil

Lab Control Sample Summary Total Metals

Units:mg/Kg
Basis:Dry

Service Request: K1708957

Lab Control Sample

KQ1712493-01

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Arsenic	6010C	490	500	98	80-120
Lead	6010C	510	500	102	80-120

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ALS Environmental
ALS Group USA, Corp
1317 South 13th Avenue
Kelso, WA 98626

T:+1 360 577 7222

F:+1 360 636 1068 www.alsglobal.com

September 08, 2017

Analytical Report for Service Request No: K1708960

Dave Enos Teck American Incorporated 501 North Riverpoint Blvd., Suite 300 Spokane, WA 99202

RE: August 2017 Sampling SAT Study / B0095010.0005.00001

Dear Dave.

Enclosed are the results of the sample(s) submitted to our laboratory August 24, 2017 For your reference, these analyses have been assigned our service request number **K1708960**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3330. You may also contact me via email at Jeff.Coronado@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Jeff Coronado

Metals Department

Manager



ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue Kelso, WA 98626

T: +1 360 577 7222 F: +1 360 636 1068 www.alsglobal.com

Table of Contents

Acronyms

Qualifiers

State Certifications, Accreditations, And Licenses

Case Narrative

Chain of Custody

Total Solids

Metals

Acronyms

ASTM American Society for Testing and Materials

A2LA American Association for Laboratory Accreditation

CARB California Air Resources Board

CAS Number Chemical Abstract Service registry Number

CFC Chlorofluorocarbon
CFU Colony-Forming Unit

DEC Department of Environmental Conservation

DEQ Department of Environmental Quality

DHS Department of Health Services

DOE Department of Ecology
DOH Department of Health

EPA U. S. Environmental Protection Agency

ELAP Environmental Laboratory Accreditation Program

GC Gas Chromatography

GC/MS Gas Chromatography/Mass Spectrometry

LOD Limit of Detection
LOQ Limit of Quantitation

LUFT Leaking Underground Fuel Tank

M Modified

MCL Maximum Contaminant Level is the highest permissible concentration of a substance

allowed in drinking water as established by the USEPA.

MDL Method Detection Limit
MPN Most Probable Number
MRL Method Reporting Limit

NA Not Applicable
NC Not Calculated

NCASI National Council of the Paper Industry for Air and Stream Improvement

ND Not Detected

NIOSH National Institute for Occupational Safety and Health

PQL Practical Quantitation Limit

RCRA Resource Conservation and Recovery Act

SIM Selected Ion Monitoring

TPH Total Petroleum Hydrocarbons

tr Trace level is the concentration of an analyte that is less than the PQL but greater than or

equal to the MDL.

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L14-51
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	_
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
	https://deq.nc.gov/about/divisions/water-resources/water-resources-	
	data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-	
North Carolina DEQ	certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaborator	
Oregon – DEQ (NELAP)	yAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.



Case Narrative

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

ALS ENVIRONMENTAL

Client: Teck American Incorporated Service Request No.: K1708960

Project: August 2017 Sampling SAT Study/ Date Received: 08/24/17

B0095010.0005.00001

Sample Matrix: Soil

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

Sample Receipt

Twenty soil samples were received for analysis at ALS Environmental on 08/24/17. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Total Metals

No anomalies associated with the analysis of these samples were observed.

Approved by



Chain of Custody

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

Date	8/23/17
PAGE SP#	5 OF 15

	Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001										Analys	is Request	ed
	Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001 Project Contact: Kady Young Company: Arcadis												
Proje	Project Contact: Kady Young Company: Arcadis							/601					
Comp	Company/Address: <u>189 North Cedar Street</u> Phone: <u>307-203-3510 or 810-588-1488</u>							lead/arsenic 3050B/6010					
City,	State, Zip: <u>Buffalo, V</u>	VY 828	34 FAX: 3	07-684-596	51		r of	lie 3					
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	N Riverpoint Blvd, Suite	300 Spok	ane, WA 9920										
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ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

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AGE	6	_ OF	15
1D# 1		CIL	~

									Analys	is Reques	ed .	
Project Name: Teck American - UCR SATES Project Number: B0095010.0005,00001 Project Contact: Kady Young Company: Arcadis Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488 City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961 Sampler's Signature:												
Sample I.D.	Date	Time	LAB ID	Matrix	Number	lead/arsenic 3050B/6010					REMARKS	
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Provide FAX Preliminary Re	sults		II. Report Dup., MS, MSD as require									
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Invoice Information			raw data)									
P.O. # <u>UCR-ALS-D34-17</u>			IV. CLP Deliverable Report									
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ALS Environmental-Kelso

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City, S	ity, State, Zip: <u>Buffalo, WY 82834</u> FAX: <u>307-684-5961</u>							nic 3					
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Total Solids

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Client: Teck American Incorporated

Service Request: K1708960 **Date Collected:** 08/22/17 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix:

Analysis Method:

Soil

160.3 Modified Units: Percent

Prep Method: None Basis: As Received

Date Received: 08/24/17

Solids, Total

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
258-3-D01-082217	K1708960-001	96.3	-	-	1	08/30/17 16:33	
258-3-D02-082217	K1708960-002	98.3	-	-	1	08/30/17 16:33	
258-3-D03-082217	K1708960-003	98.4	-	-	1	08/30/17 16:33	
258-3-D04-082217	K1708960-004	98.3	-	-	1	08/30/17 16:33	
258-3-D05-082217	K1708960-005	98.3	-	-	1	08/30/17 16:33	
258-3-D06-082217	K1708960-006	98.4	-	-	1	08/30/17 16:33	
258-3-D07-082217	K1708960-007	98.3	-	-	1	08/30/17 16:33	
258-3-D08-082217	K1708960-008	98.8	-	-	1	08/30/17 16:33	
258-3-D09-082217	K1708960-009	99.1	-	-	1	08/30/17 16:33	
258-3-D10-082217	K1708960-010	99.3	-	-	1	08/30/17 16:33	
258-3-D09-082217-D	K1708960-011	99.2	-	-	1	08/30/17 16:33	
258-3-E01-082217	K1708960-012	98.2	-	-	1	08/30/17 16:33	
258-3-E02-082217	K1708960-013	97.5	-	-	1	08/30/17 16:33	
258-3-E03-082217	K1708960-014	97.7	-	-	1	08/30/17 16:33	
258-3-E04-082217	K1708960-015	97.2	-	-	1	08/30/17 16:33	
258-3-E05-082217	K1708960-016	98.2	-	-	1	08/30/17 16:33	
258-3-E06-082217	K1708960-017	97.5	-	-	1	08/30/17 16:33	
258-3-E07-082217	K1708960-018	98.8	-	-	1	08/30/17 16:33	
258-3-E08-082217	K1708960-019	98.7	-	-	1	08/30/17 16:33	
258-3-E09-082217	K1708960-020	99.1	-	-	1	08/30/17 16:33	

QA/QC Report

Client: Teck American Incorporated

Project August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Analysis Method:

160.3 Modified

Prep Method: None

Service Request: K1708960 Date Collected: 08/22/17

Date Received: 08/24/17

Units:Percent
Basis: As Received

Replicate Sample Summary Inorganic Parameters

			Sample	Duplicate			RPD	Date
Sample Name:	Lab Code:	MRL	Result	Result	Average	RPD	Limit	Analyzed
258-3-D01-082217	K1708960-001DUP	-	96.3	96.4	96.4	<1	20	08/30/17
258-3-D09-082217-D	K1708960-011DUP	-	99.2	99.1	99.2	<1	20	08/30/17

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Printed 09/09/17 10:11:26 AM Superset Reference:17-0000435009 rev 00



Metals

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Client: Teck American Incorporated

Project:

Service Request: K1708960 **Date Collected:** 08/22/17 09:22 August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:30

Sample Name: 258-3-D01-082217 Basis: Dry

Lab Code: K1708960-001

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 18.2 mg/Kg 4.1 2.1 2 09/05/17 12:45 08/31/17 Lead 6010C **297** mg/Kg2.1 0.7 2 09/05/17 12:45 08/31/17

Printed 9/6/2017 2:58:30 PM Superset Reference:

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Analytical Report

Service Request: K1708960

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/22/17 09:24

Sample Matrix: Soil Date Received: 08/24/17 10:30

Sample Name: 258-3-D02-082217 **Basis:** Dry

Lab Code: K1708960-002

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 5.3 mg/Kg 3.9 2.0 2 09/05/17 12:56 08/31/17 Lead 6010C 54.6 mg/Kg2.0 0.7 2 09/05/17 12:56 08/31/17

Printed 9/6/2017 2:58:30 PM Superset Reference:

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Analytical Report

Service Request: K1708960

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/22/17 09:26

Sample Matrix: Soil Date Received: 08/24/17 10:30

Sample Name: 258-3-D03-082217 **Basis:** Dry

Lab Code: K1708960-003

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 4.2 mg/Kg 4.0 2.0 2 09/05/17 12:58 08/31/17 Lead 6010C 26.2 mg/Kg2.0 0.7 2 09/05/17 12:58 08/31/17

Printed 9/6/2017 2:58:30 PM Superset Reference:

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Analytical Report

Service Request: K1708960

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/22/17 09:28

Sample Matrix: Soil Date Received: 08/24/17 10:30

Sample Name: 258-3-D04-082217 **Basis:** Dry

Lab Code: K1708960-004

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 4.8 mg/Kg 3.8 1.9 2 09/05/17 13:00 08/31/17 Lead 6010C 51.0 mg/Kg1.9 0.7 2 09/05/17 13:00 08/31/17

Printed 9/6/2017 2:58:31 PM Superset Reference:

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Analytical Report

Service Request: K1708960

Client: Teck American Incorporated

> **Date Collected:** 08/22/17 09:27 August 2017 Sampling SAT Study/B0095010.0005.00001

Project: Sample Matrix: Soil **Date Received:** 08/24/17 10:30

Sample Name: 258-3-D05-082217 Basis: Dry

Lab Code: K1708960-005

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 5.5 mg/Kg 4.0 2.0 2 09/05/17 13:02 08/31/17 Lead 6010C 67.4 mg/Kg2.0 0.7 2 09/05/17 13:02 08/31/17

Printed 9/6/2017 2:58:31 PM Superset Reference:

Analytical Report

Client: Teck American Incorporated

Service Request: K1708960 **Date Collected:** 08/22/17 09:31 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:30

Sample Name: 258-3-D06-082217 Basis: Dry

Lab Code: K1708960-006

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 7.8 mg/Kg 3.8 1.9 2 09/05/17 13:11 08/31/17 Lead 6010C 101 mg/Kg1.9 0.7 2 09/05/17 13:11 08/31/17

Printed 9/6/2017 2:58:31 PM Superset Reference:

Analytical Report

Service Request: K1708960

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/22/17 09:32

Sample Matrix: Soil Date Received: 08/24/17 10:30

Sample Name: 258-3-D07-082217 **Basis:** Dry

Lab Code: K1708960-007

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 9.6 mg/Kg 4.0 2.0 2 09/05/17 13:13 08/31/17 Lead 6010C 143 mg/Kg2.0 0.7 2 09/05/17 13:13 08/31/17

Printed 9/6/2017 2:58:31 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/22/17 09:35

Sample Matrix: Soil

Date Received: 08/24/17 10:30

Service Request: K1708960

Sample Name: 258-3-D08-082217 **Basis:** Dry

Lab Code: K1708960-008

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 10.9 mg/Kg 3.7 1.9 2 09/05/17 13:15 08/31/17 Lead 6010C 153 mg/Kg1.9 0.7 2 09/05/17 13:15 08/31/17

Printed 9/6/2017 2:58:31 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708960 **Date Collected:** 08/22/17 09:38 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:30

Sample Name: 258-3-D09-082217 Basis: Dry

Lab Code: K1708960-009

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 9.5 mg/Kg 4.0 2.0 2 09/05/17 13:17 08/31/17 Lead 6010C 124 mg/Kg2.0 0.7 2 09/05/17 13:17 08/31/17

Printed 9/6/2017 2:58:31 PM Superset Reference:

Analytical Report

Service Request: K1708960

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/22/17 09:35

Sample Matrix: Soil Date Received: 08/24/17 10:30

Sample Name: 258-3-D10-082217 **Basis:** Dry

Lab Code: K1708960-010

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 12.3 mg/Kg 3.9 2.0 2 09/05/17 13:19 08/31/17 Lead 6010C 146 mg/Kg2.0 0.7 2 09/05/17 13:19 08/31/17

Printed 9/6/2017 2:58:31 PM Superset Reference:

Analytical Report

Service Request: K1708960

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/22/17 09:38

Sample Matrix: Soil Date Received: 08/24/17 10:30

Sample Name: 258-3-D09-082217-D **Basis:** Dry

Lab Code: K1708960-011

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 9.9 mg/Kg 3.9 2.0 2 09/05/17 13:21 08/31/17 Lead 6010C 130 mg/Kg2.0 0.7 2 09/05/17 13:21 08/31/17

Printed 9/6/2017 2:58:31 PM Superset Reference:

Analytical Report

Service Request: K1708960

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/22/17 09:39

Sample Matrix: Soil Date Received: 08/24/17 10:30

Sample Name: 258-3-E01-082217 **Basis:** Dry

Lab Code: K1708960-012

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 9.6 mg/Kg 3.8 1.9 2 09/05/17 13:24 08/31/17 Lead 6010C 139 mg/Kg1.9 0.7 2 09/05/17 13:24 08/31/17

Printed 9/6/2017 2:58:31 PM Superset Reference:

Analytical Report

Client: Teck American Incorporated

Service Request: K1708960 **Date Collected:** 08/22/17 09:41 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:30

Sample Name: 258-3-E02-082217 Basis: Dry

Lab Code: K1708960-013

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 9.7 mg/Kg 4.1 2.0 2 09/05/17 13:26 08/31/17 Lead 6010C **170** mg/Kg2.0 0.7 2 09/05/17 13:26 08/31/17

Printed 9/6/2017 2:58:31 PM Superset Reference:

Analytical Report

Service Request: K1708960

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/22/17 09:43

Sample Matrix: Soil Date Received: 08/24/17 10:30

Sample Name: 258-3-E03-082217 **Basis:** Dry

Lab Code: K1708960-014

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 12.3 mg/Kg 3.9 1.9 2 09/05/17 13:28 08/31/17 Lead 6010C 216 mg/Kg1.9 0.7 2 09/05/17 13:28 08/31/17

Printed 9/6/2017 2:58:31 PM Superset Reference:

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Analytical Report

Service Request: K1708960

Client: Teck American Incorporated

Date Collected: 08/22/17 09:45 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:30

Sample Name: 258-3-E04-082217 Basis: Dry

Lab Code: K1708960-015

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 10.0 mg/Kg 4.0 2.0 2 09/05/17 13:30 08/31/17 Lead 6010C 146 mg/Kg2.0 0.7 2 09/05/17 13:30 08/31/17

Printed 9/6/2017 2:58:31 PM Superset Reference:

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Analytical Report

Service Request: K1708960

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/22/17 09:46

Sample Matrix: Soil Date Received: 08/24/17 10:30

Sample Name: 258-3-E05-082217 **Basis:** Dry

Lab Code: K1708960-016

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 5.6 mg/Kg 4.0 2.0 2 09/05/17 13:38 08/31/17 Lead 6010C 59.1 mg/Kg2.0 0.7 2 09/05/17 13:38 08/31/17

Printed 9/6/2017 2:58:31 PM Superset Reference:

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Analytical Report

Service Request: K1708960

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/22/17 09:48

Sample Matrix: Soil Date Received: 08/24/17 10:30

Sample Name: 258-3-E06-082217 **Basis:** Dry

Lab Code: K1708960-017

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 13.3 mg/Kg 4.1 2.0 2 09/05/17 13:41 08/31/17 Lead 6010C **156** mg/Kg2.0 0.7 2 09/05/17 13:41 08/31/17

Printed 9/6/2017 2:58:31 PM Superset Reference:

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Analytical Report

Service Request: K1708960

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/22/17 09:50

Sample Matrix: Soil Date Received: 08/24/17 10:30

Sample Name: 258-3-E07-082217 **Basis:** Dry

Lab Code: K1708960-018

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 7.9 mg/Kg 4.0 2.0 2 09/05/17 13:43 08/31/17 Lead 6010C 51.1 mg/Kg2.0 0.7 2 09/05/17 13:43 08/31/17

Printed 9/6/2017 2:58:31 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708960 **Date Collected:** 08/22/17 09:51 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Date Received: 08/24/17 10:30

Sample Name: 258-3-E08-082217 Basis: Dry

Lab Code: K1708960-019

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	Oate Extracted	Q
Arsenic	6010C	7.5	mg/Kg	3.9	1.9	2	09/05/17 13:45	08/31/17	
Lead	6010C	87.0	mg/Kg	19	0.7	2.	09/05/17 13:45	08/31/17	

Printed 9/6/2017 2:58:32 PM Superset Reference:

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Analytical Report

Service Request: K1708960

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/22/17 09:52

Sample Matrix: Soil Date Received: 08/24/17 10:30

Sample Name: 258-3-E09-082217 **Basis:** Dry

Lab Code: K1708960-020

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 7.6 mg/Kg 3.9 1.9 2 09/05/17 13:47 08/31/17 Lead 6010C 87.3 mg/Kg1.9 0.7 2 09/05/17 13:47 08/31/17

Printed 9/6/2017 2:58:32 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708960

Project: August 2017 Sampling SAT Study/B0095010.0005.00001

Date Collected: NA

Sample Matrix: Soil

Date Received: NA

Sample Name:

Method Blank

Basis: Dry

Lab Code: KQ1712495-02

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	ate Extracted	Q
Arsenic	6010C	ND U	mg/Kg	4	2.0	2	09/05/17 12:35	08/31/17	
Lead	6010C	ND U	mg/Kg	2	0.7	2	09/05/17 12:35	08/31/17	

Printed 9/6/2017 2:58:32 PM Superset Reference:

QA/QC Report

Client: Teck American Incorporated

August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Service Request: Date Collected:

K1708960

Date Received:

08/22/17 08/24/17

Date Analyzed:

09/5/17

Date Extracted:

08/31/17

Duplicate Matrix Spike Summary

Total Metals

Sample Name:

258-3-D01-082217

Units: Basis: mg/Kg Dry

Lab Code:

Project:

K1708960-001

Analysis Method: Prep Method:

6010C

EPA 3050B

Matrix Spike KQ1712495-03 **Duplicate Matrix Spike**

KQ1712495-04

			_			_				
	Sample		Spike			Spike		% Rec		RPD
Analyte Name	Result	Result	Amount	% Rec	Result	Amount	% Rec	Limits	RPD	Limit
Arsenic	18.2	113	102	93	112	99.9	94	75-125	<1	30
Lead	297	381	102	82	376	99.9	79	75-125	1	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Printed 9/6/2017 2:58:32 PM Superset Reference:

QA/QC Report

Total Metals

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Lab Control Sample Summary

Units:mg/Kg
Basis:Dry

Service Request: K1708960

Date Analyzed: 09/05/17

Lab Control Sample

KQ1712495-01

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Arsenic	6010C	489	500	98	80-120
Lead	6010C	516	500	103	80-120

Printed 9/6/2017 2:58:32 PM Superset Reference:

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ALS Environmental
ALS Group USA, Corp
1317 South 13th Avenue
Kelso, WA 98626

T:+1 360 577 7222

F:+1 360 636 1068 www.alsglobal.com

September 08, 2017

Analytical Report for Service Request No: K1708961

Dave Enos Teck American Incorporated 501 North Riverpoint Blvd., Suite 300 Spokane, WA 99202

RE: August 2017 Sampling SAT Study / B0095010.0005.00001

Dear Dave.

Enclosed are the results of the sample(s) submitted to our laboratory August 24, 2017 For your reference, these analyses have been assigned our service request number **K1708961**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3330. You may also contact me via email at Jeff.Coronado@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Jeff Coronado Metals Department

Manager



ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue Kelso, WA 98626

T: +1 360 577 7222 F: +1 360 636 1068 www.alsglobal.com

Table of Contents

Acronyms

Qualifiers

State Certifications, Accreditations, And Licenses

Case Narrative

Chain of Custody

Total Solids

Metals

Acronyms

ASTM American Society for Testing and Materials

A2LA American Association for Laboratory Accreditation

CARB California Air Resources Board

CAS Number Chemical Abstract Service registry Number

CFC Chlorofluorocarbon
CFU Colony-Forming Unit

DEC Department of Environmental Conservation

DEQ Department of Environmental Quality

DHS Department of Health Services

DOE Department of Ecology
DOH Department of Health

EPA U. S. Environmental Protection Agency

ELAP Environmental Laboratory Accreditation Program

GC Gas Chromatography

GC/MS Gas Chromatography/Mass Spectrometry

LOD Limit of Detection
LOQ Limit of Quantitation

LUFT Leaking Underground Fuel Tank

M Modified

MCL Maximum Contaminant Level is the highest permissible concentration of a substance

allowed in drinking water as established by the USEPA.

MDL Method Detection Limit
MPN Most Probable Number
MRL Method Reporting Limit

NA Not Applicable
NC Not Calculated

NCASI National Council of the Paper Industry for Air and Stream Improvement

ND Not Detected

NIOSH National Institute for Occupational Safety and Health

PQL Practical Quantitation Limit

RCRA Resource Conservation and Recovery Act

SIM Selected Ion Monitoring

TPH Total Petroleum Hydrocarbons

tr Trace level is the concentration of an analyte that is less than the PQL but greater than or

equal to the MDL.

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L14-51
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	_
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
	https://deq.nc.gov/about/divisions/water-resources/water-resources-	
	data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-	
North Carolina DEQ	certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaborator	
Oregon – DEQ (NELAP)	yAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.



Case Narrative

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

ALS ENVIRONMENTAL

Client:Teck American IncorporatedService Request No.:K1708961Project:August 2017 Sampling SAT Study/Date Received:08/24/17

B0095010.0005.00001

Sample Matrix: Soil

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

Sample Receipt

Twelve soil samples were received for analysis at ALS Environmental on 08/24/17. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Total Metals

No anomalies associated with the analysis of these samples were observed.

Approved by



Chain of Custody

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

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ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

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ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

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Cooler Receipt and Preservation Form

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Total Solids

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Client: Teck American Incorporated

Service Request: K1708961 **Date Collected:** 08/22/17 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Analysis Method:

160.3 Modified Units: Percent

Prep Method: None Basis: As Received

Date Received: 08/24/17

Solids, Total

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
258-3-E10-082217	K1708961-001	99.1	-	-	1	08/30/17 16:33	
258-3-F01-082217	K1708961-002	98.0	-	-	1	08/30/17 16:33	
258-3-F02-082217	K1708961-003	97.2	-	-	1	08/30/17 16:33	
258-3-F03-082217	K1708961-004	97.3	-	-	1	08/30/17 16:33	
258-3-F04-082217	K1708961-005	98.0	-	-	1	08/30/17 16:33	
258-3-F05-082217	K1708961-006	98.3	-	-	1	08/30/17 16:33	
258-3-F06-082217	K1708961-007	97.5	-	-	1	08/30/17 16:33	
258-3-F07-082217	K1708961-008	98.2	-	-	1	08/30/17 16:33	
258-3-F08-082217	K1708961-009	99.1	-	-	1	08/30/17 16:33	
258-3-F09-082217	K1708961-010	98.8	-	-	1	08/30/17 16:33	
258-3-F10-082217	K1708961-011	99.1	-	-	1	08/30/17 16:33	
258-3-F01-082217-D	K1708961-012	97.8	-	-	1	08/30/17 16:33	

QA/QC Report

Client: Teck American Incorporated

Project August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Analysis Method:

160.3 Modified

Prep Method: None

Service Request:K1708961 Date Collected:08/22/17 Date Received:08/24/17

Units:Percent

Basis: As Received

Replicate Sample Summary Inorganic Parameters

			Sample	Duplicate			RPD	Date
Sample Name:	Lab Code:	MRL	Result	Result	Average	RPD	Limit	Analyzed
258-3-E10-082217	K1708961-001DUP	-	99.1	99.1	99.1	<1	20	08/30/17
258-3-F10-082217	K1708961-011DUP	-	99.1	99.1	99.1	<1	20	08/30/17

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Printed 09/09/17 10:10:08 AM Superset Reference:17-0000435010 rev 00



Metals

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Client: Teck American Incorporated

Service Request: K1708961 **Date Collected:** 08/22/17 09:54 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:30

Sample Name: 258-3-E10-082217 Basis: Dry

Lab Code: K1708961-001

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 12.1 mg/Kg 3.9 0.8 2 09/06/17 13:36 09/01/17 Lead 6010C 130 mg/Kg2.0 0.4 2 09/06/17 13:36 09/01/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708961 **Date Collected:** 08/22/17 10:01 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:30

Sample Name: 258-3-F01-082217 Basis: Dry

Lab Code: K1708961-002

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 10.0 mg/Kg 4.0 0.8 2 09/06/17 13:47 09/01/17 Lead 6010C 112 mg/Kg2.0 0.4 2 09/06/17 13:47 09/01/17

Analytical Report

Service Request: K1708961

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/22/17 10:04

Sample Matrix: Soil Date Received: 08/24/17 10:30

Sample Name: 258-3-F02-082217 **Basis:** Dry

Lab Code: K1708961-003

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 10.9 mg/Kg 4.0 0.8 2 09/06/17 13:49 09/01/17 Lead 6010C 178 mg/Kg2.0 0.4 2 09/06/17 13:49 09/01/17

Printed 9/7/2017 1:44:52 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708961 **Date Collected:** 08/22/17 10:06 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:30

Sample Name: 258-3-F03-082217 Basis: Dry

Lab Code: K1708961-004

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 10.4 mg/Kg 4.1 0.8 2 09/06/17 13:51 09/01/17 Lead 6010C 142 mg/Kg2.0 0.4 2 09/06/17 13:51 09/01/17

Printed 9/7/2017 1:44:52 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708961 **Date Collected:** 08/22/17 10:08 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:30

Sample Name: 258-3-F04-082217 Basis: Dry

Lab Code: K1708961-005

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 14.3 mg/Kg 4.0 0.8 2 09/06/17 14:00 09/01/17 Lead 6010C 226 mg/Kg2.0 0.4 2 09/06/17 14:00 09/01/17

Analytical Report

Service Request: K1708961

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/22/17 10:09

Sample Matrix: Soil Date Received: 08/24/17 10:30

Sample Name: 258-3-F05-082217 **Basis:** Dry

Lab Code: K1708961-006

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 11.0 mg/Kg 3.8 0.8 2 09/06/17 14:02 09/01/17 Lead 6010C 114 mg/Kg1.9 0.4 2 09/06/17 14:02 09/01/17

Analytical Report

Client: Teck American Incorporated

K1708961-007

Service Request: K1708961 **Date Collected:** 08/22/17 10:11 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Lab Code:

Date Received: 08/24/17 10:30

Sample Name: 258-3-F06-082217

Basis: Dry

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	ate Extracted	Q
Arsenic	6010C	15.9	mg/Kg	3.8	0.8	2	09/06/17 14:04	09/01/17	
Lead	6010C	206	mg/Kg	1.9	0.4	2	09/06/17 14:04	09/01/17	

Printed 9/7/2017 1:44:52 PM Superset Reference:

Page 23 of 31

Analytical Report

Service Request: K1708961

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/22/17 10:13

Sample Matrix: Soil Date Received: 08/24/17 10:30

1

 Sample Name:
 258-3-F07-082217
 Basis: Dry

 Lab Code:
 K1708961-008

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 14.5 mg/Kg 3.9 0.8 2 09/06/17 14:07 09/01/17 Lead 6010C 137 mg/Kg1.9 0.4 2 09/06/17 14:07 09/01/17

Analytical Report

Service Request: K1708961

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/22/17 10:17

Sample Matrix: Soil Date Received: 08/24/17 10:30

Sample Name: 258-3-F08-082217 **Basis:** Dry

Lab Code: K1708961-009

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 14.2 mg/Kg 3.8 0.8 2 09/06/17 14:09 09/01/17 Lead 6010C 121 mg/Kg1.9 0.4 2 09/06/17 14:09 09/01/17

Analytical Report

Service Request: K1708961

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/22/17 10:18

Sample Matrix: Soil Date Received: 08/24/17 10:30

Sample Name: 258-3-F09-082217 **Basis:** Dry

Lab Code: K1708961-010

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 16.7 mg/Kg 3.9 0.8 2 09/06/17 14:11 09/01/17 Lead 6010C 224 mg/Kg1.9 0.4 2 09/06/17 14:11 09/01/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708961 **Date Collected:** 08/22/17 10:22 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Date Received: 08/24/17 10:30

Sample Name: 258-3-F10-082217 Basis: Dry

Lab Code: K1708961-011

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	Pate Extracted	Q
Arsenic	6010C	10.7	mg/Kg	3.9	0.8	2	09/06/17 14:13	09/01/17	
Lead	6010C	216	mg/Kg	1.9	0.4	2	09/06/17 14:13	09/01/17	

Analytical Report

Client: Teck American Incorporated

Service Request: K1708961 **Date Collected:** 08/22/17 10:01 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Date Received: 08/24/17 10:30 **Sample Matrix:** Soil

Sample Name: 258-3-F01-082217-D Basis: Dry

Lab Code: K1708961-012

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	Q	
Arsenic	6010C	10.3	mg/Kg	4.0	0.8	2	09/06/17 14:15	09/01/17	
Lead	6010C	116	mg/Kg	2.0	0.4	2	09/06/17 14:15	09/01/17	

Analytical Report

Client: Teck American Incorporated Service Request: K1708961

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 Date Collected: NA

Sample Matrix:

Soil

Date Received: NA

Sample Name:

Method Blank

Basis: Dry

Lab Code: KQ1712514-02

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	ate Extracted	Q
Arsenic	6010C	ND U	mg/Kg	4	0.8	2	09/06/17 13:32	09/01/17	
Lead	6010C	ND U	mg/Kg	2	0.4	2	09/06/17 13:32	09/01/17	

QA/QC Report

Client: Teck American Incorporated

Sample Matrix: Soil

August 2017 Sampling SAT Study/B0095010.0005.00001

Date Received:

K1708961

Date Collected:

Service Request:

08/22/17

Date Analyzed:

08/24/17 09/6/17

Date Extracted:

09/1/17

Duplicate Matrix Spike Summary

Total Metals

Sample Name:

258-3-E10-082217

Units: Basis: mg/Kg

Dry

Lab Code:

Project:

K1708961-001

Analysis Method: Prep Method:

6010C

EPA 3050B

Matrix Spike

Duplicate Matrix Spike

KQ1712514-04

KQ1712514-03 **RPD** Sample Spike Spike % Rec Analyte Name Result Result **Amount** % Rec Result Amount % Rec Limits **RPD** Limit 12.1 106 101 93 106 98.9 95 30 Arsenic 75-125 <1 101 83 98.9 85 30 Lead 130 214 214 75-125 <1

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

QA/QC Report

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Analyzed:** 09/06/17

Sample Matrix: Soil

Lab Control Sample Summary Total Metals

> Units:mg/Kg Basis:Dry

Service Request: K1708961

Lab Control Sample

KQ1712514-01

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Arsenic	6010C	504	500	101	80-120
Lead	6010C	493	500	99	80-120



ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue Kelso, WA 98626

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F:+1 360 636 1068 www.alsglobal.com

September 08, 2017

Analytical Report for Service Request No: K1708964

Dave Enos Teck American Incorporated 501 North Riverpoint Blvd., Suite 300 Spokane, WA 99202

RE: August 2017 Sampling SAT Study / B0095010.0005.00001

Dear Dave.

Enclosed are the results of the sample(s) submitted to our laboratory August 24, 2017 For your reference, these analyses have been assigned our service request number **K1708964**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3330. You may also contact me via email at Jeff.Coronado@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Jeff Coronado

Metals Department

Manager



ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue Kelso, WA 98626

T: +1 360 577 7222 F: +1 360 636 1068 www.alsglobal.com

Table of Contents

Acronyms

Qualifiers

State Certifications, Accreditations, And Licenses

Case Narrative

Chain of Custody

Total Solids

Metals

Acronyms

ASTM American Society for Testing and Materials

A2LA American Association for Laboratory Accreditation

CARB California Air Resources Board

CAS Number Chemical Abstract Service registry Number

CFC Chlorofluorocarbon
CFU Colony-Forming Unit

DEC Department of Environmental Conservation

DEQ Department of Environmental Quality

DHS Department of Health Services

DOE Department of Ecology
DOH Department of Health

EPA U. S. Environmental Protection Agency

ELAP Environmental Laboratory Accreditation Program

GC Gas Chromatography

GC/MS Gas Chromatography/Mass Spectrometry

LOD Limit of Detection
LOQ Limit of Quantitation

LUFT Leaking Underground Fuel Tank

M Modified

MCL Maximum Contaminant Level is the highest permissible concentration of a substance

allowed in drinking water as established by the USEPA.

MDL Method Detection Limit
MPN Most Probable Number
MRL Method Reporting Limit

NA Not Applicable
NC Not Calculated

NCASI National Council of the Paper Industry for Air and Stream Improvement

ND Not Detected

NIOSH National Institute for Occupational Safety and Health

PQL Practical Quantitation Limit

RCRA Resource Conservation and Recovery Act

SIM Selected Ion Monitoring

TPH Total Petroleum Hydrocarbons

tr Trace level is the concentration of an analyte that is less than the PQL but greater than or

equal to the MDL.

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L14-51
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	_
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
	https://deq.nc.gov/about/divisions/water-resources/water-resources-	
	data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-	
North Carolina DEQ	certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaborator	
Oregon – DEQ (NELAP)	yAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.



Case Narrative

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

ALS ENVIRONMENTAL

Client: Teck American Incorporated Service Request No.: K1708964

Project: August 2017 Sampling SAT Study/ Date Received: 08/24/17

B0095010.0005.00001

Sample Matrix: Soil

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

Sample Receipt

Twenty soil samples were received for analysis at ALS Environmental on 08/24/17. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Total Metals

No anomalies associated with the analysis of these samples were observed.

Approved by



Chain of Custody

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

ALS Environmental-Kelso

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(360) 577-7222 FAX (360) 636-1068

Date	8/23	3/17	
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ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

Date 8/23/17
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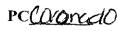
ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

Date	8/23/1	7
PAGE SR#	7 OF	<u> 15</u>

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taw er Temp	Corrected.	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermo		Coole	r/COC ID-	A	Tracking	Number	NA NA	F
).7	0.3	2.0	2.1	10.1	300					591105	<u>532</u>		_
			<u> </u>										-
							<i>A</i> .	<u> </u>					<u></u>
_	g material:	<i>Inserts</i> ers properly	·	Bubble Wi		Packs	(Wet Ic	e) Dry Ic	e Sleeve	2.5	NA /		N
Vere sa /ere all	amples rece I sample Ial	eived in goo If app bels comple	od condition olicable, tissete (i.e anal	n (temperati sue sample: ysis, preser	ure, unbro s were rece vation, etc	eived: :.)?	Froz	en Part	ially Than		NA /		N
	-	is and tags pottles/cont	-				_	-	in the tabl	e on page 2.	NA	$\langle \rangle$	N
-			anicis and	volunics ice	CIVED IOI						N/A		N
	ոշ քություն	erved bottle	s (see SMO	GEN SOP)					icate in th	e table below	NA NA	Y	N N
	- '	erved bottle eceived wi		•	received a	t the ap	propriat		icate in th	e table below	NS (S) (S)	Y Y	N N N
Were V	- '	eceived wi		•	received a	t the ap	propriat		icate in th	e table below	\sim		N
Were V	OA vials r	eceived witative?		pace? Indi	received a	t the ap	propriat		icate in th	e table below	\sim	Y	N N
Were V	OA vials r	eceived witative?		pace? Indi	received a	t the ap	propriat		icate in th		\sim	Y	N N
Were V Was Cl	OA vials r	eceived witative?		pace? Indi	received a	t the ap	propriat		Volun	Identified by:		Y	N N N
Were V Was Cl	OA vials r	eceived witative?	thout heads	pace? Indi	received a cate in the sample ID c	t the ap	propriat	e pH? Ind	Volun	Identified by:	ANA NA NA	Y	N N N
Were V Was Cl	OA vials r	eceived witative?	thout heads	pace? Indi	received a cate in the sample ID c	t the ap	propriat	e pH? Ind	Volun	Identified by:	ANA NA NA	Y	N N N
Were V Was Cl	OA vials r	eceived witative?	thout heads	pace? Indi	received a cate in the sample ID c	t the ap	propriat	e pH? Ind	Volun	Identified by:	ANA NA NA	Y	N N N
Were V Was Cl	OA vials r	eceived witative?	thout heads	pace? Indi	received a cate in the sample ID c	t the ap	propriat	e pH? Ind	Volun	Identified by:	ANA NA NA	Y	N N N
Were V Was C1	OA vials r 12/Res neg	received with attive?	Bottle Bottle	pace? Indi	received a cate in the sample ID c	t the ap	propriat	e pH? Ind	Volun	Identified by:	ANA NA NA	Y	N N N
Were V Was C1	OA vials r 12/Res neg	eceived witative?	Bottle Bottle	pace? Indi	received a cate in the sample ID c	t the ap	propriat	e pH? Ind	Volun	Identified by:	ANA NA NA	Y	N N N
Were V Was C1	OA vials r 12/Res neg	received with attive?	Bottle Bottle	pace? Indi	received a cate in the sample ID c	t the ap	propriat	e pH? Ind	Volun	Identified by:	ANA NA NA	Y	N N N

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Total Solids

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Client: Teck American Incorporated

Service Request: K1708964 **Date Collected:** 08/21/17 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix:

Analysis Method:

Soil

160.3 Modified Units: Percent

Prep Method: None Basis: As Received

Date Received: 08/24/17

Solids, Total

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
258-1-D01-082117	K1708964-001	98.4	-	-	1	08/29/17 09:57	
258-1-D02-082117	K1708964-002	97.5	-	-	1	08/29/17 09:57	
258-1-D03-082117	K1708964-003	96.5	-	-	1	08/29/17 09:57	
258-1-D04-082117	K1708964-004	99.0	-	-	1	08/29/17 09:57	
258-1-D05-082117	K1708964-005	93.4	-	-	1	08/29/17 09:57	
258-1-D06-082117	K1708964-006	97.9	-	-	1	08/29/17 09:57	
258-1-D07-082117	K1708964-007	96.4	-	-	1	08/29/17 09:57	
258-1-D08-082117	K1708964-008	96.0	-	-	1	08/29/17 09:57	
258-1-D09-082117	K1708964-009	95.7	-	-	1	08/29/17 09:57	
258-1-D10-082117	K1708964-010	95.9	-	-	1	08/29/17 09:57	
258-1-D05-082117-D	K1708964-011	96.4	-	-	1	08/29/17 09:57	
258-1-E01-082117	K1708964-012	94.8	-	-	1	08/29/17 09:57	
258-1-E02-082117	K1708964-013	98.0	-	-	1	08/29/17 09:57	
258-1-E03-082117	K1708964-014	96.3	-	-	1	08/29/17 09:57	
258-1-E04-082117	K1708964-015	97.7	-	-	1	08/29/17 09:57	
258-1-E05-082117	K1708964-016	96.7	-	-	1	08/29/17 09:57	
258-1-E06-082117	K1708964-017	97.2	-	-	1	08/29/17 09:57	
258-1-E07-082117	K1708964-018	97.5	-	-	1	08/29/17 09:57	
258-1-E08-082117	K1708964-019	92.6	-	-	1	08/29/17 09:57	
258-1-E09-082117	K1708964-020	95.5			1	08/29/17 09:57	

QA/QC Report

Client: Teck American Incorporated

Project August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Analysis Method:

160.3 Modified

Prep Method: None

Service Request: K1708964

Date Collected: 08/21/17

Date Received: 08/24/17

Units:Percent

Basis: As Received

Replicate Sample Summary Inorganic Parameters

			Sample	Duplicate			RPD	Date
Sample Name:	Lab Code:	MRL	Result	Result	Average	RPD	Limit	Analyzed
258-1-D01-082117	K1708964-001DUP	-	98.4	98.6	98.5	<1	20	08/29/17
258-1-D05-082117-D	K1708964-011DUP	-	96.4	95.6	96.0	<1	20	08/29/17

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Printed 09/07/17 11:42:24 AM Superset Reference:17-0000434996 rev 00



Metals

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Service Request: K1708964

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/21/17 12:48

Sample Matrix: Soil Date Received: 08/24/17 10:30

Sample Name: 258-1-D01-082117 **Basis:** Dry

Lab Code: K1708964-001

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 4.1 mg/Kg 4.0 0.8 2 09/06/17 14:31 09/01/17 Lead 6010C 33.5 mg/Kg2.0 0.4 2 09/06/17 14:31 09/01/17

Printed 9/7/2017 1:47:15 PM Superset Reference:

Analytical Report

Client: Teck American Incorporated

Service Request: K1708964 **Date Collected:** 08/21/17 12:50 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Date Received: 08/24/17 10:30

Sample Name: 258-1-D02-082117 Basis: Dry

Lab Code: K1708964-002

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	ate Extracted	Q
Arsenic	6010C	8.9	mg/Kg	4.1	0.8	2	09/06/17 14:42	09/01/17	
Lead	6010C	273	mg/Kg	2.1	0.4	2	09/06/17 14:42	09/01/17	

Printed 9/7/2017 1:47:16 PM Superset Reference:

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Analytical Report

Service Request: K1708964

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/21/17 12:52

Sample Matrix: Soil Date Received: 08/24/17 10:30

Sample Name: 258-1-D03-082117 **Basis:** Dry

Lab Code: K1708964-003

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 10.9 mg/Kg 4.0 0.8 2 09/06/17 14:44 09/01/17 Lead 6010C 191 mg/Kg2.0 0.4 2 09/06/17 14:44 09/01/17

Printed 9/7/2017 1:47:16 PM Superset Reference:

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Analytical Report

Service Request: K1708964

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/21/17 12:54

Sample Matrix: Soil Date Received: 08/24/17 10:30

Sample Name: 258-1-D04-082117 **Basis:** Dry

Lab Code: K1708964-004

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 8.1 mg/Kg 4.0 0.8 2 09/06/17 14:46 09/01/17 Lead 6010C 243 mg/Kg2.0 0.4 2 09/06/17 14:46 09/01/17

Printed 9/7/2017 1:47:16 PM Superset Reference:

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Analytical Report

Service Request: K1708964

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/21/17 12:56

Sample Matrix: Soil Date Received: 08/24/17 10:30

Sample Name: 258-1-D05-082117 **Basis:** Dry

Lab Code: K1708964-005

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 17.4 mg/Kg 4.2 0.8 2 09/06/17 14:48 09/01/17 Lead 6010C **796** mg/Kg2.1 0.4 2 09/06/17 14:48 09/01/17

Printed 9/7/2017 1:47:16 PM Superset Reference:

Analytical Report

Client: Teck American Incorporated

Service Request: K1708964 **Date Collected:** 08/21/17 12:58 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:30

Sample Name: 258-1-D06-082117 Basis: Dry

Lab Code: K1708964-006

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 6.6 mg/Kg 3.9 0.8 2 09/06/17 14:50 09/01/17 Lead 6010C 168 mg/Kg2.0 0.4 2 09/06/17 14:50 09/01/17

Printed 9/7/2017 1:47:16 PM Superset Reference:

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Analytical Report

Service Request: K1708964

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/21/17 13:00

Sample Matrix: Soil Date Received: 08/24/17 10:30

Sample Name: 258-1-D07-082117 **Basis:** Dry

Lab Code: K1708964-007

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 17.2 mg/Kg 3.9 0.8 2 09/06/17 14:59 09/01/17 Lead 6010C **569** mg/Kg2.0 0.4 2 09/06/17 14:59 09/01/17

Printed 9/7/2017 1:47:16 PM Superset Reference:

Analytical Report

Client: Teck American Incorporated

Service Request: K1708964 **Date Collected:** 08/21/17 13:02 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:30

Sample Name: 258-1-D08-082117 Basis: Dry

Lab Code: K1708964-008

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 11.8 mg/Kg 4.0 0.8 2 09/06/17 15:01 09/01/17 Lead 6010C 243 mg/Kg2.0 0.4 2 09/06/17 15:01 09/01/17

Printed 9/7/2017 1:47:16 PM Superset Reference:

Analytical Report

Client: Teck American Incorporated

Service Request: K1708964 **Date Collected:** 08/21/17 13:04 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Date Received: 08/24/17 10:30 **Sample Matrix:** Soil

Sample Name: 258-1-D09-082117 Basis: Dry

Lab Code: K1708964-009

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	ate Extracted	Q
Arsenic	6010C	17.0	mg/Kg	4.1	0.8	2	09/06/17 15:03	09/01/17	
Lead	6010C	244	mg/Kg	2.1	0.4	2	09/06/17 15:03	09/01/17	

Printed 9/7/2017 1:47:16 PM Superset Reference:

Analytical Report

Service Request: K1708964

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/21/17 13:06

Sample Matrix: Soil Date Received: 08/24/17 10:30

Sample Name: 258-1-D10-082117 **Basis:** Dry

Lab Code: K1708964-010

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 14.2 mg/Kg 4.1 0.8 2 09/06/17 15:06 09/01/17 Lead 6010C 193 mg/Kg2.1 0.4 2 09/06/17 15:06 09/01/17

Printed 9/7/2017 1:47:16 PM Superset Reference:

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Analytical Report

Service Request: K1708964

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/21/17 12:56

Sample Matrix: Soil Date Received: 08/24/17 10:30

Sample Name: 258-1-D05-082117-D **Basis:** Dry

Lab Code: K1708964-011

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 20.2 mg/Kg 4.0 0.8 2 09/06/17 15:08 09/01/17 Lead 6010C **826** mg/Kg2.0 0.4 2 09/06/17 15:08 09/01/17

Printed 9/7/2017 1:47:16 PM Superset Reference:

Analytical Report

Client: Teck American Incorporated

Service Request: K1708964 **Date Collected:** 08/21/17 13:20 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Date Received: 08/24/17 10:30 **Sample Matrix:** Soil

Sample Name: 258-1-E01-082117 Basis: Dry

Lab Code: K1708964-012

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	Oate Extracted	Q
Arsenic	6010C	12.1	mg/Kg	4.1	0.8	2	09/06/17 15:10	09/01/17	
Lead	6010C	324	mg/Kg	2.1	0.4	2.	09/06/17 15:10	09/01/17	

Printed 9/7/2017 1:47:16 PM Superset Reference:

Analytical Report

Client: Teck American Incorporated

Service Request: K1708964 **Date Collected:** 08/21/17 13:42 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:30

Sample Name: 258-1-E02-082117 Basis: Dry

Lab Code: K1708964-013

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 5.4 mg/Kg 3.8 0.8 2 09/06/17 15:12 09/01/17 Lead 6010C 76.6 mg/Kg1.9 0.4 2 09/06/17 15:12 09/01/17

Printed 9/7/2017 1:47:16 PM Superset Reference:

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Analytical Report

Service Request: K1708964

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/21/17 13:43

Sample Matrix: Soil Date Received: 08/24/17 10:30

Sample Name: 258-1-E03-082117 **Basis:** Dry

Lab Code: K1708964-014

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 12.5 mg/Kg 4.0 0.8 2 09/06/17 15:14 09/01/17 Lead 6010C 225 mg/Kg2.0 0.4 2 09/06/17 15:14 09/01/17

Printed 9/7/2017 1:47:16 PM Superset Reference:

Analytical Report

Service Request: K1708964

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/21/17 13:45

Sample Matrix: Soil Date Received: 08/24/17 10:30

Sample Name: 258-1-E04-082117 **Basis:** Dry

Lab Code: K1708964-015

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 12.4 mg/Kg 3.9 0.8 2 09/06/17 15:16 09/01/17 Lead 6010C 381 mg/Kg1.9 0.4 2 09/06/17 15:16 09/01/17

Printed 9/7/2017 1:47:16 PM Superset Reference:

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Analytical Report

Service Request: K1708964

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/21/17 13:46

Sample Matrix: Soil Date Received: 08/24/17 10:30

Sample Name: 258-1-E05-082117 **Basis:** Dry

Lab Code: K1708964-016

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q 12.5 Arsenic 6010C mg/Kg 4.0 0.8 2 09/06/17 15:19 09/01/17 Lead 6010C 230 mg/Kg2.0 0.4 2 09/06/17 15:19 09/01/17

Printed 9/7/2017 1:47:16 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708964 **Date Collected:** 08/21/17 13:49 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:30

Sample Name: 258-1-E06-082117 Basis: Dry

Lab Code: K1708964-017

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 12.0 mg/Kg 4.0 0.8 2 09/06/17 15:27 09/01/17 Lead 6010C **201** mg/Kg2.0 0.4 2 09/06/17 15:27 09/01/17

Printed 9/7/2017 1:47:17 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708964 **Date Collected:** 08/21/17 13:52 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:30

Sample Name: 258-1-E07-082117 Basis: Dry

Lab Code: K1708964-018

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 11.9 mg/Kg 3.8 0.8 2 09/06/17 15:29 09/01/17 Lead 6010C 143 mg/Kg1.9 0.4 2 09/06/17 15:29 09/01/17

Printed 9/7/2017 1:47:17 PM Superset Reference:

Analytical Report

Client: Teck American Incorporated

Service Request: K1708964 **Date Collected:** 08/21/17 13:55 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:30

Sample Name: 258-1-E08-082117 Basis: Dry

Lab Code: K1708964-019

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 20.4 mg/Kg 4.2 0.8 2 09/06/17 15:31 09/01/17 Lead 6010C 403 mg/Kg2.1 0.4 2 09/06/17 15:31 09/01/17

Printed 9/7/2017 1:47:17 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708964 **Date Collected:** 08/21/17 13:57 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:30

Sample Name: 258-1-E09-082117 Basis: Dry

Lab Code: K1708964-020

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 15.1 mg/Kg 4.1 0.8 2 09/06/17 15:34 09/01/17 Lead 6010C 229 mg/Kg2.1 0.4 2 09/06/17 15:34 09/01/17

Printed 9/7/2017 1:47:17 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated Service Request: K1708964

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 Date Collected: NA

Sample Matrix:

Soil

Date Received: NA

Sample Name:

Method Blank

Basis: Dry

Lab Code: KQ1712515-02

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed Date Extracted		
Arsenic	6010C	ND U	mg/Kg	4	0.8	2	09/06/17 14:17	09/01/17	
Lead	6010C	ND U	mg/Kg	2	0.4	2	09/06/17 14:17	09/01/17	

Printed 9/7/2017 1:47:17 PM Superset Reference:

QA/QC Report

Client: Teck American Incorporated

August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Project:

Date Collected: Date Received:

Units:

Basis:

K1708964 08/21/17

Date Analyzed:

Service Request:

08/24/17 09/6/17

Date Extracted:

09/1/17

Duplicate Matrix Spike Summary

Total Metals

Lab Code: K1708964-001

mg/Kg Dry

Analysis Method:

Sample Name:

6010C

258-1-D01-082117

Prep Method: EPA 3050B

> **Matrix Spike** KQ1712515-03

Duplicate Matrix Spike

KQ1712515-04

	Sample		Spike			Spike		% Rec		RPD
Analyte Name	Result	Result	Amount	% Rec	Result	Amount	% Rec	Limits	RPD	Limit
Arsenic	4.1	98.8	98.7	96	100	98.7	98	75-125	2	30
Lead	33.5	129	98.7	96	130	98.7	98	75-125	<1	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Printed 9/7/2017 1:47:17 PM Superset Reference:

QA/QC Report

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Service Request: K1708964 Date Analyzed: 09/06/17

Lab Control Sample Summary Total Metals

Units:mg/Kg
Basis:Dry

Lab Control Sample

KQ1712515-01

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Arsenic	6010C	500	500	100	80-120
Lead	6010C	493	500	99	80-120

Printed 9/7/2017 1:47:17 PM Superset Reference:



ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue Kelso, WA 98626

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September 12, 2017

Analytical Report for Service Request No: K1708967

Dave Enos Teck American Incorporated 501 North Riverpoint Blvd., Suite 300 Spokane, WA 99202

RE: August 2017 Sampling SAT Study / B0095010.0005.00001

Dear Dave,

Enclosed are the results of the sample(s) submitted to our laboratory August 24, 2017 For your reference, these analyses have been assigned our service request number **K1708967**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3330. You may also contact me via email at Jeff.Coronado@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Jeff Coronado

Metals Department

Manager



ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue Kelso, WA 98626

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Acronyms

ASTM American Society for Testing and Materials

A2LA American Association for Laboratory Accreditation

CARB California Air Resources Board

CAS Number Chemical Abstract Service registry Number

CFC Chlorofluorocarbon
CFU Colony-Forming Unit

DEC Department of Environmental Conservation

DEQ Department of Environmental Quality

DHS Department of Health Services

DOE Department of Ecology
DOH Department of Health

EPA U. S. Environmental Protection Agency

ELAP Environmental Laboratory Accreditation Program

GC Gas Chromatography

GC/MS Gas Chromatography/Mass Spectrometry

LOD Limit of Detection
LOQ Limit of Quantitation

LUFT Leaking Underground Fuel Tank

M Modified

MCL Maximum Contaminant Level is the highest permissible concentration of a substance

allowed in drinking water as established by the USEPA.

MDL Method Detection Limit
MPN Most Probable Number
MRL Method Reporting Limit

NA Not Applicable
NC Not Calculated

NCASI National Council of the Paper Industry for Air and Stream Improvement

ND Not Detected

NIOSH National Institute for Occupational Safety and Health

PQL Practical Quantitation Limit

RCRA Resource Conservation and Recovery Act

SIM Selected Ion Monitoring

TPH Total Petroleum Hydrocarbons

tr Trace level is the concentration of an analyte that is less than the PQL but greater than or

equal to the MDL.

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L14-51
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	_
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
	https://deq.nc.gov/about/divisions/water-resources/water-resources-	
	data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-	
North Carolina DEQ	certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaborator	
Oregon – DEQ (NELAP)	yAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.



Case Narrative

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

ALS ENVIRONMENTAL

Client:Teck American IncorporatedService Request No.:K1708967Project:August 2017 Sampling SAT Study/Date Received:08/24/17

B0095010.0005.00001

Sample Matrix: Soil

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

Sample Receipt

Twelve soil samples were received for analysis at ALS Environmental on 08/24/17. The samples were received in good condition and consistent with the accompanying chain of custody form, except where noted on the cooler receipt and preservation form included in this report. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Total Metals

No anomalies associated with the analysis of these samples were observed.

Approved by



Chain of Custody

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ALS Environmental-Kelso

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ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

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1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

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Cooler Receipt and Preservation Form

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eceived:	Aug.	24,17	Opened:	8171	/	By:	(B)	_ Unlo	aded:	724	By:	<u> </u>	
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Total Solids

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Client: Teck American Incorporated

Service Request: K1708967 **Date Collected:** 08/21/17 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix:

Analysis Method:

Soil

160.3 Modified Units: Percent

Prep Method: None Basis: As Received

Date Received: 08/24/17

Solids, Total

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
258-1-E10-082117	K1708967-001	98.0	-	-	1	08/30/17 16:33	
258-1-E10-082117-D	K1708967-002	97.1	-	-	1	08/30/17 16:33	
258-1-F01-082117	K1708967-003	96.5	-	-	1	08/30/17 16:33	
258-1-F02-082117	K1708967-004	97.8	-	-	1	08/30/17 16:33	
258-1-F03-082117	K1708967-005	98.6	-	-	1	08/30/17 16:33	
258-1-F04-082117	K1708967-006	98.2	-	-	1	08/30/17 16:33	
258-1-F05-082117	K1708967-007	96.5	-	-	1	08/30/17 16:33	
258-1-F06-082117	K1708967-008	94.2	-	-	1	08/30/17 16:33	
258-1-F07-082117	K1708967-009	95.7	-	-	1	08/30/17 16:33	
258-1-F08-082117	K1708967-010	95.8	-	-	1	08/30/17 16:33	
258-1-F09-082117	K1708967-011	96.6	-	-	1	08/30/17 16:33	
258-1-F10-082117	K1708967-012	98.2	-	-	1	08/30/17 16:33	

QA/QC Report

Client: Teck American Incorporated

Project August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Analysis Method: 160.3 Modified

Prep Method: None

Service Request: K1708967 Date Collected: 08/21/17

Date Received: 08/24/17

Units:Percent
Basis: As Received

Replicate Sample Summary Inorganic Parameters

			Sample	Duplicate			RPD	Date
Sample Name:	Lab Code:	MRL	Result	Result	Average	RPD	Limit	Analyzed
258-1-F08-082117	K1708967-010DUP	-	95.8	96.4	96.1	<1	20	08/30/17
Batch QC	K1708971-001DUP	-	96.3	95.8	96.1	<1	20	08/30/17

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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Metals

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Service Request: K1708967

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/21/17 13:59

Sample Matrix: Soil Date Received: 08/24/17 10:30

Sample Name: 258-1-E10-082117 **Basis:** Dry

Lab Code: K1708967-001

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 15.7 mg/Kg 4.0 0.8 2 09/06/17 15:40 09/01/17 Lead 6010C 194 mg/Kg2.0 0.4 2 09/06/17 15:40 09/01/17

Printed 9/7/2017 7:15:17 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708967 **Date Collected:** 08/21/17 13:59 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Date Received: 08/24/17 10:30 **Sample Matrix:** Soil

Sample Name: 258-1-E10-082117-D Basis: Dry

Lab Code: K1708967-002

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	ate Extracted	Q
Arsenic	6010C	14.7	mg/Kg	4.0	0.8	2	09/06/17 15:57	09/01/17	
Lead	6010C	178	mg/Kg	2.0	0.4	2	09/06/17 15:57	09/01/17	

Printed 9/7/2017 7:15:18 PM Superset Reference:

Analytical Report

Service Request: K1708967

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/21/17 13:40

Sample Matrix: Soil Date Received: 08/24/17 10:30

Sample Name: 258-1-F01-082117 **Basis:** Dry

Lab Code: K1708967-003

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 8.1 mg/Kg 4.1 0.8 2 09/06/17 16:00 09/01/17 Lead 6010C 129 mg/Kg2.1 0.4 2 09/06/17 16:00 09/01/17

Printed 9/7/2017 7:15:18 PM Superset Reference:

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Analytical Report

Service Request: K1708967

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/21/17 13:24

Sample Matrix: Soil Date Received: 08/24/17 10:30

Sample Name: 258-1-F02-082117 **Basis:** Dry

Lab Code: K1708967-004

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 6.2 mg/Kg 3.9 0.8 2 09/06/17 16:02 09/01/17 Lead 6010C 99.4 mg/Kg1.9 0.4 2 09/06/17 16:02 09/01/17

Printed 9/7/2017 7:15:18 PM Superset Reference:

Analytical Report

Service Request: K1708967

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/21/17 13:26

Sample Matrix: Soil Date Received: 08/24/17 10:30

Sample Name: 258-1-F03-082117 **Basis:** Dry

Lab Code: K1708967-005

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 10.0 mg/Kg 3.9 0.8 2 09/06/17 16:04 09/01/17 Lead 6010C 121 mg/Kg2.0 0.4 2 09/06/17 16:04 09/01/17

Printed 9/7/2017 7:15:18 PM Superset Reference:

Analytical Report

Client: Teck American Incorporated

Service Request: K1708967 **Date Collected:** 08/21/17 13:28 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:30

Sample Name: 258-1-F04-082117 Basis: Dry

Lab Code: K1708967-006

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 13.5 mg/Kg 3.8 0.8 2 09/06/17 16:06 09/01/17 Lead 6010C 217 mg/Kg1.9 0.4 2 09/06/17 16:06 09/01/17

Printed 9/7/2017 7:15:18 PM Superset Reference:

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Analytical Report

Service Request: K1708967

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/21/17 13:30

Sample Matrix: Soil Date Received: 08/24/17 10:30

Sample Name: 258-1-F05-082117 **Basis:** Dry

Lab Code: K1708967-007

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 26.0 mg/Kg 4.0 0.8 2 09/06/17 16:08 09/01/17 Lead 6010C **739** mg/Kg2.0 0.4 2 09/06/17 16:08 09/01/17

Printed 9/7/2017 7:15:18 PM Superset Reference:

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Analytical Report

Service Request: K1708967

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/21/17 14:06

Sample Matrix: Soil Date Received: 08/24/17 10:30

Sample Name: 258-1-F06-082117 **Basis:** Dry

Lab Code: K1708967-008

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q 47.2 Arsenic 6010C mg/Kg 4.1 0.8 2 09/06/17 16:10 09/01/17 Lead 6010C **530** mg/Kg2.1 0.4 2 09/06/17 16:10 09/01/17

Printed 9/7/2017 7:15:18 PM Superset Reference:

Analytical Report

Client: Teck American Incorporated

Service Request: K1708967 **Date Collected:** 08/21/17 14:09 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Date Received: 08/24/17 10:30 **Sample Matrix:** Soil

Sample Name: 258-1-F07-082117 Basis: Dry

Lab Code: K1708967-009

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	Pate Extracted	Q
Arsenic	6010C	22.1	mg/Kg	4.1	0.8	2	09/06/17 16:13	09/01/17	
Lead	6010C	228	mg/Kg	2.0	0.4	2	09/06/17 16:13	09/01/17	

Printed 9/7/2017 7:15:18 PM Superset Reference:

Analytical Report

Client: Teck American Incorporated

Service Request: K1708967 **Date Collected:** 08/21/17 14:11 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:30

Sample Name: 258-1-F08-082117 Basis: Dry

Lab Code: K1708967-010

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 22.4 mg/Kg 4.1 0.8 2 09/06/17 16:15 09/01/17 Lead 6010C 346 mg/Kg2.0 0.4 2 09/06/17 16:15 09/01/17

Printed 9/7/2017 7:15:18 PM Superset Reference:

Analytical Report

Client: Teck American Incorporated

Service Request: K1708967 **Date Collected:** 08/21/17 14:12 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:30

Sample Name: 258-1-F09-082117 Basis: Dry

Lab Code: K1708967-011

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	ate Extracted	Q
Arsenic	6010C	16.2	mg/Kg	4.0	0.8	2	09/06/17 16:26	09/01/17	
Lead	6010C	195	mg/Kg	2.0	0.4	2	09/06/17 16:26	09/01/17	

Printed 9/7/2017 7:15:18 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708967 **Date Collected:** 08/21/17 14:13 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:30

Sample Name: 258-1-F10-082117 Basis: Dry

Lab Code: K1708967-012

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 11.4 mg/Kg 3.9 0.8 2 09/06/17 16:28 09/01/17 Lead 6010C 153 mg/Kg2.0 0.4 2 09/06/17 16:28 09/01/17

Printed 9/7/2017 7:15:18 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708967

Project: August 2017 Sampling SAT Study/B0095010.0005.00001

Date Collected: NA

Sample Matrix: Soil

~ ..

Date Received: NA

Sample Name:

Basis: Dry

Lab Code:

Method Blank KQ1712516-02

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	ate Extracted	Q
Arsenic	6010C	ND U	mg/Kg	4	0.8	2	09/06/17 15:36	09/01/17	
Lead	6010C	ND U	mg/Kg	2	0.4	2	09/06/17 15:36	09/01/17	

Printed 9/7/2017 7:15:18 PM Superset Reference:

QA/QC Report

Client: Teck American Incorporated

August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Service Request: Date Collected:

K1708967

08/21/17

Date Received: Date Analyzed: 08/24/17 09/6/17

Date Extracted:

Units:

Basis:

09/1/17

Duplicate Matrix Spike Summary

Total Metals

Sample Name:

258-1-E10-082117

mg/Kg

Dry

Lab Code:

Project:

K1708967-001

Analysis Method: Prep Method:

6010C

EPA 3050B

Matrix Spike KQ1712516-03 **Duplicate Matrix Spike** KQ1712516-04

	Sample		Spike			Spike		% Rec		RPD
Analyte Name	Result	Result	Amount	% Rec	Result	Amount	% Rec	Limits	RPD	Limit
Arsenic	15.7	109	100	93	106	94.5	95	75-125	3	30
Lead	194	280	100	85	278	94.5	88	75-125	<1	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Printed 9/7/2017 7:15:19 PM Superset Reference:

QA/QC Report

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Service Request: K1708967 Date Analyzed: 09/06/17

Lab Control Sample Summary Total Metals

Units:mg/Kg
Basis:Dry

Lab Control Sample KQ1712516-01

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Arsenic	6010C	505	500	101	80-120
Lead	6010C	494	500	99	80-120

Printed 9/7/2017 7:15:18 PM Superset Reference:



ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue Kelso, WA 98626

T:+1 360 577 7222

F:+1 360 636 1068 www.alsglobal.com

September 08, 2017

Analytical Report for Service Request No: K1708971

Dave Enos Teck American Incorporated 501 North Riverpoint Blvd., Suite 300 Spokane, WA 99202

RE: August 2017 Sampling SAT Study / B0095010.0005.00001

Dear Dave,

Enclosed are the results of the sample(s) submitted to our laboratory August 24, 2017 For your reference, these analyses have been assigned our service request number **K1708971**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3330. You may also contact me via email at Jeff.Coronado@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Jeff Coronado Metals Department

Manager



ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue Kelso, WA 98626

T: +1 360 577 7222 F: +1 360 636 1068 www.alsglobal.com

Table of Contents

Acronyms

Qualifiers

State Certifications, Accreditations, And Licenses

Case Narrative

Chain of Custody

Total Solids

Metals

Acronyms

ASTM American Society for Testing and Materials

A2LA American Association for Laboratory Accreditation

CARB California Air Resources Board

CAS Number Chemical Abstract Service registry Number

CFC Chlorofluorocarbon
CFU Colony-Forming Unit

DEC Department of Environmental Conservation

DEQ Department of Environmental Quality

DHS Department of Health Services

DOE Department of Ecology
DOH Department of Health

EPA U. S. Environmental Protection Agency

ELAP Environmental Laboratory Accreditation Program

GC Gas Chromatography

GC/MS Gas Chromatography/Mass Spectrometry

LOD Limit of Detection
LOQ Limit of Quantitation

LUFT Leaking Underground Fuel Tank

M Modified

MCL Maximum Contaminant Level is the highest permissible concentration of a substance

allowed in drinking water as established by the USEPA.

MDL Method Detection Limit
MPN Most Probable Number
MRL Method Reporting Limit

NA Not Applicable
NC Not Calculated

NCASI National Council of the Paper Industry for Air and Stream Improvement

ND Not Detected

NIOSH National Institute for Occupational Safety and Health

PQL Practical Quantitation Limit

RCRA Resource Conservation and Recovery Act

SIM Selected Ion Monitoring

TPH Total Petroleum Hydrocarbons

tr Trace level is the concentration of an analyte that is less than the PQL but greater than or

equal to the MDL.

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L14-51
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	_
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
	https://deq.nc.gov/about/divisions/water-resources/water-resources-	
	data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-	
North Carolina DEQ	certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaborator	
Oregon – DEQ (NELAP)	yAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.



Case Narrative

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

ALS ENVIRONMENTAL

Client: Teck American Incorporated Service Request No.: K1708971

Project: August 2017 Sampling SAT Study/ Date Received: 08/24/17

B0095010.0005.00001

Sample Matrix: Soil

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

Sample Receipt

Twenty-soil samples were received for analysis at ALS Environmental on 08/24/17. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Total Metals

No anomalies associated with the analysis of these samples were observed.

Approved by



Chain of Custody

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

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ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

Date	8/2	3/	17	
PAGE	2	OF	15	

							Analysis Requested					
Project Name: <u>Teck American</u> Project Contact: <u>Kady Young</u> C Company/Address: <u>189 North Ce</u> City, State, Zip: <u>Buffalo</u> , <u>WY 828</u>	ompany: <u>A</u> dar Street	rcadis Phone: <u>30</u>	7-2 <u>03-3510 or 810-588-1488</u>		of Containers	ead/arsenic 3050B/6010						
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ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

Date	8/2.	3/1	7
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Cooler Receipt and Preservation Form

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Total Solids

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Client: Teck American Incorporated

Service Request: K1708971 **Date Collected:** 08/22/17 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix:

Analysis Method:

Soil

160.3 Modified

Prep Method: None Units: Percent Basis: As Received

Date Received: 08/24/17

Solids, Total

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
441-1-A01-082217	K1708971-001	96.3	-	-	1	08/30/17 16:33	
441-1-A02-082217	K1708971-002	88.3	-	-	1	08/30/17 16:33	
441-1-A03-082217	K1708971-003	87.6	-	-	1	08/30/17 16:33	
441-1-A04-082217	K1708971-004	89.8	-	-	1	08/30/17 16:33	
441-1-A05-082217	K1708971-005	90.3	-	-	1	08/30/17 16:33	
441-1-A06-082217	K1708971-006	89.0	-	-	1	08/30/17 16:33	
441-1-A07-082217	K1708971-007	91.5	-	-	1	08/30/17 16:33	
441-1-A08-082217	K1708971-008	89.0	-	-	1	08/30/17 16:33	
441-1-A09-082217	K1708971-009	93.1	-	-	1	08/30/17 16:33	
441-1-A10-082217	K1708971-010	88.5	=	-	1	08/30/17 16:33	
441-1-A08-082217-D	K1708971-011	85.6	-	-	1	08/30/17 16:33	
441-1-B01-082217	K1708971-012	61.8	-	-	1	08/30/17 16:33	
441-1-B02-082217	K1708971-013	95.5	-	-	1	08/30/17 16:33	
441-1-B03-082217	K1708971-014	84.7	-	-	1	08/30/17 16:33	
441-1-B04-082217	K1708971-015	89.6	=	-	1	08/30/17 16:33	
441-1-B05-082217	K1708971-016	92.2	-	-	1	08/30/17 16:33	
441-1-B06-082217	K1708971-017	92.5	-	-	1	08/30/17 16:33	
441-1-B07-082217	K1708971-018	93.6	-	-	1	08/30/17 16:33	
441-1-B08-082217	K1708971-019	94.7	-	-	1	08/30/17 16:33	
441-1-B09-082217	K1708971-020	95.0	-	-	1	08/30/17 16:33	

QA/QC Report

Client: Teck American Incorporated

Project August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Analysis Method:

160.3 Modified

Prep Method: None

Service Request:K1708971

Date Collected: 08/22/17
Date Received: 08/24/17

Units:Percent

Basis: As Received

Replicate Sample Summary Inorganic Parameters

			Sample	Duplicate			RPD	Date
Sample Name:	Lab Code:	MRL	Result	Result	Average	RPD	Limit	Analyzed
441-1-A01-082217	K1708971-001DUP	-	96.3	95.8	96.1	<1	20	08/30/17
441-1-A08-082217-D	K1708971-011DUP	-	85.6	86.9	86.3	2	20	08/30/17

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Printed 09/09/17 10:15:58 AM Superset Reference:17-0000435545 rev 00



Metals

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Client: Teck American Incorporated

Service Request: K1708971 **Date Collected:** 08/22/17 15:15 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Date Received: 08/24/17 10:30

Sample Name: 441-1-A01-082217 Basis: Dry

Lab Code: K1708971-001

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	ate Extracted	Q
Arsenic	6010C	17.0	mg/Kg	4.0	0.8	2	09/06/17 16:35	09/01/17	
Lead	6010C	115	mg/Kg	2.0	0.4	2	09/06/17 16:35	09/01/17	

Analytical Report

Service Request: K1708971

Date Received: 08/24/17 10:30

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/22/17 15:18

Sample Matrix: Soil

Sample Name: 441-1-A02-082217 **Basis:** Dry

Lab Code: K1708971-002

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 25.4 mg/Kg 4.2 0.8 2 09/06/17 16:46 09/01/17 Lead 6010C 1310 mg/Kg2.1 0.4 2 09/06/17 16:46 09/01/17

Printed 9/7/2017 2:25:58 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708971 **Date Collected:** 08/22/17 15:20 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:30

Sample Name: 441-1-A03-082217 Basis: Dry

Lab Code: K1708971-003

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 10.7 mg/Kg 4.3 0.9 2 09/06/17 16:55 09/01/17 Lead 6010C 1910 mg/Kg2.2 0.4 2 09/06/17 16:55 09/01/17

Printed 9/7/2017 2:25:58 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708971 **Date Collected:** 08/22/17 15:23 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:30

Sample Name: 441-1-A04-082217 Basis: Dry

Lab Code: K1708971-004

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 23.8 mg/Kg 4.4 0.9 2 09/06/17 16:57 09/01/17 Lead 6010C 549 mg/Kg2.2 0.4 2 09/06/17 16:57 09/01/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708971 **Date Collected:** 08/22/17 15:26 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Date Received: 08/24/17 10:30 **Sample Matrix:** Soil

Sample Name: 441-1-A05-082217 Basis: Dry

Lab Code: K1708971-005

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	ate Extracted	Q
Arsenic	6010C	21.3	mg/Kg	4.3	0.9	2	09/06/17 16:59	09/01/17	
Lead	6010C	571	mg/Kg	2.1	0.4	2	09/06/17 16:59	09/01/17	

Analytical Report

Service Request: K1708971

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/22/17 15:29

Sample Matrix: Soil Date Received: 08/24/17 10:30

Sample Name: 441-1-A06-082217 **Basis:** Dry

Lab Code: K1708971-006

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 18.3 mg/Kg 4.4 0.9 2 09/06/17 17:02 09/01/17 Lead 6010C 1130 mg/Kg2.2 0.4 2 09/06/17 17:02 09/01/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708971 **Date Collected:** 08/22/17 15:32 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:30

Sample Name: 441-1-A07-082217 Basis: Dry

Lab Code: K1708971-007

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 17.6 mg/Kg 4.1 0.8 2 09/06/17 17:04 09/01/17 Lead 6010C 96.8 mg/Kg2.0 0.4 2 09/06/17 17:04 09/01/17

Analytical Report

Service Request: K1708971

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/22/17 15:37

Sample Matrix: Soil Date Received: 08/24/17 10:30

Sample Name: 441-1-A08-082217 **Basis:** Dry

Lab Code: K1708971-008

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 33.0 mg/Kg 4.3 0.9 2 09/06/17 17:06 09/01/17 Lead 6010C 1280 mg/Kg2.2 0.4 2 09/06/17 17:06 09/01/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708971 **Date Collected:** 08/22/17 15:41 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:30

Sample Name: 441-1-A09-082217 Basis: Dry

Lab Code: K1708971-009

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 20.5 mg/Kg 4.3 0.9 2 09/06/17 17:09 09/01/17 Lead 6010C 248 mg/Kg2.1 0.4 2 09/06/17 17:09 09/01/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708971 **Date Collected:** 08/22/17 15:43 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:30

Sample Name: 441-1-A10-082217 Basis: Dry

K1708971-010 Lab Code:

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 36.7 mg/Kg 4.3 0.9 2 09/06/17 17:11 09/01/17 Lead 6010C 554 mg/Kg2.2 0.4 2 09/06/17 17:11 09/01/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708971 **Date Collected:** 08/22/17 15:37 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:30

Sample Name: 441-1-A08-082217-D Basis: Dry

K1708971-011 Lab Code:

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 28.5 mg/Kg 4.6 0.9 2 09/06/17 17:13 09/01/17 Lead 6010C 1360 mg/Kg2.3 0.5 2 09/06/17 17:13 09/01/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708971 **Date Collected:** 08/22/17 15:46 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:30

Sample Name: 441-1-B01-082217 Basis: Dry

Lab Code: K1708971-012

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 14.6 mg/Kg 3.0 0.6 2 09/06/17 17:16 09/01/17 Lead 6010C 159 mg/Kg1.5 0.3 2 09/06/17 17:16 09/01/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708971 **Date Collected:** 08/22/17 15:48 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:30

Sample Name: 441-1-B02-082217 Basis: Dry

Lab Code: K1708971-013

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q 15.9 Arsenic 6010C mg/Kg 3.8 0.8 2 09/06/17 17:28 09/01/17 Lead 6010C **160** mg/Kg1.9 0.4 2 09/06/17 17:28 09/01/17

Printed 9/7/2017 2:25:58 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708971 **Date Collected:** 08/22/17 15:51 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Date Received: 08/24/17 10:30

Sample Name: 441-1-B03-082217 Basis: Dry

Lab Code: K1708971-014

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 8.1 mg/Kg 4.6 0.9 2 09/06/17 17:30 09/01/17 Lead 6010C 544 mg/Kg2.3 0.5 2 09/06/17 17:30 09/01/17

Printed 9/7/2017 2:25:58 PM Superset Reference:

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Analytical Report

Service Request: K1708971

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/22/17 15:53

Sample Matrix: Soil Date Received: 08/24/17 10:30

Sample Name: 441-1-B04-082217 **Basis:** Dry

Lab Code: K1708971-015

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 18.5 mg/Kg 4.2 0.8 2 09/06/17 17:33 09/01/17 Lead 6010C 803 mg/Kg2.1 0.4 2 09/06/17 17:33 09/01/17

Analytical Report

Service Request: K1708971

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/22/17 15:56

Sample Matrix: Soil Date Received: 08/24/17 10:30

Sample Name: 441-1-B05-082217 **Basis:** Dry

Lab Code: K1708971-016

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 26.2 mg/Kg 4.1 0.8 2 09/06/17 17:35 09/01/17 Lead 6010C **550** mg/Kg2.1 0.4 2 09/06/17 17:35 09/01/17

Printed 9/7/2017 2:25:58 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708971 **Date Collected:** 08/22/17 15:58 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:30

Sample Name: 441-1-B06-082217 Basis: Dry

Lab Code: K1708971-017

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 30.0 mg/Kg 3.9 0.8 2 09/06/17 17:37 09/01/17 Lead 6010C 2150 mg/Kg2.0 0.4 2 09/06/17 17:37 09/01/17

Printed 9/7/2017 2:25:59 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708971 **Date Collected:** 08/22/17 16:00 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Date Received: 08/24/17 10:30 **Sample Matrix:** Soil

Sample Name: 441-1-B07-082217 Basis: Dry

Lab Code: K1708971-018

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	ate Extracted	Q
Arsenic	6010C	22.7	mg/Kg	4.1	0.8	2	09/06/17 17:40	09/01/17	
Lead	6010C	222	mg/Kg	2.1	0.4	2	09/06/17 17:40	09/01/17	

Analytical Report

Service Request: K1708971

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/22/17 16:02

Sample Matrix: Soil Date Received: 08/24/17 10:30

Sample Name: 441-1-B08-082217 **Basis:** Dry

Lab Code: K1708971-019

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 17.1 mg/Kg 4.1 0.8 2 09/06/17 17:42 09/01/17 Lead 6010C 237 mg/Kg2.1 0.4 2 09/06/17 17:42 09/01/17

Printed 9/7/2017 2:25:59 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708971 **Date Collected:** 08/22/17 16:04 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:30

Sample Name: 441-1-B09-082217 Basis: Dry

Lab Code: K1708971-020

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 23.9 mg/Kg 4.2 0.8 2 09/06/17 17:44 09/01/17 Lead 6010C 277 mg/Kg2.1 0.4 2 09/06/17 17:44 09/01/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708971

Project: August 2017 Sampling SAT Study/B0095010.0005.00001

Date Collected: NA

Sample Matrix: Soil

rugust 2017 bumping biri budy/b00/3010.0003.00001

Date Received: NA

Sample Name:

Method Blank

Basis: Dry

Lab Code: KQ1712517-02

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	ate Extracted	Q
Arsenic	6010C	ND U	mg/Kg	4	0.8	2	09/06/17 16:30	09/01/17	
Lead	6010C	ND U	mg/Kg	2	0.4	2	09/06/17 16:30	09/01/17	

QA/QC Report

Client: Teck American Incorporated **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001 **Service Request:**

K1708971

Sample Matrix:

Date Collected:

08/22/17

Soil

Date Received:

08/24/17

09/1/17

Date Analyzed: Date Extracted: 09/6/17

Duplicate Matrix Spike Summary

Total Metals

Sample Name:

441-1-A01-082217

Units:

mg/Kg

Lab Code:

K1708971-001

Basis:

Dry

Analysis Method: Prep Method:

6010C

EPA 3050B

Matrix Spike

KQ1712517-03

Duplicate Matrix Spike

KQ1712517-04

	Sample		Spike			Spike		% Rec		RPD
Analyte Name	Result	Result	Amount	% Rec	Result	Amount	% Rec	Limits	RPD	Limit
Arsenic	17.0	113	103	94	115	103	95	75-125	2	30
Lead	115	202	103	85	199	103	82	75-125	2	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

QA/QC Report

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Analyzed:** 09/06/17

Sample Matrix: Soil

Lab Control Sample Summary Total Metals

Units:mg/Kg
Basis:Dry

Service Request: K1708971

Lab Control Sample KQ1712517-01

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Arsenic	6010C	494	500	99	80-120
Lead	6010C	486	500	97	80-120



ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue Kelso, WA 98626

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September 08, 2017

Analytical Report for Service Request No: K1708973

Dave Enos Teck American Incorporated 501 North Riverpoint Blvd., Suite 300 Spokane, WA 99202

RE: August 2017 Sampling SAT Study / B0095010.0005.00001

Dear Dave.

Enclosed are the results of the sample(s) submitted to our laboratory August 24, 2017 For your reference, these analyses have been assigned our service request number **K1708973**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3330. You may also contact me via email at Jeff.Coronado@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Jeff Coronado

Metals Department

Manager



ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue Kelso, WA 98626

T: +1 360 577 7222 F: +1 360 636 1068 www.alsglobal.com

Table of Contents

Acronyms

Qualifiers

State Certifications, Accreditations, And Licenses

Case Narrative

Chain of Custody

Total Solids

Metals

Acronyms

ASTM American Society for Testing and Materials

A2LA American Association for Laboratory Accreditation

CARB California Air Resources Board

CAS Number Chemical Abstract Service registry Number

CFC Chlorofluorocarbon
CFU Colony-Forming Unit

DEC Department of Environmental Conservation

DEQ Department of Environmental Quality

DHS Department of Health Services

DOE Department of Ecology
DOH Department of Health

EPA U. S. Environmental Protection Agency

ELAP Environmental Laboratory Accreditation Program

GC Gas Chromatography

GC/MS Gas Chromatography/Mass Spectrometry

LOD Limit of Detection
LOQ Limit of Quantitation

LUFT Leaking Underground Fuel Tank

M Modified

MCL Maximum Contaminant Level is the highest permissible concentration of a substance

allowed in drinking water as established by the USEPA.

MDL Method Detection Limit
MPN Most Probable Number
MRL Method Reporting Limit

NA Not Applicable
NC Not Calculated

NCASI National Council of the Paper Industry for Air and Stream Improvement

ND Not Detected

NIOSH National Institute for Occupational Safety and Health

PQL Practical Quantitation Limit

RCRA Resource Conservation and Recovery Act

SIM Selected Ion Monitoring

TPH Total Petroleum Hydrocarbons

tr Trace level is the concentration of an analyte that is less than the PQL but greater than or

equal to the MDL.

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L14-51
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	_
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
	https://deq.nc.gov/about/divisions/water-resources/water-resources-	
	data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-	
North Carolina DEQ	certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaborator	
Oregon – DEQ (NELAP)	yAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.



Case Narrative

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

ALS ENVIRONMENTAL

Client: Teck American Incorporated Service Request No.: K1708973

Project: August 2017 Sampling SAT Study/ Date Received: 08/24/17

B0095010.0005.00001

Sample Matrix: Soil

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

Sample Receipt

Twenty soil samples were received for analysis at ALS Environmental on 08/24/17. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Total Metals

Matrix Spike Recovery Exceptions:

The matrix spike recovery of Lead for sample 258-3-A01-082117 was outside the project specified control criteria as a result of the heterogeneous character of the sample. The Relative Percent Difference (RPD) for the replicate analysis supported this. Since the unspiked samples contained high analyte concentrations relative to the amount spiked, the variability between replicates was sufficient to bias the percent recovery outside the control criteria. The associated QA/QC results (e.g. control sample, calibration standards, etc.) indicated the analysis was in control. No further corrective action was appropriate.

No other anomalies associated with the analysis of these samples were observed.

Approved by



Chain of Custody

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068



Date 8/23/17
PAGE / OF 15

											Analys	is Requesi	ed
					t Number: <u>B0095010.0005.00001</u>		ers	0			,		
Proj	ect Contact: <u>Kady Y</u>	oung C	ompany:	Arcadis			Containers	/601			į		
Com	Company/Address: <u>189 North Cedar Street</u> Phone: <u>307-203-3510 or 810-588-1488</u>						Con	ead/arsenic 3050B/6010	l i				
City.	City, State, Zip: <u>Buffalo, WY 82834</u> FAX: <u>307-684-5961</u>						jo	ic 3(
							Number	rsen					
Sampler's Signature: Sample I.D. Date Time LAB ID Matrix					Ž	ad/a					DENGADIZO		
250	Sample I.D. 3 - 3 - A01-08	2117		Time	LAB ID	S	1						REMARKS
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				<u> </u>			-	X					
······	A03	-		1703		S	1	X					
	A04	<u> </u>	_	1765		S	1	X					
	A-05			1706		S	1	X					
	A06			1708		S	1	X					
	A07			1710		S	1	X					
	A08		1	1712		S	1	Х					
	A09			1714	-	S	1	Х					
	A10	V	V	1715		S	1	X					
'URN	AROUND REQUIRE	EMENT	S		REPORT REQUIREMENTS		Comments/Special Instructions:						
	24 hr 48 hr		5 day		I. Routine Report: Results, Method B	lank,	Hold	Remainde	er				
	Standard (10 days)				Surrogate, as required								
	Provide FAX Prelim sted Report Date:	inary Ro	esults	<u> </u>	II. Report Dup., MS, MSD as required III. Data Validation Report (includes	d							
	e Information				raw data)								
	UCR-ALS-D34-17				IV. CLP Deliverable Report								
	Cristy Kessel - Tecl				V. EDD								
	N Riverpoint Blvd, Suite	300 Spok	ane, WA 992										
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Signati	ire:	11		Signature:			Signat	ure:				Signature:	
	Name: Joe L	at L		Printed Na	me: Les Kennedy	-	Printe	d Name: _				Printed Na	me:
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ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068



Date 8/23/17
PAGE 2 OF 15

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001									Analysis Requested				
Project	i Name: <u>Teck Amer</u>	rican -	UCR SA	<u>ES</u> Projec	t Number: <u>B0095010.0005.00001</u>		ers						
Project	t Contact: <u>Kady Yo</u> t	ing C	ompany:	<u>Arcadis</u>			Containers	109					
Compa	Company/Address: <u>189 North Cedar Street</u> Phone: <u>307-203-3510 or 810-588-1488</u>							ead/arsenic 3050B/6010					
City, S	City, State, Zip: Buffalo, WY 82834 FAX: 307-684-5961							nie 3					
Sampler's Signature:						Number	/arse						
	Sample I.D.		Date	Time	LAB ID	Matrix	Z	lead					REMARKS
258-	3-B01-089	2117	8/21/17	1720		S	1	X					
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	B03			1723		S	1	X					
	B04			1724		S	1	X					
	B05			1726		S	1	X					
	B06			1727		S	1	X					
	B07			1728		S	1	X					
	B08			1730		S	1	X					
	B09			1731		S	1	X					
V	/ B10 V	′	V	1733		S	1	Х					
	OUND REQUIREM				REPORT REQUIREMENTS		Comments/Special Instructions:						
	hr 48 hr _	5	day		I. Routine Report: Results, Method Bl	ank,	Hold	Remainde	er				
	tandard (10 days)			•	Surrogate, as required								
	ovide FAX Prelimin	ary Re	sults		II. Report Dup., MS, MSD as required	·							
	d Report Date:				III. Data Validation Report (includes								
	nformation				raw data)								
_	CR-ALS-D34-17.			***************************************	IV. CLP Deliverable Report								
_	Cristy Kessel - Teck				V. EDD								
	Riverpoint Blvd, Suite 3	90 Spoka	ine, WA 992										
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Signature	for to			Signature:									
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Cooler Receipt and Preservation Form

ient	4 rcadi	i/Tee	Ł					ice Req			6897)		
eceived:	8/24/	(7	Opened:_	8/24/	17	Ву:	_iu		Unload	ed:	1/24/17	_ By:	Ш	
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Were cust	ody paper	s properly	filled out	(ink, signed	, etc.)?	`						NA	(Y^{\setminus})	N
Were sam	ples recei	ved in goo	d condition	n (temperatu	ire, unbro	ken)?	Indicat	e in the	table be	low.		NA	Y	N
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Was C12/	Res nega	tive?										NA	Y	N
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Total Solids

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Client: Teck American Incorporated

Service Request: K1708973 **Date Collected:** 08/21/17 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Received:** 08/24/17

Sample Matrix:

Analysis Method:

Soil

160.3 Modified Units: Percent

Prep Method: None Basis: As Received

Solids, Total

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
258-3-A01-082117	K1708973-001	98.3	-	-	1	08/28/17 19:08	
258-3-A02-082117	K1708973-002	97.9	-	-	1	08/28/17 19:08	
258-3-A03-082117	K1708973-003	98.5	-	-	1	08/28/17 19:08	
258-3-A04-082117	K1708973-004	98.1	-	-	1	08/28/17 19:08	
258-3-A05-082117	K1708973-005	98.3	-	-	1	08/28/17 19:08	
258-3-A06-082117	K1708973-006	97.0	-	-	1	08/28/17 19:08	
258-3-A07-082117	K1708973-007	97.6	-	-	1	08/28/17 19:08	
258-3-A08-082117	K1708973-008	97.1	-	-	1	08/28/17 19:08	
258-3-A09-082117	K1708973-009	97.7	-	-	1	08/28/17 19:08	
258-3-A10-082117	K1708973-010	97.8	-	-	1	08/28/17 19:08	
258-3-B01-082117	K1708973-011	97.5	-	-	1	08/28/17 19:08	
258-3-B02-082117	K1708973-012	98.1	-	-	1	08/28/17 19:08	
258-3-B03-082117	K1708973-013	97.9	-	-	1	08/28/17 19:08	
258-3-B04-082117	K1708973-014	98.2	-	-	1	08/28/17 19:08	
258-3-B05-082117	K1708973-015	97.8	-	-	1	08/28/17 19:08	
258-3-B06-082117	K1708973-016	97.4	-	-	1	08/28/17 19:08	
258-3-B07-082117	K1708973-017	98.2	-	-	1	08/28/17 19:08	
258-3-B08-082117	K1708973-018	97.4	-	-	1	08/28/17 19:08	
258-3-B09-082117	K1708973-019	97.2	-	-	1	08/28/17 19:08	
258-3-B10-082117	K1708973-020	98.3	<u> </u>		1	08/28/17 19:08	

QA/QC Report

Client: Teck American Incorporated

Project August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Analysis Method:

160.3 Modified

Prep Method: None

Service Request: K1708973

Date Collected: 08/21/17

Date Received: 08/24/17

Units:Percent

Basis: As Received

Replicate Sample Summary Inorganic Parameters

			Sample	Duplicate			RPD	Date
Sample Name:	Lab Code:	MRL	Result	Result	Average	RPD	Limit	Analyzed
258-3-A01-082117	K1708973-001DUP	-	98.3	98.2	98.3	<1	20	08/28/17
258-3-B01-082117	K1708973-011DUP	_	97.5	97.9	97.7	<1	20	08/28/17

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Printed 09/09/17 10:17:58 AM Superset Reference:17-0000434907 rev 00



Metals

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Client: Teck American Incorporated

Service Request: K1708973 **Date Collected:** 08/21/17 16:58 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 258-3-A01-082117 Basis: Dry

Lab Code: K1708973-001

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 17.1 mg/Kg 3.9 0.8 2 09/06/17 17:58 09/01/17 Lead 6010C 157 mg/Kg2.0 0.4 2 09/06/17 17:58 09/01/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708973 **Date Collected:** 08/21/17 17:01 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 258-3-A02-082117 Basis: Dry

Lab Code: K1708973-002

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 13.6 mg/Kg 3.8 0.8 2 09/06/17 18:08 09/01/17 Lead 6010C **78.5** mg/Kg1.9 0.4 2 09/06/17 18:08 09/01/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708973 **Date Collected:** 08/21/17 17:03 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 258-3-A03-082117 Basis: Dry

Lab Code: K1708973-003

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 9.4 mg/Kg 4.0 0.8 2 09/06/17 18:11 09/01/17 Lead 6010C **79.7** mg/Kg2.0 0.4 2 09/06/17 18:11 09/01/17

Printed 9/7/2017 3:29:28 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708973 **Date Collected:** 08/21/17 17:05 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 258-3-A04-082117 Basis: Dry

Lab Code: K1708973-004

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 11.8 mg/Kg 4.1 0.8 2 09/06/17 18:13 09/01/17 Lead 6010C 165 mg/Kg2.0 0.4 2 09/06/17 18:13 09/01/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708973 **Date Collected:** 08/21/17 17:06 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 258-3-A05-082117 Basis: Dry

Lab Code: K1708973-005

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 8.3 mg/Kg 4.1 0.8 2 09/06/17 18:15 09/01/17 Lead 6010C 109 mg/Kg2.0 0.4 2 09/06/17 18:15 09/01/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708973 **Date Collected:** 08/21/17 17:08 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 258-3-A06-082117 Basis: Dry

Lab Code: K1708973-006

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 14.2 mg/Kg 3.9 0.8 2 09/06/17 18:17 09/01/17 Lead 6010C 205 mg/Kg1.9 0.4 2 09/06/17 18:17 09/01/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708973 **Date Collected:** 08/21/17 17:10 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 258-3-A07-082117 Basis: Dry

Lab Code: K1708973-007

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 9.9 mg/Kg 3.9 0.8 2 09/06/17 18:26 09/01/17 Lead 6010C 126 mg/Kg1.9 0.4 2 09/06/17 18:26 09/01/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708973 **Date Collected:** 08/21/17 17:12 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Date Received: 08/24/17 10:20 **Sample Matrix:** Soil

Sample Name: 258-3-A08-082117 Basis: Dry

Lab Code: K1708973-008

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	Pate Extracted	Q
Arsenic	6010C	15.7	mg/Kg	4.1	0.8	2	09/06/17 18:28	09/01/17	
Lead	6010C	245	mg/Kg	2.1	0.4	2	09/06/17 18:28	09/01/17	

Printed 9/7/2017 3:29:28 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708973 **Date Collected:** 08/21/17 17:14 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 258-3-A09-082117 Basis: Dry

Lab Code: K1708973-009

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 11.9 mg/Kg 3.9 0.8 2 09/06/17 18:31 09/01/17 Lead 6010C **170** mg/Kg1.9 0.4 2 09/06/17 18:31 09/01/17

Analytical Report

Service Request: K1708973

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/21/17 17:15

Sample Matrix: Soil Date Received: 08/24/17 10:20

Sample Name: 258-3-A10-082117 **Basis:** Dry

Lab Code: K1708973-010

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 13.7 mg/Kg 4.0 0.8 2 09/06/17 18:33 09/01/17 Lead 6010C **290** mg/Kg2.0 0.4 2 09/06/17 18:33 09/01/17

Printed 9/7/2017 3:29:28 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708973 **Date Collected:** 08/21/17 17:20 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 258-3-B01-082117 Basis: Dry

Lab Code: K1708973-011

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 14.6 mg/Kg 4.1 0.8 2 09/06/17 18:35 09/01/17 Lead 6010C 145 mg/Kg2.1 0.4 2 09/06/17 18:35 09/01/17

Printed 9/7/2017 3:29:28 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708973 **Date Collected:** 08/21/17 17:21 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 258-3-B02-082117 Basis: Dry

Lab Code: K1708973-012

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 8.5 mg/Kg 4.0 0.8 2 09/06/17 18:37 09/01/17 Lead 6010C 61.9 mg/Kg2.0 0.4 2 09/06/17 18:37 09/01/17

Printed 9/7/2017 3:29:28 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708973 **Date Collected:** 08/21/17 17:23 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 258-3-B03-082117 Basis: Dry

Lab Code: K1708973-013

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 12.6 mg/Kg 4.1 0.8 2 09/06/17 18:40 09/01/17 Lead 6010C 137 mg/Kg2.0 0.4 2 09/06/17 18:40 09/01/17

Printed 9/7/2017 3:29:28 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708973 **Date Collected:** 08/21/17 17:24 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 258-3-B04-082117 Basis: Dry

Lab Code: K1708973-014

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 10.9 mg/Kg 4.0 0.8 2 09/06/17 18:42 09/01/17 Lead 6010C 86.5 mg/Kg2.0 0.4 2 09/06/17 18:42 09/01/17

Printed 9/7/2017 3:29:28 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708973 **Date Collected:** 08/21/17 17:26 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 258-3-B05-082117 Basis: Dry

Lab Code: K1708973-015

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 8.1 mg/Kg 4.0 0.8 2 09/06/17 18:44 09/01/17 Lead 6010C 98.4 mg/Kg2.0 0.4 2 09/06/17 18:44 09/01/17

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Analytical Report

Service Request: K1708973

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/21/17 17:27

Sample Matrix: Soil Date Received: 08/24/17 10:20

Sample Name: 258-3-B06-082117 **Basis:** Dry

Lab Code: K1708973-016

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 21.1 mg/Kg 3.8 0.8 2 09/06/17 18:46 09/01/17 Lead 6010C **371** mg/Kg1.9 0.4 2 09/06/17 18:46 09/01/17

Printed 9/7/2017 3:29:28 PM Superset Reference:

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Analytical Report

Service Request: K1708973

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/21/17 17:28

Sample Matrix: Soil Date Received: 08/24/17 10:20

Sample Name: 258-3-B07-082117 **Basis:** Dry

Lab Code: K1708973-017

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 10.8 mg/Kg 4.0 0.8 2 09/06/17 18:55 09/01/17 Lead 6010C 133 mg/Kg2.0 0.4 2 09/06/17 18:55 09/01/17

Printed 9/7/2017 3:29:29 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708973 **Date Collected:** 08/21/17 17:30 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 258-3-B08-082117 Basis: Dry

Lab Code: K1708973-018

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 22.7 mg/Kg 3.8 0.8 2 09/06/17 18:57 09/01/17 Lead 6010C 688 mg/Kg1.9 0.4 2 09/06/17 18:57 09/01/17

Printed 9/7/2017 3:29:29 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708973 **Date Collected:** 08/21/17 17:31 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 258-3-B09-082117 Basis: Dry

Lab Code: K1708973-019

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 13.4 mg/Kg 4.0 0.8 2 09/06/17 18:59 09/01/17 Lead 6010C 383 mg/Kg2.0 0.4 2 09/06/17 18:59 09/01/17

Printed 9/7/2017 3:29:29 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708973 **Date Collected:** 08/21/17 17:33 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 258-3-B10-082117 Basis: Dry

Lab Code: K1708973-020

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 9.2 mg/Kg 4.0 0.8 2 09/06/17 19:02 09/01/17 Lead 6010C 96.3 mg/Kg2.0 0.4 2 09/06/17 19:02 09/01/17

Analytical Report

Client: Teck American Incorporated **Service Request:** K1708973

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 Date Collected: NA

Sample Matrix:

Soil

Date Received: NA

Sample Name:

Method Blank

Basis: Dry

Lab Code: KQ1712540-02

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	Q	
Arsenic	6010C	ND U	mg/Kg	4	0.8	2	09/06/17 17:47	09/01/17	
Lead	6010C	ND U	mg/Kg	2	0.4	2	09/06/17 17:47	09/01/17	

Printed 9/7/2017 3:29:29 PM Superset Reference:

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QA/QC Report

Client: Teck American Incorporated

August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix:

Soil

K1708973 08/21/17

Date Collected: Date Received:

Service Request:

08/24/17

Date Analyzed: Date Extracted: 09/6/17 09/1/17

Duplicate Matrix Spike Summary

Total Metals

Sample Name:

258-3-A01-082117

Units: Basis: mg/Kg

Dry

Lab Code:

Project:

K1708973-001

Analysis Method: Prep Method:

6010C

EPA 3050B

Matrix Spike KQ1712540-03 **Duplicate Matrix Spike**

KQ1712540-04

	Sample		Spike			Spike		% Rec		RPD
Analyte Name	Result	Result	Amount	% Rec	Result	Amount	% Rec	Limits	RPD	Limit
Arsenic	17.1	105	99.7	88	111	101	93	75-125	5	30
Lead	157	213	99.7	56 N	260	101	102	75-125	20	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Printed 9/7/2017 3:29:29 PM Superset Reference:

QA/QC Report

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Analyzed:** 09/06/17

Sample Matrix: Soil

Lab Control Sample Summary Total Metals

Units:mg/Kg
Basis:Dry

Service Request: K1708973

Lab Control Sample

KQ1712540-01

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Arsenic	6010C	489	500	98	80-120
Lead	6010C	477	500	95	80-120

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ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue Kelso, WA 98626

T:+1 360 577 7222

F: +1 360 636 1068 www.alsglobal.com

September 08, 2017

Analytical Report for Service Request No: K1708974

Dave Enos Teck American Incorporated 501 North Riverpoint Blvd., Suite 300 Spokane, WA 99202

RE: August 2017 Sampling SAT Study / B0095010.0005.00001

Dear Dave.

Enclosed are the results of the sample(s) submitted to our laboratory August 24, 2017 For your reference, these analyses have been assigned our service request number **K1708974**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3330. You may also contact me via email at Jeff.Coronado@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Jeff Coronado

Metals Department

Manager



ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue Kelso, WA 98626

T: +1 360 577 7222 F: +1 360 636 1068 www.alsglobal.com

Table of Contents

Acronyms

Qualifiers

State Certifications, Accreditations, And Licenses

Case Narrative

Chain of Custody

Total Solids

Metals

Acronyms

ASTM American Society for Testing and Materials

A2LA American Association for Laboratory Accreditation

CARB California Air Resources Board

CAS Number Chemical Abstract Service registry Number

CFC Chlorofluorocarbon
CFU Colony-Forming Unit

DEC Department of Environmental Conservation

DEQ Department of Environmental Quality

DHS Department of Health Services

DOE Department of Ecology
DOH Department of Health

EPA U. S. Environmental Protection Agency

ELAP Environmental Laboratory Accreditation Program

GC Gas Chromatography

GC/MS Gas Chromatography/Mass Spectrometry

LOD Limit of Detection
LOQ Limit of Quantitation

LUFT Leaking Underground Fuel Tank

M Modified

MCL Maximum Contaminant Level is the highest permissible concentration of a substance

allowed in drinking water as established by the USEPA.

MDL Method Detection Limit
MPN Most Probable Number
MRL Method Reporting Limit

NA Not Applicable
NC Not Calculated

NCASI National Council of the Paper Industry for Air and Stream Improvement

ND Not Detected

NIOSH National Institute for Occupational Safety and Health

PQL Practical Quantitation Limit

RCRA Resource Conservation and Recovery Act

SIM Selected Ion Monitoring

TPH Total Petroleum Hydrocarbons

tr Trace level is the concentration of an analyte that is less than the PQL but greater than or

equal to the MDL.

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L14-51
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	_
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
	https://deq.nc.gov/about/divisions/water-resources/water-resources-	
	data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-	
North Carolina DEQ	certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaborator	
Oregon – DEQ (NELAP)	yAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.



Case Narrative

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

ALS ENVIRONMENTAL

Client: Teck American Incorporated Service Request No.: K1708974

Project: August 2017 Sampling SAT Study/ Date Received: 08/24/17

B0095010.0005.00001

Sample Matrix: Soil

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

Sample Receipt

Twenty soil samples were received for analysis at ALS Environmental on 08/24/17. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Total Metals

Relative Percent Difference Exceptions:

The Relative Percent Difference (RPD) for the replicate spike analysis of Lead in sample 258-G01-082217 was outside the project specified control limits. The variability in the results was attributed to the heterogeneous distribution of lead in the sample. Standard mixing techniques were used, but were not sufficient for complete homogenization of this sample.

Matrix Spike Recovery Exceptions:

The matrix spike recoveries of Lead for sample 258-G01-082217 were outside the project specified control criteria as a result of the heterogeneous character of the sample. The Relative Percent Difference (RPD) for the replicate analysis supported this. Since the unspiked sample contained high analyte concentrations relative to the amount spiked, the variability between replicates was sufficient to bias the percent recoveries outside the control criteria. The associated QA/QC results (e.g. control sample, calibration standards, etc.) indicated the analysis was in control. No further corrective action was appropriate.

No other anomalies associated with the analysis of these samples were observed.

Approved by



Chain of Custody

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068



Date 8/23/17
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	G07			1035		S	1	X					
	G108			1036		S	1	X					
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ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

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Bill to: Cristy Kessel - Teck American X V. EDD 501 N Riverpoint Blvd, Suite 300 Spokane, WA 9920													
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7/25/16

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Total Solids

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Client: Teck American Incorporated

Service Request: K1708974 **Date Collected:** 08/22/17 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Received:** 08/24/17

Sample Matrix: Soil

Analysis Method:

160.3 Modified

Prep Method: None Units: Percent Basis: As Received

Solids, Total

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
258-3-G01-082217	K1708974-001	94.9	-	-	1	08/31/17 16:53	
258-3-G02-082217	K1708974-002	96.0	-	-	1	08/31/17 16:53	
258-3-G03-082217	K1708974-003	97.3	-	-	1	08/31/17 16:53	
258-3-G04-082217	K1708974-004	96.5	-	-	1	08/31/17 16:53	
258-3-G05-082217	K1708974-005	96.1	-	-	1	08/31/17 16:53	
258-3-G06-082217	K1708974-006	97.4	-	-	1	08/31/17 16:53	
258-3-G07-082217	K1708974-007	97.1	-	-	1	08/31/17 16:53	
258-3-G08-082217	K1708974-008	97.8	-	-	1	08/31/17 16:53	
258-3-G09-082217	K1708974-009	98.9	-	-	1	08/31/17 16:53	
258-3-G10-082217	K1708974-010	98.9	-	-	1	08/31/17 16:53	
258-3-H01-082217	K1708974-011	90.7	-	-	1	08/31/17 16:53	
258-3-H02-082217	K1708974-012	92.7	-	-	1	08/31/17 16:53	
258-3-H03-082217	K1708974-013	86.2	-	-	1	08/31/17 16:53	
258-3-H04-082217	K1708974-014	96.3	-	-	1	08/31/17 16:53	
258-3-H05-082217	K1708974-015	97.2	-	-	1	08/31/17 16:53	
258-3-H06-082217	K1708974-016	97.2	-	-	1	08/31/17 16:53	_
258-3-H07-082217	K1708974-017	97.4	-	-	1	08/31/17 16:53	
258-3-H08-082217	K1708974-018	97.9	-	-	1	08/31/17 16:53	
258-3-H09-082217	K1708974-019	98.7	-	-	1	08/31/17 16:53	
258-3-H10-082217	K1708974-020	98.4	-	-	1	08/31/17 16:53	

QA/QC Report

Client: Teck American Incorporated

Project August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix:

Soil

Service Request:K1708974 Date Collected: 08/22/17

Date Received: 08/24/17

Units:Percent

Analysis Method: 160.3 Modified

Prep Method: None Basis: As Received

Replicate Sample Summary Inorganic Parameters

~			Sample	Duplicate			RPD	Date
Sample Name:	Lab Code:	MRL	Result	Result	Average	RPD	Limit	Analyzed
258-3-G02-082217	K1708974-002DUP	-	96.0	96.6	96.3	<1	20	08/31/17
258-3-H02-082217	K1708974-012DUP	_	92.7	93.0	92.9	<1	20	08/31/17

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Printed 09/09/17 10:20:35 AM Superset Reference:17-0000435532 rev 00



Metals

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Client: Teck American Incorporated

Service Request: K1708974 **Date Collected:** 08/22/17 10:22 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 258-3-G01-082217 Basis: Dry

Lab Code: K1708974-001

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q 12.5 Arsenic 6010C mg/Kg 4.0 0.8 2 09/06/17 19:08 09/05/17 Lead 6010C 178 mg/Kg2.0 0.4 2 09/06/17 19:08 09/05/17

Printed 9/7/2017 3:37:49 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708974 **Date Collected:** 08/22/17 10:24 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 258-3-G02-082217 Basis: Dry

Lab Code: K1708974-002

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 14.8 mg/Kg 4.0 0.8 2 09/06/17 19:25 09/05/17 Lead 6010C 2350 mg/Kg2.0 0.4 2 09/06/17 19:25 09/05/17

Printed 9/7/2017 3:37:49 PM Superset Reference:

Analytical Report

Service Request: K1708974

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/22/17 10:27

Sample Matrix: Soil Date Received: 08/24/17 10:20

Sample Name: 258-3-G03-082217 **Basis:** Dry

Lab Code: K1708974-003

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 11.5 mg/Kg 3.9 0.8 2 09/06/17 19:27 09/05/17 Lead 6010C 91.9 mg/Kg2.0 0.4 2 09/06/17 19:27 09/05/17

Printed 9/7/2017 3:37:49 PM Superset Reference:

Analytical Report

Client: Teck American Incorporated

Service Request: K1708974 **Date Collected:** 08/22/17 10:29 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 258-3-G04-082217 Basis: Dry

Lab Code: K1708974-004

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 11.2 mg/Kg 3.8 0.8 2 09/06/17 19:30 09/05/17 Lead 6010C 90.3 mg/Kg1.9 0.4 2 09/06/17 19:30 09/05/17

Printed 9/7/2017 3:37:49 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708974 **Date Collected:** 08/22/17 10:31 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 258-3-G05-082217 Basis: Dry

Lab Code: K1708974-005

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 18.6 mg/Kg 4.1 0.8 2 09/06/17 19:32 09/05/17 Lead 6010C **170** mg/Kg2.0 0.4 2 09/06/17 19:32 09/05/17

Printed 9/7/2017 3:37:49 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708974 **Date Collected:** 08/22/17 10:33 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 258-3-G06-082217 Basis: Dry

Lab Code: K1708974-006

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 11.4 mg/Kg 4.1 0.8 2 09/06/17 19:34 09/05/17 Lead 6010C 109 mg/Kg2.0 0.4 2 09/06/17 19:34 09/05/17

Printed 9/7/2017 3:37:49 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708974 **Date Collected:** 08/22/17 10:35 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 258-3-G07-082217 Basis: Dry

Lab Code: K1708974-007

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 14.7 mg/Kg 4.1 0.8 2 09/06/17 19:36 09/05/17 Lead 6010C 249 mg/Kg2.0 0.4 2 09/06/17 19:36 09/05/17

Printed 9/7/2017 3:37:49 PM Superset Reference:

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Analytical Report

Service Request: K1708974

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/22/17 10:36

Sample Matrix: Soil Date Received: 08/24/17 10:20

Sample Name: 258-3-G08-082217 **Basis:** Dry

Lab Code: K1708974-008

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 20.2 mg/Kg 4.0 0.8 2 09/06/17 19:38 09/05/17 Lead 6010C 154 mg/Kg2.0 0.4 2 09/06/17 19:38 09/05/17

Printed 9/7/2017 3:37:49 PM Superset Reference:

Analytical Report

Client: Teck American Incorporated

Service Request: K1708974 **Date Collected:** 08/22/17 10:39 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 258-3-G09-082217 Basis: Dry

Lab Code: K1708974-009

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 7.9 mg/Kg 3.9 0.8 2 09/06/17 19:40 09/05/17 Lead 6010C 27.5 mg/Kg2.0 0.4 2 09/06/17 19:40 09/05/17

Printed 9/7/2017 3:37:49 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708974 **Date Collected:** 08/22/17 10:41 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 258-3-G10-082217 Basis: Dry

Lab Code: K1708974-010

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 7.6 mg/Kg 3.8 0.8 2 09/06/17 19:43 09/05/17 Lead 6010C 74.9 mg/Kg1.9 0.4 2 09/06/17 19:43 09/05/17

Printed 9/7/2017 3:37:49 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708974 **Date Collected:** 08/22/17 10:44 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 258-3-H01-082217 Basis: Dry

Lab Code: K1708974-011

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 19.1 mg/Kg 4.2 0.8 2 09/06/17 19:51 09/05/17 Lead 6010C 999 mg/Kg2.1 0.4 2 09/06/17 19:51 09/05/17

Printed 9/7/2017 3:37:49 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708974 **Date Collected:** 08/22/17 10:47 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 258-3-H02-082217 Basis: Dry

Lab Code: K1708974-012

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 21.3 mg/Kg 4.3 0.9 2 09/06/17 19:53 09/05/17 Lead 6010C 342 mg/Kg2.1 0.4 2 09/06/17 19:53 09/05/17

Printed 9/7/2017 3:37:49 PM Superset Reference:

Analytical Report

Client: Teck American Incorporated

Service Request: K1708974 **Date Collected:** 08/22/17 10:49 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 258-3-H03-082217 Basis: Dry

Lab Code: K1708974-013

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 8.0 mg/Kg 4.4 0.9 2 09/06/17 19:56 09/05/17 Lead 6010C 198 mg/Kg2.2 0.4 2 09/06/17 19:56 09/05/17

Printed 9/7/2017 3:37:49 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708974 **Date Collected:** 08/22/17 10:51 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 258-3-H04-082217 Basis: Dry

Lab Code: K1708974-014

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 12.1 mg/Kg 4.1 0.8 2 09/06/17 19:58 09/05/17 Lead 6010C 169 mg/Kg2.0 0.4 2 09/06/17 19:58 09/05/17

Printed 9/7/2017 3:37:50 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708974 **Date Collected:** 08/22/17 10:52 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 258-3-H05-082217 Basis: Dry

Lab Code: K1708974-015

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 11.5 mg/Kg 4.0 0.8 2 09/06/17 20:00 09/05/17 Lead 6010C 155 mg/Kg2.0 0.4 2 09/06/17 20:00 09/05/17

Printed 9/7/2017 3:37:50 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708974 **Date Collected:** 08/22/17 10:54 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 258-3-H06-082217 Basis: Dry

Lab Code: K1708974-016

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 17.0 mg/Kg 3.8 0.8 2 09/06/17 20:02 09/05/17 Lead 6010C 225 mg/Kg1.9 0.4 2 09/06/17 20:02 09/05/17

Printed 9/7/2017 3:37:50 PM Superset Reference:

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Analytical Report

Service Request: K1708974

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/22/17 10:56

Sample Matrix: Soil Date Received: 08/24/17 10:20

Sample Name: 258-3-H07-082217 **Basis:** Dry

Lab Code: K1708974-017

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 15.2 mg/Kg 3.9 0.8 2 09/06/17 20:04 09/05/17 Lead 6010C 188 mg/Kg2.0 0.4 2 09/06/17 20:04 09/05/17

Printed 9/7/2017 3:37:50 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708974 **Date Collected:** 08/22/17 10:58 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 258-3-H08-082217 Basis: Dry

Lab Code: K1708974-018

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 12.6 mg/Kg 3.9 0.8 2 09/06/17 20:06 09/05/17 Lead 6010C **150** mg/Kg2.0 0.4 2 09/06/17 20:06 09/05/17

Printed 9/7/2017 3:37:50 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708974 **Date Collected:** 08/22/17 11:00 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Date Received: 08/24/17 10:20

Sample Name: 258-3-H09-082217 Basis: Dry

Lab Code: K1708974-019

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	Pate Extracted	Q
Arsenic	6010C	7.6	mg/Kg	4.0	0.8	2	09/06/17 20:09	09/05/17	
Lead	6010C	85.4	mg/Kg	2.0	0.4	2	09/06/17 20:09	09/05/17	

Printed 9/7/2017 3:37:50 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708974 **Date Collected:** 08/22/17 11:01 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 258-3-H10-082217 Basis: Dry

Lab Code: K1708974-020

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 7.5 mg/Kg 3.9 0.8 2 09/06/17 20:11 09/05/17 Lead 6010C **85.0** mg/Kg2.0 0.4 2 09/06/17 20:11 09/05/17

Printed 9/7/2017 3:37:50 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708974

Date Collected: NA **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001 **Sample Matrix:** Soil Date Received: NA

Sample Name: Method Blank Basis: Dry

Lab Code: KQ1712541-02

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C ND U mg/Kg 4 0.8 2 09/06/17 19:04 09/05/17 Lead 6010C ND U mg/Kg2 0.4 2 09/06/17 19:04 09/05/17

Printed 9/7/2017 3:37:50 PM Superset Reference:

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QA/QC Report

Client: Teck American Incorporated

August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Project:

Service Request: Date Collected:

K1708974

Date Received:

08/22/17 08/24/17

Date Analyzed:

09/6/17

Date Extracted:

09/5/17

Duplicate Matrix Spike Summary

Total Metals

Sample Name: 258-3-G01-082217 Lab Code:

K1708974-001

Units: mg/Kg

Basis: Dry

Analysis Method: Prep Method:

6010C

EPA 3050B

Matrix Spike KQ1712541-03 **Duplicate Matrix Spike**

KQ1712541-04

	Sample		Spike			Spike		% Rec		RPD
Analyte Name	Result	Result	Amount	% Rec	Result	Amount	% Rec	Limits	RPD	Limit
Arsenic	12.5	111	101	97	106	99.4	94	75-125	5	30
Lead	178	405	101	225 N	2020	99.4	1855 N	75-125	133 *	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Printed 9/7/2017 3:37:50 PM Superset Reference:

QA/QC Report

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Lab Control Sample Summary
Total Metals

Units:mg/Kg
Basis:Dry

Service Request: K1708974

Date Analyzed: 09/06/17

Lab Control Sample

KQ1712541-01

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Arsenic	6010C	476	500	95	80-120
Lead	6010C	466	500	93	80-120

Printed 9/7/2017 3:37:50 PM Superset Reference:



ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue Kelso, WA 98626

T:+1 360 577 7222

F: +1 360 636 1068 www.alsglobal.com

September 12, 2017

Analytical Report for Service Request No: K1708975

Dave Enos Teck American Incorporated 501 North Riverpoint Blvd., Suite 300 Spokane, WA 99202

RE: August 2017 Sampling SAT Study / B0095010.0005.00001

Dear Dave.

Enclosed are the results of the sample(s) submitted to our laboratory August 24, 2017 For your reference, these analyses have been assigned our service request number **K1708975**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3330. You may also contact me via email at Jeff.Coronado@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Jeff Coronado Metals Department Manager

RIGHT SOLUTIONS | RIGHT PARTNER



ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue Kelso, WA 98626

T: +1 360 577 7222 F: +1 360 636 1068 www.alsglobal.com

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Acronyms

ASTM American Society for Testing and Materials

A2LA American Association for Laboratory Accreditation

CARB California Air Resources Board

CAS Number Chemical Abstract Service registry Number

CFC Chlorofluorocarbon
CFU Colony-Forming Unit

DEC Department of Environmental Conservation

DEQ Department of Environmental Quality

DHS Department of Health Services

DOE Department of Ecology
DOH Department of Health

EPA U. S. Environmental Protection Agency

ELAP Environmental Laboratory Accreditation Program

GC Gas Chromatography

GC/MS Gas Chromatography/Mass Spectrometry

LOD Limit of Detection
LOQ Limit of Quantitation

LUFT Leaking Underground Fuel Tank

M Modified

MCL Maximum Contaminant Level is the highest permissible concentration of a substance

allowed in drinking water as established by the USEPA.

MDL Method Detection Limit
MPN Most Probable Number
MRL Method Reporting Limit

NA Not Applicable
NC Not Calculated

NCASI National Council of the Paper Industry for Air and Stream Improvement

ND Not Detected

NIOSH National Institute for Occupational Safety and Health

PQL Practical Quantitation Limit

RCRA Resource Conservation and Recovery Act

SIM Selected Ion Monitoring

TPH Total Petroleum Hydrocarbons

tr Trace level is the concentration of an analyte that is less than the PQL but greater than or

equal to the MDL.

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L14-51
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	_
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
	https://deq.nc.gov/about/divisions/water-resources/water-resources-	
	data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-	
North Carolina DEQ	certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaborator	
Oregon – DEQ (NELAP)	yAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.



Case Narrative

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

ALS ENVIRONMENTAL

Client: Teck American Incorporated Service Request No.: K1708975

Project: August 2017 Sampling SAT Study/ Date Received: 08/24/17

B0095010.0005.00001

Sample Matrix: Soil

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

Sample Receipt

Twenty soil samples were received for analysis at ALS Environmental on 08/24/17. The samples were received in good condition and consistent with the accompanying chain of custody form, except where noted on the cooler receipt and preservation form included in this report. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Total Metals

No anomalies associated with the analysis of these samples were observed.

Approved by



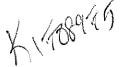
Chain of Custody

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068



Date 8/23//7
PAGE /3 OF /5

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	104				1126		S	1	X					
	L05				1128		S	1	X					
	I06				1129		S	1	·X					
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ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

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Date 8 /23 / 17
PAGE 14 OF 5
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Were VOA vi	als received w	ithout heads	space? Indica	te in the	table b	elow.				NA	Y	N
Was C12/Res	negative?									NA	Y	N
Sample	ID on Bottle		Sai	mple ID o	n COC				Identified b	y :		
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											- NA	
tes, Discrepa	icies, & Reso	lutions:_										
				3								

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Total Solids

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Client: Teck American Incorporated

Service Request: K1708975 **Date Collected:** 08/22/17 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix:

Analysis Method:

Soil

160.3 Modified

Prep Method: None **Date Received:** 08/24/17 Units: Percent

Basis: As Received

Solids, Total

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
258-3-I01-082217	K1708975-001	93.8	-	-	1	08/31/17 16:53	
258-3-I02-082217	K1708975-002	94.3	-	-	1	08/31/17 16:53	
258-3-I03-082217	K1708975-003	92.4	-	-	1	08/31/17 16:53	
258-3-I04-082217	K1708975-004	96.5	-	-	1	08/31/17 16:53	
258-3-I05-082217	K1708975-005	97.5	-	-	1	08/31/17 16:53	
258-3-I06-082217	K1708975-006	98.5	-	-	1	08/31/17 16:53	
258-3-I07-082217	K1708975-007	94.0	-	-	1	08/31/17 16:53	
258-3-I08-082217	K1708975-008	97.4	-	-	1	08/31/17 16:53	
258-3-I09-082217	K1708975-009	95.2	-	-	1	08/31/17 16:53	
258-3-I10-082217	K1708975-010	95.3	-	-	1	08/31/17 16:53	
258-3-J01-082217	K1708975-011	94.6	-	-	1	08/31/17 16:53	
258-3-J02-082217	K1708975-012	95.1	-	-	1	08/31/17 16:53	
258-3-J03-082217	K1708975-013	94.8	-	-	1	08/31/17 16:53	
258-3-J04-082217	K1708975-014	95.3	-	-	1	08/31/17 16:53	
258-3-J05-082217	K1708975-015	96.9	-	-	1	08/31/17 16:53	
258-3-J06-082217	K1708975-016	97.6	-	-	1	08/31/17 16:53	
258-3-J07-082217	K1708975-017	96.8	-	-	1	08/31/17 16:53	
258-3-J08-082217	K1708975-018	97.5	-	-	1	08/31/17 16:53	
258-3-J09-082217	K1708975-019	96.1	-	-	1	08/31/17 16:53	
258-3-J10-082217	K1708975-020	96.6	-	-	1	08/31/17 16:53	

QA/QC Report

Client: Teck American Incorporated

Project August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Analysis Method:

160.3 Modified

Prep Method: None

Service Request: K1708975 Date Collected: 08/22/17

Date Received: 08/24/17

Units:Percent

Basis: As Received

Replicate Sample Summary Inorganic Parameters

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Dogult	Awamaga	RPD	RPD Limit	Date
Sample Name.	Lab Couc.	WIKL	Resuit	Result	Average	KPD	LIIIII	Analyzed
258-3-I01-082217	K1708975-001DUP	-	93.8	94.8	94.3	1	20	08/31/17
258-3-J01-082217	K1708975-011DUP	-	94.6	94.6	94.6	<1	20	08/31/17

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Printed 09/12/17 5:01:52 PM Superset Reference:17-0000435533 rev 00



Metals

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Client: Teck American Incorporated

Service Request: K1708975 **Date Collected:** 08/22/17 11:20 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Date Received: 08/24/17 10:20 **Sample Matrix:** Soil

Sample Name: 258-3-I01-082217 Basis: Dry

Lab Code: K1708975-001

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	Pate Extracted	Q
Arsenic	6010C	15.2	mg/Kg	4.1	0.8	2	09/07/17 10:25	09/05/17	
Lead	6010C	532	mg/Kg	2.0	0.4	2	09/07/17 10:25	09/05/17	

Analytical Report

Client: Teck American Incorporated

Service Request: K1708975 **Date Collected:** 08/22/17 11:22 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Date Received: 08/24/17 10:20 **Sample Matrix:** Soil

Sample Name: 258-3-I02-082217 Basis: Dry

Lab Code: K1708975-002

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	Oate Extracted	Q
Arsenic	6010C	12.1	mg/Kg	4.2	0.8	2	09/07/17 10:36	09/05/17	
Lead	6010C	223	mg/Kg	2.1	0.4	2	09/07/17 10:36	09/05/17	

Analytical Report

Client: Teck American Incorporated

Service Request: K1708975 **Date Collected:** 08/22/17 11:24 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 258-3-I03-082217 Basis: Dry

Lab Code: K1708975-003

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q 22.9 Arsenic 6010C mg/Kg 4.2 0.8 2 09/07/17 10:38 09/05/17 Lead 6010C **598** mg/Kg2.1 0.4 2 09/07/17 10:38 09/05/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708975 **Date Collected:** 08/22/17 11:26 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 258-3-I04-082217 Basis: Dry

Lab Code: K1708975-004

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 13.6 mg/Kg 4.1 0.8 2 09/07/17 10:41 09/05/17 Lead 6010C 231 mg/Kg2.0 0.4 2 09/07/17 10:41 09/05/17

Printed 9/8/2017 12:18:22 PM Superset Reference:

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Analytical Report

Service Request: K1708975

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/22/17 11:28

Sample Matrix: Soil Date Received: 08/24/17 10:20

Sample Name: 258-3-I05-082217 **Basis:** Dry

Lab Code: K1708975-005

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 9.9 mg/Kg 4.1 0.8 2 09/07/17 10:49 09/05/17 Lead 6010C 124 mg/Kg2.1 0.4 2 09/07/17 10:49 09/05/17

Analytical Report

Service Request: K1708975

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/22/17 11:29

Sample Matrix: Soil Date Received: 08/24/17 10:20

Sample Name: 258-3-I06-082217 **Basis:** Dry

Lab Code: K1708975-006

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 4.4 mg/Kg 3.9 0.8 2 09/07/17 10:51 09/05/17 Lead 6010C 31.9 mg/Kg2.0 0.4 2 09/07/17 10:51 09/05/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708975 **Date Collected:** 08/22/17 11:31 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 258-3-I07-082217 Basis: Dry

Lab Code: K1708975-007

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 21.0 mg/Kg 4.2 0.8 2 09/07/17 10:54 09/05/17 Lead 6010C 426 mg/Kg2.1 0.4 2 09/07/17 10:54 09/05/17

Analytical Report

Service Request: K1708975

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/22/17 11:33

Sample Matrix: Soil Date Received: 08/24/17 10:20

Sample Name: 258-3-I08-082217 **Basis:** Dry

Lab Code: K1708975-008

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 13.3 mg/Kg 3.9 0.8 2 09/07/17 10:56 09/05/17 Lead 6010C 249 mg/Kg2.0 0.4 2 09/07/17 10:56 09/05/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708975 **Date Collected:** 08/22/17 11:35 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 258-3-I09-082217 Basis: Dry

Lab Code: K1708975-009

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 13.3 mg/Kg 4.2 0.8 2 09/07/17 10:58 09/05/17 Lead 6010C **516** mg/Kg2.1 0.4 2 09/07/17 10:58 09/05/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708975 **Date Collected:** 08/22/17 11:37 August 2017 Sampling SAT Study/B0095010.0005.00001

Project: Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 258-3-I10-082217 Basis: Dry

Lab Code: K1708975-010

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 20.8 mg/Kg 4.0 0.8 2 09/07/17 11:00 09/05/17 Lead 6010C 412 mg/Kg2.0 0.4 2 09/07/17 11:00 09/05/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708975 **Date Collected:** 08/22/17 11:41 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 258-3-J01-082217 Basis: Dry

Lab Code: K1708975-011

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 21.4 mg/Kg 4.2 0.8 2 09/07/17 11:02 09/05/17 Lead 6010C **796** mg/Kg2.1 0.4 2 09/07/17 11:02 09/05/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708975 **Date Collected:** 08/22/17 11:44 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 258-3-J02-082217 Basis: Dry

Lab Code: K1708975-012

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 16.8 mg/Kg 4.1 0.8 2 09/07/17 11:05 09/05/17 Lead 6010C 364 mg/Kg2.1 0.4 2 09/07/17 11:05 09/05/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708975 **Date Collected:** 08/22/17 11:46 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Date Received: 08/24/17 10:20

Sample Name: 258-3-J03-082217 Basis: Dry

Lab Code: K1708975-013

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	ate Extracted	Q
Arsenic	6010C	17.6	mg/Kg	4.2	0.8	2	09/07/17 11:07	09/05/17	
Lead	6010C	548	mg/Kg	2.1	0.4	2.	09/07/17 11:07	09/05/17	

Analytical Report

Client: Teck American Incorporated

Project:

Service Request: K1708975 **Date Collected:** 08/22/17 11:49 August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 258-3-J04-082217 Basis: Dry

Lab Code: K1708975-014

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 13.9 mg/Kg 4.0 0.8 2 09/07/17 11:09 09/05/17 Lead 6010C 231 mg/Kg2.0 0.4 2 09/07/17 11:09 09/05/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708975 **Date Collected:** 08/22/17 11:50 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Date Received: 08/24/17 10:20

Sample Name: 258-3-J05-082217 Basis: Dry

Lab Code: K1708975-015

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	ate Extracted	Q
Arsenic	6010C	12.4	mg/Kg	4.0	0.8	2	09/07/17 11:18	09/05/17	
Lead	6010C	179	mo/Ko	2.0	0.4	2	09/07/17 11:18	09/05/17	

Analytical Report

Service Request: K1708975

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/22/17 11:53

Sample Matrix: Soil Date Received: 08/24/17 10:20

Sample Name: 258-3-J06-082217 **Basis:** Dry

Lab Code: K1708975-016

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 12.7 mg/Kg 4.1 0.8 2 09/07/17 11:20 09/05/17 Lead 6010C 211 mg/Kg2.0 0.4 2 09/07/17 11:20 09/05/17

Analytical Report

Service Request: K1708975

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/22/17 11:56

Sample Matrix: Soil Date Received: 08/24/17 10:20

Sample Name: 258-3-J07-082217 **Basis:** Dry

Lab Code: K1708975-017

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 13.9 mg/Kg 3.9 0.8 2 09/07/17 11:22 09/05/17 Lead 6010C 237 mg/Kg1.9 0.4 2 09/07/17 11:22 09/05/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708975 **Date Collected:** 08/22/17 11:58 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 258-3-J08-082217 Basis: Dry

Lab Code: K1708975-018

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 14.7 mg/Kg 4.1 0.8 2 09/07/17 11:24 09/05/17 Lead 6010C 192 mg/Kg2.0 0.4 2 09/07/17 11:24 09/05/17

Analytical Report

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix:

Lab Code:

Soil

Date Collected: 08/22/17 12:00

Date Received: 08/24/17 10:20

Sample Name: 258-3-J09-082217

K1708975-019

Basis: Dry

Service Request: K1708975

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	ate Extracted	Q
Arsenic	6010C	13.6	mg/Kg	4.1	0.8	2	09/07/17 11:26	09/05/17	
Lead	6010C	297	mg/Kg	2.1	0.4	2	09/07/17 11:26	09/05/17	

Analytical Report

Service Request: K1708975

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/22/17 12:02

Sample Matrix: Soil Date Received: 08/24/17 10:20

Sample Name: 258-3-J10-082217 **Basis:** Dry

Lab Code: K1708975-020

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 9.3 mg/Kg 4.1 0.8 2 09/07/17 11:28 09/05/17 Lead 6010C 142 mg/Kg2.0 0.4 2 09/07/17 11:28 09/05/17

Printed 9/8/2017 12:18:23 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708975

Project: August 2017 Sampling SAT Study/B0095010.0005.00001

Date Collected: NA

Sample Matrix: Soil

Date Received: NA

Sumple matrix.

Sample Name:

Method Blank

Basis: Dry

Lab Code: KQ1712551-02

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed I	ate Extracted	Q
Arsenic	6010C	ND U	mg/Kg	4	0.8	2	09/07/17 10:21	09/05/17	
Lead	6010C	ND U	mg/Kg	2	0.4	2	09/07/17 10:21	09/05/17	

QA/QC Report

Client: Teck American Incorporated

August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Service Request: Date Collected: K1708975

Data Dandund.

08/22/17

Date Received: Date Analyzed: 08/24/17

Date Extracted:

09/7/17 09/5/17

Duplicate Matrix Spike Summary

Total Metals

Sample Name:

258-3-I01-082217

Units:

Basis:

mg/Kg Dry

Lab Code: Analysis Method:

Project:

K1708975-001

Prep Method:

6010C

EPA 3050B

Matrix Spike

Duplicate Matrix Spike

KQ1712551-03

KQ1712551-04

	Sample		Spike			Spike		% Rec		RPD
Analyte Name	Result	Result	Amount	% Rec	Result	Amount	% Rec	Limits	RPD	Limit
Arsenic	15.2	116	106	95	117	107	96	75-125	<1	30
Lead	532	633	106	96#	623	107	85 #	75-125	2	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

QA/QC Report

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Service Request: K1708975 **Date Analyzed:** 09/07/17

Lab Control Sample Summary Total Metals

> Units:mg/Kg Basis:Dry

Lab Control Sample

KQ1712551-01

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Arsenic	6010C	481	500	96	80-120
Lead	6010C	474	500	95	80-120



ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue Kelso, WA 98626

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September 12, 2017

Analytical Report for Service Request No: K1708976

Dave Enos Teck American Incorporated 501 North Riverpoint Blvd., Suite 300 Spokane, WA 99202

RE: August 2017 Sampling SAT Study / B0095010.0005.00001

Dear Dave.

Enclosed are the results of the sample(s) submitted to our laboratory August 25, 2017 For your reference, these analyses have been assigned our service request number **K1708976**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3330. You may also contact me via email at Jeff.Coronado@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Jeff Coronado Metals Department

Manager



ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue Kelso, WA 98626

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Table of Contents

Acronyms

Qualifiers

State Certifications, Accreditations, And Licenses

Case Narrative

Chain of Custody

Total Solids

Metals

Acronyms

ASTM American Society for Testing and Materials

A2LA American Association for Laboratory Accreditation

CARB California Air Resources Board

CAS Number Chemical Abstract Service registry Number

CFC Chlorofluorocarbon
CFU Colony-Forming Unit

DEC Department of Environmental Conservation

DEQ Department of Environmental Quality

DHS Department of Health Services

DOE Department of Ecology
DOH Department of Health

EPA U. S. Environmental Protection Agency

ELAP Environmental Laboratory Accreditation Program

GC Gas Chromatography

GC/MS Gas Chromatography/Mass Spectrometry

LOD Limit of Detection
LOQ Limit of Quantitation

LUFT Leaking Underground Fuel Tank

M Modified

MCL Maximum Contaminant Level is the highest permissible concentration of a substance

allowed in drinking water as established by the USEPA.

MDL Method Detection Limit
MPN Most Probable Number
MRL Method Reporting Limit

NA Not Applicable
NC Not Calculated

NCASI National Council of the Paper Industry for Air and Stream Improvement

ND Not Detected

NIOSH National Institute for Occupational Safety and Health

PQL Practical Quantitation Limit

RCRA Resource Conservation and Recovery Act

SIM Selected Ion Monitoring

TPH Total Petroleum Hydrocarbons

tr Trace level is the concentration of an analyte that is less than the PQL but greater than or

equal to the MDL.

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L14-51
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	_
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
	https://deq.nc.gov/about/divisions/water-resources/water-resources-	
	data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-	
North Carolina DEQ	certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaborator	
Oregon – DEQ (NELAP)	yAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.



Case Narrative

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

ALS ENVIRONMENTAL

Client: Teck American Incorporated Service Request No.: K1708976

Project: August 2017 Sampling SAT Study/ Date Received: 08/24/17

B0095010.0005.00001

Sample Matrix: Soil

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

Sample Receipt

Thirteen soil samples were received for analysis at ALS Environmental on 08/24/17. The samples were received in good condition and consistent with the accompanying chain of custody form, except where noted on the cooler receipt and preservation form included in this report. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Total Metals

No anomalies associated with the analysis of these samples were observed.

Approved by



Chain of Custody

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

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(360) 577-7222 FAX (360) 636-1068

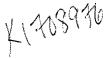


Date 8/23//7
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	Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001											Analys	is Reques	ted	
Proj	ect Name:	Teck Ar	nerican -	· UCR	<u>SAT</u>	<u>ES</u> Projec	t Number: <u>B0095010.0005.00001</u>		SL						
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Com	pany/Addr	ess: <u>189</u>	North Co	edar St	reet	Phone: <u>30</u>	7-203-3510 or 810-588-1488	1	f Containers	ead/arsenic 3050B/6010					
City,	State, Zip:	Buffalo.	WY 828	<u>834</u> FA	X: <u>3</u>	<u>07-684-596</u>	<u>51</u>		er of	nie (j			
Sam	pler's Signa	ture:							Number	/arse					
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	Col	?				0906		S	1	X					
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	C08	}				0910		S	1	X					
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rurn.	AROUND R	EQUIR	EMENT	S			REPORT REQUIREMENTS		Com	nents/Spe	cial Instru	ctions:			
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•	Provide FA		ninary R	esults			II. Report Dup., MS, MSD as required								
	sted Report						III. Data Validation Report (includes								
	e Informati						raw data)								
	UCR-ALS-						IV. CLP Deliverable Report								
	Cristy Kes					X	V. EDD								
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1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068



Date 8/23/17
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SR#

									Analys	is Request	ed	
Project Name: <u>Teck American</u> - 1	UCR SATI	ES Project	Number: <u>B0095010.0005.00001</u>		ers							
Project Contact: Kady Young Co	ompany: <u>A</u>	rcadis			tain	109						
Company/Address: 189 North Ced	lar Street	Phone: <u>30'</u>	7-203-3510 or 810-588-1488		Containers	ead/arsenic 3050B/6010						
City State Zine Buffale WV 9292	M FAV. 2	07 694 E06	1		Jo	c 30						
City, State, Zip: <u>Buffalo, WY 8283</u>		<i>07-</i> 084-590	<u>.</u>		ber	seni						
Sampler's Signature:					Number	d/ar						İ
Sample I.D.	Date	Time	LAB ID	Matrix		lea					REMARKS	
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24 hr 48 hr 5 X Standard (10 days)	day		I. Routine Report: Results, Method Bl Surrogate, as required	ank,	Hold	Remainde	er					I
Provide FAX Preliminary Res	sulto .	v	II. Report Dup., MS, MSD as required									- 1
Requested Report Date:	suits		III. Data Validation Report (includes									
Invoice Information		-	raw data)									
P.O. # <u>UCR-ALS-D34-17</u>			IV. CLP Deliverable Report	ĺ								1
Bill to: Cristy Kessel - Teck America	an		V. EDD									
501 N Riverpoint Blvd, Suite 300 Spoka	ne, WA 9920											1
RELINQUISHAD BY:		RECEIVE	D BY:		RELI	NQUISHI	ED BY:		1	RECEIVE	D BY:	\neg
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Date/Time: 8/23/17 130	ව	Date/Time:	8/24/17 1020					······································				

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068



Date 8/23/17
PAGE 12 OF 15

									Analys	is Reques	ted
Project Name: <u>Teck American -</u>	UCR SAT	<u>ES</u> Projec	t Number: <u>B0095010.0005.00001</u>		srs						
Project Contact: Kady Young C	отрапу: <u>А</u>	rcadis			Containers	,601					
Company/Address: 189 North Ce	dar Street	Phone: <u>30</u>	7-203-3510 or 810-588-1488		•	ead/arsenic 3050B/6010			,		
City, State, Zip: Buffalo, WY 828	<u>34</u> FAX: <u>3</u>	07-684-596	<u>51</u>		er of	snic 3					
Sampler's Signature:					Number	l/arse					
Sample I.D.	Date	Time	LAB ID	Matrix		leac					REMARKS
258-3-H07-082217-D	8/22/17	1056		S	1	X					
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TURNAROUND REQUIREMENTS			REPORT REQUIREMENTS	***	Comi	nents/Spe	cial Instru	ections:			
24 hr 48 hr 5	day		I. Routine Report: Results, Method Bl	ank,	Hold	Remainde	er				
X Standard (10 days)			Surrogate, as required								
Provide FAX Preliminary Re Requested Report Date:	sults		II. Report Dup., MS, MSD as required								
			III. Data Validation Report (includes								
Invoice Information P.O. # <u>UCR-ALS-D34-17</u>			raw data) IV. CLP Deliverable Report								
F.O. # <u>OCK-ALS-D34-17</u> Bill to: Cristy Kessel - Teck Americ	an		V. EDD								
501 N Riverpoint Blvd, Suite 300 Spoke		Λ	V. EDD								
RELINQUISHED BY:		RECEIVE	D BY:		RELI	NQUISHI	ED BY:]	RECEIVE	ED BY:
Signature:				1							
Printed Name: Joe Laft									1		me:
Firm: ANA		Firm:	me: Les Kennedy ALS								
Date/Time: 8/23/17 /	300	Date/Time	8/24/17 1020			Γime:				Date/Time	

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

Date 8/23/17
PAGE 15 OF 15
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Project Name Tools Associated	Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001						0.000		Analys	is Reques	ed	
			t Number: <u>B0095010.0005.00001</u>		iers	9						
Project Contact: Kady Young Co	ompany: <u>A</u>	rcadis			Containers	(09)						
Company/Address: 189 North Ced	dar Street	Phone: <u>30</u>	7-203-3510 or 810-588-1488		ပီ ၁	050F				•		
City, State, Zip: Buffalo, WY 8283	34 FAX: 30	07-684-590	<u>51</u>		er of	nic 3						
Sampler's Signature:	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				Number	lead/arsenic 3050B/6010					·	
Sample I.D.	Date	Time	LAB ID	Matrix	Z	lead					REMARKS	
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TURNAROUND REQUIREMENTS			REPORT REQUIREMENTS			_	cial Instru	etions:				
24 hr 48 hr 5	day	*****	I. Routine Report: Results, Method Bla	ınk,	Hold	Remainde	er					
X Standard (10 days) Provide FAX Preliminary Re	aulta	v	Surrogate, as required									1
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Invoice Information			raw data)									ļ
P.O. # <u>UCR-ALS-D34-17</u>			IV. CLP Deliverable Report									ŀ
Bill to: Cristy Kessel - Teck Americ	an i	X	V. EDD									
501 N Riverpoint Blvd, Suite 300 Spoka	ne, WA 9920											
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Signature: Le AC	nature: le M Signature: S				Signa	ture:				Signature:		
rinted Name: Joe Lotha Printed Name: Les Kennedy					Printe	d Name: _	· · · · · · · · · · · · · · · · · · ·			Printed Na	me:	
Printed Name: Les Kennedy Firm: ACS Firm: ACS					Firm:Firm:							
Date/Time: <u>8723/17</u>	1300	Date/Time	8/24/17 1020		Date/7	lime:				Date/Time		



Cooler Receipt and Preservation Form

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Total Solids

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/21/17 - 08/22/17

Sample Matrix: Soil Date Received: 08/25/17

Analysis Method:160.3 ModifiedUnits: PercentPrep Method:NoneBasis: As Received

Solids, Total

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
258-3-C01-082217	K1708976-001	97.9	-	-	1	08/31/17 16:53	
258-3-C02-082217	K1708976-002	98.1	-	-	1	08/31/17 16:53	
258-3-C03-082217	K1708976-003	98.0	-	-	1	08/31/17 16:53	
258-3-C04-082217	K1708976-004	97.5	-	-	1	08/31/17 16:53	
258-3-C05-082217	K1708976-005	97.3	-	-	1	08/31/17 16:53	
258-3-C06-082217	K1708976-006	97.8	-	-	1	08/31/17 16:53	
258-3-C07-082217	K1708976-007	98.1	-	-	1	08/31/17 16:53	
258-3-C08-082217	K1708976-008	98.2	-	-	1	08/31/17 16:53	
258-3-C09-082217	K1708976-009	98.5	-	-	1	08/31/17 16:53	
258-3-C10-082217	K1708976-010	97.9	-	-	1	08/31/17 16:53	
258-3-B10-082117-D	K1708976-011	98.3	-	-	1	08/31/17 16:53	
258-3-H07-082217-D	K1708976-012	97.5	-	-	1	08/31/17 16:53	
258-3-J04-082217-D	K1708976-013	95.9	-	-	1	08/31/17 16:53	

Service Request: K1708976

QA/QC Report

Client: Teck American Incorporated

Project August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Analysis Method:

160.3 Modified

Prep Method: None

Service Request:K1708976

Date Collected:08/21/17 - 08/22/17

Date Received: 08/25/17

Units:Percent

Basis: As Received

Replicate Sample Summary Inorganic Parameters

			Sample	Duplicate			RPD	Date
Sample Name:	Lab Code:	MRL	Result	Result	Average	RPD	Limit	Analyzed
258-3-C01-082217	K1708976-001DUP	-	97.9	97.8	97.9	<1	20	08/31/17
258-3-B10-082117-D	K1708976-011DUP	-	98.3	98.3	98.3	<1	20	08/31/17

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Printed 09/12/17 5:02:44 PM Superset Reference:17-0000435534 rev 00



Metals

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Service Request: K1708976

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/22/17 08:56

Sample Matrix: Soil Date Received: 08/25/17 10:20

Sample Name: 258-3-C01-082217 **Basis:** Dry

Lab Code: K1708976-001

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 8.1 mg/Kg 3.9 0.8 2 09/07/17 11:35 09/05/17 Lead 6010C 23.9 mg/Kg2.0 0.4 2 09/07/17 11:35 09/05/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708976 **Date Collected:** 08/22/17 08:58 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Date Received: 08/25/17 10:20 **Sample Matrix:** Soil

Sample Name: 258-3-C02-082217 Basis: Dry

Lab Code: K1708976-002

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed Date Extracted		
Arsenic	6010C	5.6	mg/Kg	3.9	0.8	2	09/07/17 12:02	09/05/17	
Lead	6010C	24.4	mg/Kg	1.9	0.4	2	09/07/17 12:02	09/05/17	

Analytical Report

Service Request: K1708976

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/22/17 09:00

Sample Matrix: Soil Date Received: 08/25/17 10:20

Sample Name: 258-3-C03-082217 **Basis:** Dry

Lab Code: K1708976-003

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 9.0 mg/Kg 4.0 0.8 2 09/07/17 12:04 09/05/17 Lead 6010C 54.7 mg/Kg2.0 0.4 2 09/07/17 12:04 09/05/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708976 **Date Collected:** 08/22/17 09:01 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/25/17 10:20

Sample Name: 258-3-C04-082217 Basis: Dry

Lab Code: K1708976-004

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 17.3 mg/Kg 4.0 0.8 2 09/07/17 12:06 09/05/17 Lead 6010C 217 mg/Kg2.0 0.4 2 09/07/17 12:06 09/05/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708976 **Date Collected:** 08/22/17 09:03 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/25/17 10:20

Sample Name: 258-3-C05-082217 Basis: Dry

Lab Code: K1708976-005

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 8.3 mg/Kg 4.0 0.8 2 09/07/17 12:08 09/05/17 Lead 6010C 71.6 mg/Kg2.0 0.4 2 09/07/17 12:08 09/05/17

Analytical Report

Service Request: K1708976

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/22/17 09:06

Sample Matrix: Soil Date Received: 08/25/17 10:20

Sample Name: 258-3-C06-082217 **Basis:** Dry

Lab Code: K1708976-006

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 10.3 mg/Kg 3.9 0.8 2 09/07/17 12:11 09/05/17 Lead 6010C 91.3 mg/Kg1.9 0.4 2 09/07/17 12:11 09/05/17

Analytical Report

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/22/17 09:08

Sample Matrix: Soil

Date Received: 08/25/17 10:20

Service Request: K1708976

Sample Name: 258-3-C07-082217 **Basis:** Dry

Lab Code: K1708976-007

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 10.5 mg/Kg 3.9 0.8 2 09/07/17 12:13 09/05/17 Lead 6010C 115 mg/Kg1.9 0.4 2 09/07/17 12:13 09/05/17

Analytical Report

Service Request: K1708976

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/22/17 09:10

Sample Matrix: Soil Date Received: 08/25/17 10:20

Sample Name: 258-3-C08-082217 **Basis:** Dry

Lab Code: K1708976-008

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 8.9 mg/Kg 4.0 0.8 2 09/07/17 12:15 09/05/17 Lead 6010C 108 mg/Kg2.0 0.4 2 09/07/17 12:15 09/05/17

Analytical Report

Service Request: K1708976

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/22/17 09:12

Sample Matrix: Soil Date Received: 08/25/17 10:20

Sample Name: 258-3-C09-082217 **Basis:** Dry

Lab Code: K1708976-009

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 9.5 mg/Kg 4.0 0.8 2 09/07/17 12:24 09/05/17 Lead 6010C 111 mg/Kg2.0 0.4 2 09/07/17 12:24 09/05/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708976 **Date Collected:** 08/22/17 09:13 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/25/17 10:20

Sample Name: 258-3-C10-082217 Basis: Dry

Lab Code: K1708976-010

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 18.2 mg/Kg 3.9 0.8 2 09/07/17 12:26 09/05/17 Lead 6010C 284 mg/Kg2.0 0.4 2 09/07/17 12:26 09/05/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708976 **Date Collected:** 08/21/17 17:33 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/25/17 10:20

Sample Name: 258-3-B10-082117-D Basis: Dry

Lab Code: K1708976-011

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 8.1 mg/Kg 3.9 0.8 2 09/07/17 12:28 09/05/17 Lead 6010C 51.2 mg/Kg2.0 0.4 2 09/07/17 12:28 09/05/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708976 **Date Collected:** 08/22/17 10:56 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/25/17 10:20

Sample Name: 258-3-H07-082217-D Basis: Dry

Lab Code: K1708976-012

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 17.2 mg/Kg 3.9 0.8 2 09/07/17 12:30 09/05/17 Lead 6010C 188 mg/Kg2.0 0.4 2 09/07/17 12:30 09/05/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708976 **Date Collected:** 08/22/17 11:49 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/25/17 10:20

Sample Name: 258-3-J04-082217-D Basis: Dry

Lab Code: K1708976-013

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 13.0 mg/Kg 4.1 0.8 2 09/07/17 12:32 09/05/17 Lead 6010C 213 mg/Kg2.0 0.4 2 09/07/17 12:32 09/05/17

Printed 9/8/2017 12:20:59 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated Service Request: K1708976

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 Date Collected: NA

Sample Matrix:

Soil

Date Received: NA

Sample Name:

Method Blank

Basis: Dry

Lab Code: KQ1712552-02

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed I	ate Extracted	Q
Arsenic	6010C	ND U	mg/Kg	4	0.8	2	09/07/17 11:31	09/05/17	
Lead	6010C	ND U	mg/Kg	2	0.4	2	09/07/17 11:31	09/05/17	

QA/QC Report

Client: Teck American Incorporated

August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

K1708976

Service Request: Date Collected:

08/22/17

Date Received:

08/25/17

Date Analyzed:

09/7/17

Date Extracted:

Units:

Basis:

09/5/17

Duplicate Matrix Spike Summary

Total Metals

Sample Name:

258-3-C01-082217

mg/Kg

Dry

Lab Code:

Project:

K1708976-001

Analysis Method:

6010C

Prep Method:

EPA 3050B

Matrix Spike KQ1712552-03

Duplicate Matrix Spike

KQ1712552-04

	Sample		Spike			Spike		% Rec		RPD
Analyte Name	Result	Result	Amount	% Rec	Result	Amount	% Rec	Limits	RPD	Limit
Arsenic	8.1	98.9	94.6	96	103	97.2	98	75-125	4	30
Lead	23.9	112	94.6	93	116	97.2	95	75-125	4	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

QA/QC Report

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Service Request: K1708976 Date Analyzed: 09/07/17

Lab Control Sample Summary Total Metals

Units:mg/Kg
Basis:Dry

Lab Control Sample

KQ1712552-01

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Arsenic	6010C	491	500	98	80-120
Lead	6010C	491	500	98	80-120



ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue Kelso, WA 98626

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September 12, 2017

Analytical Report for Service Request No: K1708977

Dave Enos Teck American Incorporated 501 North Riverpoint Blvd., Suite 300 Spokane, WA 99202

RE: August 2017 Sampling SAT Study / B0095010.0005.00001

Dear Dave.

Enclosed are the results of the sample(s) submitted to our laboratory August 24, 2017 For your reference, these analyses have been assigned our service request number **K1708977**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3330. You may also contact me via email at Jeff.Coronado@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Jeff Coronado

Metals Department

Manager



ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue Kelso, WA 98626

T: +1 360 577 7222 F: +1 360 636 1068 www.alsglobal.com

Table of Contents

Acronyms

Qualifiers

State Certifications, Accreditations, And Licenses

Case Narrative

Chain of Custody

Total Solids

Metals

Acronyms

ASTM American Society for Testing and Materials

A2LA American Association for Laboratory Accreditation

CARB California Air Resources Board

CAS Number Chemical Abstract Service registry Number

CFC Chlorofluorocarbon
CFU Colony-Forming Unit

DEC Department of Environmental Conservation

DEQ Department of Environmental Quality

DHS Department of Health Services

DOE Department of Ecology
DOH Department of Health

EPA U. S. Environmental Protection Agency

ELAP Environmental Laboratory Accreditation Program

GC Gas Chromatography

GC/MS Gas Chromatography/Mass Spectrometry

LOD Limit of Detection
LOQ Limit of Quantitation

LUFT Leaking Underground Fuel Tank

M Modified

MCL Maximum Contaminant Level is the highest permissible concentration of a substance

allowed in drinking water as established by the USEPA.

MDL Method Detection Limit
MPN Most Probable Number
MRL Method Reporting Limit

NA Not Applicable
NC Not Calculated

NCASI National Council of the Paper Industry for Air and Stream Improvement

ND Not Detected

NIOSH National Institute for Occupational Safety and Health

PQL Practical Quantitation Limit

RCRA Resource Conservation and Recovery Act

SIM Selected Ion Monitoring

TPH Total Petroleum Hydrocarbons

tr Trace level is the concentration of an analyte that is less than the PQL but greater than or

equal to the MDL.

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L14-51
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	_
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
	https://deq.nc.gov/about/divisions/water-resources/water-resources-	
	data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-	
North Carolina DEQ	certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaborator	
Oregon – DEQ (NELAP)	yAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.



Case Narrative

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

ALS ENVIRONMENTAL

Client: Teck American Incorporated Service Request No.: K1708977

Project: August 2017 Sampling SAT Study/ Date Received: 08/24/17

B0095010.0005.00001

Sample Matrix: Soil

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

Sample Receipt

Twenty soil samples were received for analysis at ALS Environmental on 08/24/17. The samples were received in good condition and consistent with the accompanying chain of custody form, except where noted on the cooler receipt and preservation form included in this report. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Total Metals

No anomalies associated with the analysis of these samples were observed.

Approved by



Chain of Custody

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068



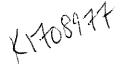
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PAGE ____ OF 15
SR#____

Desci	Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001											Analys	is Reques	ted
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City,	State, Zip: Buffalo, W	/Y 828	34 FA	X: <u>30</u>	07-684-596	1		r of	nic 3		İ			
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	A 06				128	<u></u>	S	1	X					
	A07				1129	<u></u>	S	1	X					
	A08				1131		S	1	X					
	A09				1133		S	1	X					
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ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068



Date 8/23/17
PAGE 2 OF 15

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l	e Information					raw data)								
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Vere custody papers properly	filled out (ink, s	igned, etc.)?	,					NA (D	N
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ere appropriate bottles/contai							m page 2.		<u>₹</u>	N
Vere the pH-preserved bottles						ate in the to	able below	(NA)	Y	N
Vere VOA vials received with		-	-		F			NA	Y	N
/as C12/Res negative?								(NA)		N
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Sample ID on Bottle		Sample I	D on COC	<u> </u>			Identified by:			
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Page___of__



Total Solids

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Analytical Report

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 Date Collection

Sample Matrix: Soil

2011

Analysis Method: 160.3 Modified

Prep Method: None

Service Request: K1708977 **Date Collected:** 08/21/17

Date Received: 08/24/17

Units: Percent

Basis: As Received

Solids, Total

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
258-1-A01-082117	K1708977-001	98.9	-	-	1	08/31/17 16:53	
258-1-A02-082117	K1708977-002	98.8	-	-	1	08/31/17 16:53	
258-1-A03-082117	K1708977-003	98.7	-	-	1	08/31/17 16:53	
258-1-A04-082117	K1708977-004	93.8	-	-	1	08/31/17 16:53	
258-1-A05-082117	K1708977-005	97.5	-	-	1	08/31/17 16:53	
258-1-A06-082117	K1708977-006	96.9	-	-	1	08/31/17 16:53	
258-1-A07-082117	K1708977-007	97.0	-	-	1	08/31/17 16:53	
258-1-A08-082117	K1708977-008	97.2	-	-	1	08/31/17 16:53	
258-1-A09-082117	K1708977-009	96.7	-	-	1	08/31/17 16:53	
258-1-A10-082117	K1708977-010	97.1	-	-	1	08/31/17 16:53	
258-1-B01-082117	K1708977-011	98.6	-	-	1	08/31/17 16:53	
258-1-B02-082117	K1708977-012	99.0	-	-	1	08/31/17 16:53	
258-1-B03-082117	K1708977-013	95.6	-	-	1	08/31/17 16:53	
258-1-B04-082117	K1708977-014	97.5	-	-	1	08/31/17 16:53	
258-1-B05-082117	K1708977-015	97.5	-	-	1	08/31/17 16:53	
258-1-B06-082117	K1708977-016	97.8	-	-	1	08/31/17 16:53	
258-1-B07-082117	K1708977-017	96.0	-	-	1	08/31/17 16:53	
258-1-B08-082117	K1708977-018	96.8	-	-	1	08/31/17 16:53	
258-1-B09-082117	K1708977-019	97.2	-	-	1	08/31/17 16:53	
258-1-B10-082117	K1708977-020	97.2	=	-	1	08/31/17 16:53	

QA/QC Report

Client: Teck American Incorporated

Project August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

2011

Service Request:K1708977

Date Collected:08/21/17

Date Received: 08/24/17

Analysis Method: 160.3 Modified

Prep Method: None

Units:Percent
Basis: As Received

Replicate Sample Summary Inorganic Parameters

			Sample	Duplicate			RPD	Date
Sample Name:	Lab Code:	MRL	Result	Result	Average	RPD	Limit	Analyzed
258-1-A01-082117	K1708977-001DUP	-	98.9	98.8	98.9	<1	20	08/31/17
258-1-B01-082117	K1708977-011DUP	_	98.6	98.9	98.8	<1	20	08/31/17

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Printed 09/12/17 5:03:38 PM Superset Reference:17-0000435536 rev 00



Metals

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Service Request: K1708977

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/21/17 11:20

Sample Matrix: Soil Date Received: 08/24/17 10:20

Sample Name: 258-1-A01-082117 **Basis:** Dry

Lab Code: K1708977-001

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 13.1 mg/Kg 4.0 0.8 2 09/07/17 12:39 09/05/17 Lead 6010C 159 mg/Kg2.0 0.4 2 09/07/17 12:39 09/05/17

Analytical Report

Service Request: K1708977

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/21/17 11:22

Sample Matrix: Soil Date Received: 08/24/17 10:20

Sample Name: 258-1-A02-082117 **Basis:** Dry

Lab Code: K1708977-002

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 11.8 mg/Kg 4.0 0.8 2 09/07/17 12:59 09/05/17 Lead 6010C 97.4 mg/Kg2.0 0.4 2 09/07/17 12:59 09/05/17

Analytical Report

Client: Teck American Incorporated

Date Collected: 08/21/17 11:24 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix:

Soil

Date Received: 08/24/17 10:20

Basis: Dry

Service Request: K1708977

Sample Name: 258-1-A03-082117

Lab Code: K1708977-003

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	Pate Extracted	Q
Arsenic	6010C	18.1	mg/Kg	4.0	0.8	2	09/07/17 13:02	09/05/17	
Lead	6010C	320	mg/Kg	2.0	0.4	2	09/07/17 13:02	09/05/17	

Printed 9/8/2017 12:22:35 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708977 **Date Collected:** 08/21/17 11:26 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 258-1-A04-082117 Basis: Dry

Lab Code: K1708977-004

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 17.6 mg/Kg 4.1 0.8 2 09/07/17 13:04 09/05/17 Lead 6010C 328 mg/Kg2.0 0.4 2 09/07/17 13:04 09/05/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708977 **Date Collected:** 08/21/17 11:27 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Date Received: 08/24/17 10:20

Sample Name: 258-1-A05-082117 Basis: Dry

Lab Code: K1708977-005

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	ate Extracted	Q
Arsenic	6010C	17.4	mg/Kg	3.8	0.8	2	09/07/17 13:06	09/05/17	
Lead	6010C	246	mg/Kg	1.9	0.4	2	09/07/17 13:06	09/05/17	

Analytical Report

Client: Teck American Incorporated

Service Request: K1708977 **Date Collected:** 08/21/17 11:28 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Date Received: 08/24/17 10:20 **Sample Matrix:** Soil

Sample Name: 258-1-A06-082117 Basis: Dry

Lab Code: K1708977-006

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	ate Extracted	Q
Arsenic	6010C	10.1	mg/Kg	3.9	0.8	2	09/07/17 13:08	09/05/17	
Lead	6010C	381	mg/Kg	1.9	0.4	2	09/07/17 13:08	09/05/17	

Analytical Report

Client: Teck American Incorporated

Service Request: K1708977 **Date Collected:** 08/21/17 11:29 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 258-1-A07-082117 Basis: Dry

Lab Code: K1708977-007

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 14.6 mg/Kg 3.9 0.8 2 09/07/17 13:10 09/05/17 Lead 6010C 125 mg/Kg2.0 0.4 2 09/07/17 13:10 09/05/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708977 **Date Collected:** 08/21/17 11:31 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 258-1-A08-082117 Basis: Dry

Lab Code: K1708977-008

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 12.5 mg/Kg 3.8 0.8 2 09/07/17 13:12 09/05/17 Lead 6010C 185 mg/Kg1.9 0.4 2 09/07/17 13:12 09/05/17

Analytical Report

Service Request: K1708977

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/21/17 11:33

Sample Matrix: Soil Date Received: 08/24/17 10:20

Sample Name: 258-1-A09-082117 **Basis:** Dry

Lab Code: K1708977-009

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 8.7 mg/Kg 4.0 0.8 2 09/07/17 13:15 09/05/17 Lead 6010C **79.4** mg/Kg2.0 0.4 2 09/07/17 13:15 09/05/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708977 **Date Collected:** 08/21/17 11:35 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 258-1-A10-082117 Basis: Dry

K1708977-010 Lab Code:

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 21.3 mg/Kg 4.0 0.8 2 09/07/17 13:23 09/05/17 Lead 6010C 306 mg/Kg2.0 0.4 2 09/07/17 13:23 09/05/17

Analytical Report

Service Request: K1708977

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/21/17 11:40

Sample Matrix: Soil Date Received: 08/24/17 10:20

Sample Name: 258-1-B01-082117 **Basis:** Dry

Lab Code: K1708977-011

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 10.6 mg/Kg 3.9 0.8 2 09/07/17 13:25 09/05/17 Lead 6010C **79.4** mg/Kg2.0 0.4 2 09/07/17 13:25 09/05/17

Analytical Report

Service Request: K1708977

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/21/17 11:43

Sample Matrix: Soil Date Received: 08/24/17 10:20

Sample Name: 258-1-B02-082117 **Basis:** Dry

Lab Code: K1708977-012

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 10.5 mg/Kg 3.8 0.8 2 09/07/17 13:28 09/05/17 Lead 6010C 61.1 mg/Kg1.9 0.4 2 09/07/17 13:28 09/05/17

Analytical Report

Service Request: K1708977

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/21/17 11:45

Sample Matrix: Soil Date Received: 08/24/17 10:20

Sample Name: 258-1-B03-082117 **Basis:** Dry

Lab Code: K1708977-013

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 8.9 mg/Kg 3.9 0.8 2 09/07/17 13:30 09/05/17 Lead 6010C 195 mg/Kg1.9 0.4 2 09/07/17 13:30 09/05/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708977 **Date Collected:** 08/21/17 11:46 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Date Received: 08/24/17 10:20 **Sample Matrix:** Soil

Sample Name: 258-1-B04-082117 Basis: Dry

Lab Code: K1708977-014

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed Date Extracted		
Arsenic	6010C	12.4	mg/Kg	3.8	0.8	2	09/07/17 13:32	09/05/17	
Lead	6010C	101	mg/Kg	1.9	0.4	2	09/07/17 13:32	09/05/17	

Analytical Report

Client: Teck American Incorporated

Service Request: K1708977 **Date Collected:** 08/21/17 11:48 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 258-1-B05-082117 Basis: Dry

Lab Code: K1708977-015

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 11.0 mg/Kg 3.9 0.8 2 09/07/17 13:34 09/05/17 Lead 6010C 368 mg/Kg2.0 0.4 2 09/07/17 13:34 09/05/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708977 **Date Collected:** 08/21/17 11:51 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 258-1-B06-082117 Basis: Dry

Lab Code: K1708977-016

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 10.4 mg/Kg 4.0 0.8 2 09/07/17 13:36 09/05/17 Lead 6010C 112 mg/Kg2.0 0.4 2 09/07/17 13:36 09/05/17

Analytical Report

Service Request: K1708977

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/21/17 11:53

Sample Matrix: Soil Date Received: 08/24/17 10:20

Sample Name: 258-1-B07-082117 **Basis:** Dry

Lab Code: K1708977-017

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 11.4 mg/Kg 3.9 0.8 2 09/07/17 13:38 09/05/17 Lead 6010C 308 mg/Kg2.0 0.4 2 09/07/17 13:38 09/05/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708977 **Date Collected:** 08/21/17 11:56 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 258-1-B08-082117 Basis: Dry

Lab Code: K1708977-018

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 17.2 mg/Kg 4.0 0.8 2 09/07/17 13:41 09/05/17 Lead 6010C 178 mg/Kg2.0 0.4 2 09/07/17 13:41 09/05/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708977 **Date Collected:** 08/21/17 11:58 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 258-1-B09-082117 Basis: Dry

Lab Code: K1708977-019

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 12.6 mg/Kg 4.0 0.8 2 09/07/17 13:43 09/05/17 Lead 6010C 179 mg/Kg2.0 0.4 2 09/07/17 13:43 09/05/17

Analytical Report

Service Request: K1708977

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/21/17 12:00

Sample Matrix: Soil Date Received: 08/24/17 10:20

Sample Name: 258-1-B10-082117 **Basis:** Dry

Lab Code: K1708977-020

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 11.4 mg/Kg 4.0 0.8 2 09/07/17 13:51 09/05/17 Lead 6010C **120** mg/Kg2.0 0.4 2 09/07/17 13:51 09/05/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708977

Project: August 2017 Sampling SAT Study/B0095010.0005.00001

Date Collected: NA

Sample Matrix: Soil

Date Received: NA

Method Blank

Basis: Dry

Sample Name: Lab Code:

KQ1712554-02

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	Pate Extracted	Q
Arsenic	6010C	ND U	mg/Kg	4	0.8	2	09/07/17 12:35	09/05/17	
Lead	6010C	ND U	mg/Kg	2	0.4	2	09/07/17 12:35	09/05/17	

QA/QC Report

Client: Teck American Incorporated

August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Service Request:

K1708977

Date Collected:

08/21/17

Date Received:

08/24/17

Date Analyzed: Date Extracted:

09/7/17 09/5/17

Duplicate Matrix Spike Summary

Total Metals

Sample Name:

258-1-A01-082117

Units: Basis: mg/Kg Dry

Lab Code:

Project:

K1708977-001

Analysis Method: Prep Method:

6010C

EPA 3050B

Matrix Spike KQ1712554-03

Duplicate Matrix Spike

KQ1712554-04

	Sample		Spike			Spike		% Rec		RPD
Analyte Name	Result	Result	Amount	% Rec	Result	Amount	% Rec	Limits	RPD	Limit
Arsenic	13.1	107	95.3	98	104	97.3	93	75-125	3	30
Lead	159	252	95.3	98	243	97.3	87	75-125	4	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

QA/QC Report

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Analyzed:** 09/07/17

Sample Matrix: Soil

Lab Control Sample Summary Total Metals

> Units:mg/Kg Basis:Dry

Service Request: K1708977

Lab Control Sample

KQ1712554-01

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Arsenic	6010C	496	500	99	80-120
Lead	6010C	496	500	99	80-120



ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue Kelso, WA 98626

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September 12, 2017

Analytical Report for Service Request No: K1708979

Dave Enos Teck American Incorporated 501 North Riverpoint Blvd., Suite 300 Spokane, WA 99202

RE: August 2017 Sampling SAT Study / B0095010.0005.00001

Dear Dave.

Enclosed are the results of the sample(s) submitted to our laboratory August 24, 2017 For your reference, these analyses have been assigned our service request number **K1708979**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3330. You may also contact me via email at Jeff.Coronado@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Jeff Coronado Metals Department

Manager



ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue Kelso, WA 98626

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Table of Contents

Acronyms

Qualifiers

State Certifications, Accreditations, And Licenses

Case Narrative

Chain of Custody

Total Solids

Metals

Acronyms

ASTM American Society for Testing and Materials

A2LA American Association for Laboratory Accreditation

CARB California Air Resources Board

CAS Number Chemical Abstract Service registry Number

CFC Chlorofluorocarbon
CFU Colony-Forming Unit

DEC Department of Environmental Conservation

DEQ Department of Environmental Quality

DHS Department of Health Services

DOE Department of Ecology
DOH Department of Health

EPA U. S. Environmental Protection Agency

ELAP Environmental Laboratory Accreditation Program

GC Gas Chromatography

GC/MS Gas Chromatography/Mass Spectrometry

LOD Limit of Detection
LOQ Limit of Quantitation

LUFT Leaking Underground Fuel Tank

M Modified

MCL Maximum Contaminant Level is the highest permissible concentration of a substance

allowed in drinking water as established by the USEPA.

MDL Method Detection Limit
MPN Most Probable Number
MRL Method Reporting Limit

NA Not Applicable
NC Not Calculated

NCASI National Council of the Paper Industry for Air and Stream Improvement

ND Not Detected

NIOSH National Institute for Occupational Safety and Health

PQL Practical Quantitation Limit

RCRA Resource Conservation and Recovery Act

SIM Selected Ion Monitoring

TPH Total Petroleum Hydrocarbons

tr Trace level is the concentration of an analyte that is less than the PQL but greater than or

equal to the MDL.

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L14-51
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	_
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
	https://deq.nc.gov/about/divisions/water-resources/water-resources-	
	data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-	
North Carolina DEQ	certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaborator	
Oregon – DEQ (NELAP)	yAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.



Case Narrative

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

ALS ENVIRONMENTAL

Client: Teck American Incorporated Service Request No.: K1708979

Project: August 2017 Sampling SAT Study/ Date Received: 08/24/17

B0095010.0005.00001

Sample Matrix: Soil

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

Sample Receipt

Twenty soil samples were received for analysis at ALS Environmental on 08/24/17. The samples were received in good condition and consistent with the accompanying chain of custody form, except where noted on the cooler receipt and preservation form included in this report. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Total Metals

No anomalies associated with the analysis of these samples were observed.

Approved by



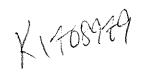
Chain of Custody

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068



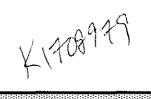
Date 8 / 23 / /7
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	FFC D 1 (N) DOOGGOOGGOOGG						Analysis Rec	quested		
-	<u>(ES)</u> Project Number: <u>B0095010.0005.00001</u>		ers	0						
Project Contact: Kady Young Company:	<u>Arcadis</u>		Containers	1/601						
Company/Address: 189 North Cedar Street	Phone: 307-203-3510 or 810-588-1488			050B	:					
City, State, Zip: Buffalo, WY 82834 FAX:	307-684-5961		r of	nic 3						
Sampler's Signature:			Number	lead/arsenic 3050B/6010						
Sample I.D. Date	Time LABID N	Matrix	ž	lead/				REMARKS		
	7 1800	S	1	 X					٦	
GOZ	1802	S	1	Х						
G03	1804	S	1	Х						
G04	1807	S	1	Χ						
G05	1810	S	1	X						
G06	1811	S	1	X					٦	
G07	1813	s	1	Х						
G108	1815	S	1	X						
609	1818	S	1	X					$ box{}$	
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URNAROUND REQUIREMENTS	REPORT REQUIREMENTS		Comr	nents/Spec	cial Instruc	tions:			٦	
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Requested Report Date:	III. Data Validation Report (includes								1	
Invoice Information	raw data)	ı								
P.O. # <u>UCR-ALS-D34-17</u>	IV. CLP Deliverable Report								-	
Bill to: Cristy Kessel - Teck American 501 N Riverpoint Blvd, Suite 300 Spokane, WA 992	X V. EDD	ĺ							-	
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ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068



Date 8 /23 /17
PAGE 11 OF 15

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Description	Name Task Assistan	UCD CAT	ec n	N D0005010 0005 00001				n en se nije		Analys	is Reques	ted	
				t Number: <u>B0095010.0005.00001</u>		iers	9						
Project	Contact: <u>Kady Young</u> (Company: <u>A</u>	readis			Containers	lead/arsenic 3050B/6010			!			
Compan	y/Address: 189 North C	edar Street	Phone: <u>30</u>	7-203-3510 or 810-588-1488			30501						
City, Sta	ate, Zip: <u>Buffalo, WY 828</u>	834 FAX: <u>3</u>	07-684-596	<u>1</u>		er of	enic 3						
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Total Solids

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Client: Teck American Incorporated

Service Request: K1708979 **Date Collected:** 08/22/17 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix:

Analysis Method:

Soil

160.3 Modified Units: Percent

Prep Method: None Basis: As Received

Date Received: 08/24/17

Solids, Total

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
441-1-G01-082217	K1708979-001	95.0	-	-	1	08/31/17 16:53	
441-1-G02-082217	K1708979-002	93.8	-	-	1	08/31/17 16:53	
441-1-G03-082217	K1708979-003	90.2	-	-	1	08/31/17 16:53	
441-1-G04-082217	K1708979-004	91.7	-	-	1	08/31/17 16:53	
441-1-G05-082217	K1708979-005	92.6	-	-	1	08/31/17 16:53	
441-1-G06-082217	K1708979-006	91.8	-	-	1	08/31/17 16:53	
441-1-G07-082217	K1708979-007	92.3	-	-	1	08/31/17 16:53	
441-1-G08-082217	K1708979-008	93.1	-	-	1	08/31/17 16:53	
441-1-G09-082217	K1708979-009	91.9	-	-	1	08/31/17 16:53	
441-1-G10-082217	K1708979-010	96.4	-	-	1	08/31/17 16:53	
441-1-H01-082217	K1708979-011	93.5	-	-	1	08/31/17 16:53	
441-1-H02-082217	K1708979-012	92.2	-	-	1	08/31/17 16:53	
441-1-H03-082217	K1708979-013	94.2	-	-	1	08/31/17 16:53	
441-1-H04-082217	K1708979-014	92.7	-	-	1	08/31/17 16:53	
441-1-H05-082217	K1708979-015	92.5	-	-	1	08/31/17 16:53	
441-1-H06-082217	K1708979-016	90.7	-	-	1	08/31/17 16:53	
441-1-H07-082217	K1708979-017	93.0	-	-	1	08/31/17 16:53	
441-1-H08-082217	K1708979-018	93.6	-	-	1	08/31/17 16:53	
441-1-H09-082217	K1708979-019	93.2	-	-	1	08/31/17 16:53	
441-1-H10-082217	K1708979-020	93.4	-	-	1	08/31/17 16:53	

QA/QC Report

Client: Teck American Incorporated

Project August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix:

Analysis Method:

Prep Method:

Soil

None

160.3 Modified

Date Collected: 08/22/17 **Date Received:**08/24/17

Units:Percent

Service Request:K1708979

Basis: As Received

Replicate Sample Summary Inorganic Parameters

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
441-1-G01-082217	K1708979-001DUP	-	95.0	95.4	95.2	<1	20	08/31/17
441-1-H01-082217	K1708979-011DUP	_	93.5	93.6	93.6	<1	20	08/31/17

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Printed 09/12/17 5:04:32 PM Superset Reference:17-0000435541 rev 00



Metals

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Service Request: K1708979

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/22/17 18:00

Sample Matrix: Soil Date Received: 08/24/17 10:20

Sample Name: 441-1-G01-082217 **Basis:** Dry

Lab Code: K1708979-001

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 22.8 mg/Kg 4.0 0.8 2 09/07/17 13:58 09/05/17 Lead 6010C 437 mg/Kg2.0 0.4 2 09/07/17 13:58 09/05/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708979 **Date Collected:** 08/22/17 18:02 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Date Received: 08/24/17 10:20 **Sample Matrix:** Soil

Sample Name: 441-1-G02-082217 Basis: Dry

Lab Code: K1708979-002

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	ate Extracted	Q
Arsenic	6010C	28.2	mg/Kg	4.2	0.8	2	09/07/17 14:09	09/05/17	
Lead	6010C	453	mg/Kg	2.1	0.4	2	09/07/17 14:09	09/05/17	

Analytical Report

Service Request: K1708979

Client: Teck American Incorporated

Project:

Sample Matrix: Soil Date Received: 08/24/17 10:20

Sample Name: 441-1-G03-082217 **Basis:** Dry

Lab Code: K1708979-003

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 28.6 mg/Kg 4.2 0.8 2 09/07/17 14:12 09/05/17 Lead 6010C 272 mg/Kg2.1 0.4 2 09/07/17 14:12 09/05/17

Analytical Report

Service Request: K1708979

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/22/17 18:07

Sample Matrix: Soil Date Received: 08/24/17 10:20

Sample Name: 441-1-G04-082217 **Basis:** Dry

Lab Code: K1708979-004

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 33.7 mg/Kg 4.0 0.8 2 09/07/17 14:24 09/05/17 Lead 6010C 417 mg/Kg2.0 0.4 2 09/07/17 14:24 09/05/17

Analytical Report

Service Request: K1708979

Client: Teck American Incorporated

> **Date Collected:** 08/22/17 18:10 August 2017 Sampling SAT Study/B0095010.0005.00001

Project: Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 441-1-G05-082217 Basis: Dry

Lab Code: K1708979-005

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 21.3 mg/Kg 4.0 0.8 2 09/07/17 14:26 09/05/17 Lead 6010C 248 mg/Kg2.0 0.4 2 09/07/17 14:26 09/05/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708979 **Date Collected:** 08/22/17 18:11 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 441-1-G06-082217 Basis: Dry

Lab Code: K1708979-006

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 21.9 mg/Kg 4.2 0.8 2 09/07/17 14:28 09/05/17 Lead 6010C 323 mg/Kg2.1 0.4 2 09/07/17 14:28 09/05/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708979 **Date Collected:** 08/22/17 18:13 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 441-1-G07-082217 Basis: Dry

Lab Code: K1708979-007

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 26.7 mg/Kg 4.2 0.8 2 09/07/17 14:31 09/05/17 Lead 6010C 225 mg/Kg2.1 0.4 2 09/07/17 14:31 09/05/17

Analytical Report

Service Request: K1708979

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/22/17 18:15

Sample Matrix: Soil Date Received: 08/24/17 10:20

Sample Name: 441-1-G08-082217 **Basis:** Dry

Lab Code: K1708979-008

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 19.5 mg/Kg 4.1 0.8 2 09/07/17 14:33 09/05/17 Lead 6010C 151 mg/Kg2.0 0.4 2 09/07/17 14:33 09/05/17

Analytical Report

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Sample Name: 441-1-G09-082217

Lab Code: K1708979-009 **Service Request:** K1708979

Date Collected: 08/22/17 18:18

Date Received: 08/24/17 10:20

Basis: Dry

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	ate Extracted	Q
Arsenic	6010C	44.5	mg/Kg	4.1	0.8	2	09/07/17 14:35	09/05/17	
Lead	6010C	649	mg/Kg	2.1	0.4	2	09/07/17 14:35	09/05/17	

Analytical Report

Client: Teck American Incorporated

Service Request: K1708979 **Date Collected:** 08/22/17 18:19 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 441-1-G10-082217 Basis: Dry

Lab Code: K1708979-010

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	Pate Extracted	Q
Arsenic	6010C	9.8	mg/Kg	4.0	0.8	2	09/07/17 14:38	09/05/17	
Lead	6010C	32.4	mg/Kg	2.0	0.4	2	09/07/17 14:38	09/05/17	

Analytical Report

Service Request: K1708979

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/22/17 18:29

Sample Matrix: Soil Date Received: 08/24/17 10:20

Sample Name: 441-1-H01-082217 **Basis:** Dry

Lab Code: K1708979-011

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 22.7 mg/Kg 4.2 0.8 2 09/07/17 14:40 09/05/17 Lead 6010C 316 mg/Kg2.1 0.4 2 09/07/17 14:40 09/05/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708979 **Date Collected:** 08/22/17 18:31 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 441-1-H02-082217 Basis: Dry

K1708979-012 Lab Code:

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 29.8 mg/Kg 4.2 0.8 2 09/07/17 14:42 09/05/17 Lead 6010C 541 mg/Kg2.1 0.4 2 09/07/17 14:42 09/05/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708979 **Date Collected:** 08/22/17 18:32 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 441-1-H03-082217 Basis: Dry

Lab Code: K1708979-013

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 23.8 mg/Kg 4.0 0.8 2 09/07/17 14:45 09/05/17 Lead 6010C 346 mg/Kg2.0 0.4 2 09/07/17 14:45 09/05/17

Analytical Report

Service Request: K1708979

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/22/17 18:34

Sample Matrix: Soil Date Received: 08/24/17 10:20

Sample Name: 441-1-H04-082217 **Basis:** Dry

Lab Code: K1708979-014

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 21.7 mg/Kg 4.1 0.8 2 09/07/17 14:54 09/05/17 Lead 6010C 178 mg/Kg2.1 0.4 2 09/07/17 14:54 09/05/17

Analytical Report

Service Request: K1708979

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/22/17 18:36

Sample Matrix: Soil Date Received: 08/24/17 10:20

Sample Name: 441-1-H05-082217 **Basis:** Dry

Lab Code: K1708979-015

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 13.2 mg/Kg 4.2 0.8 2 09/07/17 14:56 09/05/17 Lead 6010C 77.4 mg/Kg2.1 0.4 2 09/07/17 14:56 09/05/17

Analytical Report

Service Request: K1708979

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/22/17 18:37

Sample Matrix: Soil Date Received: 08/24/17 10:20

Sample Name: 441-1-H06-082217 **Basis:** Dry

Lab Code: K1708979-016

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 22.2 mg/Kg 4.3 0.9 2 09/07/17 14:58 09/05/17 Lead 6010C 475 mg/Kg2.1 0.4 2 09/07/17 14:58 09/05/17

Analytical Report

Client: Teck American Incorporated

August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix:

Project:

Sample Name:

Lab Code:

Soil

441-1-H07-082217

K1708979-017

Basis: Dry

Date Collected: 08/22/17 18:38

Date Received: 08/24/17 10:20

Service Request: K1708979

Total Metals

Analysis

Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	Date Extracted	Q
Arsenic	6010C	22.5	mg/Kg	4.1	0.8	2	09/07/17 15:01	09/05/17	
Lead	6010C	165	mg/Kg	2.0	0.4	2	09/07/17 15:01	09/05/17	

Printed 9/8/2017 12:27:52 PM Superset Reference:

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Analytical Report

Service Request: K1708979

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/22/17 18:39

Sample Matrix: Soil Date Received: 08/24/17 10:20

Sample Name: 441-1-H08-082217 **Basis:** Dry

Lab Code: K1708979-018

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 26.6 mg/Kg 4.0 0.8 2 09/07/17 15:03 09/05/17 Lead 6010C 453 mg/Kg2.0 0.4 2 09/07/17 15:03 09/05/17

Analytical Report

Service Request: K1708979

Client: Teck American Incorporated

> **Date Collected:** 08/22/17 18:40 August 2017 Sampling SAT Study/B0095010.0005.00001

Project: Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 441-1-H09-082217 Basis: Dry

K1708979-019 Lab Code:

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 38.0 mg/Kg 4.2 0.8 2 09/07/17 15:05 09/05/17 Lead 6010C **690** mg/Kg2.1 0.4 2 09/07/17 15:05 09/05/17

Analytical Report

Service Request: K1708979

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/22/17 18:40

Sample Matrix: Soil Date Received: 08/24/17 10:20

Sample Name: 441-1-H10-082217 **Basis:** Dry

Lab Code: K1708979-020

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 35.0 mg/Kg 4.0 0.8 2 09/07/17 15:08 09/05/17 Lead 6010C 393 mg/Kg2.0 0.4 2 09/07/17 15:08 09/05/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708979

Project: August 2017 Sampling SAT Study/B0095010.0005.00001

Date Collected: NA

Sample Matrix: Soil

a ...

Date Received: NA

Sample Name:

Method Blank

Basis: Dry

Lab Code: KQ1712580-02

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	ate Extracted	Q
Arsenic	6010C	ND U	mg/Kg	4	0.8	2	09/07/17 13:54	09/05/17	
Lead	6010C	ND U	mg/Kg	2	0.4	2	09/07/17 13:54	09/05/17	

QA/QC Report

Client: Teck American Incorporated

August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Service Request: Date Collected: K1708979

Date Conecteu.

08/22/17

Date Received: Date Analyzed: 08/24/17 09/7/17

Date Extracted:

09/5/17

Duplicate Matrix Spike Summary

Total Metals

Sample Name: Lab Code:

Project:

441-1-G01-082217

K1708979-001

Units: Basis: mg/Kg Dry

Analysis Method:

6010C

Prep Method:

EPA 3050B

Matrix Spike KQ1712580-03 **Duplicate Matrix Spike**

KQ1712580-04

	Sample		Spike			Spike		% Rec		RPD
Analyte Name	Result	Result	Amount	% Rec	Result	Amount	% Rec	Limits	RPD	Limit
Arsenic	22.8	122	102	97	121	103	95	75-125	<1	30
Lead	437	551	102	111#	566	103	125 #	75-125	3	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

QA/QC Report

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: S

Soil

Service Request: K1708979

Date Analyzed: 09/07/17

Lab Control Sample Summary Total Metals

Units:mg/Kg
Basis:Dry

Lab Control Sample

KQ1712580-01

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Arsenic	6010C	485	500	97	80-120
Lead	6010C	483	500	97	80-120



ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue Kelso, WA 98626

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September 12, 2017

Analytical Report for Service Request No: K1708980

Dave Enos Teck American Incorporated 501 North Riverpoint Blvd., Suite 300 Spokane, WA 99202

RE: August 2017 Sampling SAT Study / B0095010.0005.00001

Dear Dave.

Enclosed are the results of the sample(s) submitted to our laboratory August 24, 2017 For your reference, these analyses have been assigned our service request number **K1708980**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3330. You may also contact me via email at Jeff.Coronado@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Jeff Coronado Metals Department

Manager



ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue Kelso, WA 98626

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Table of Contents

Acronyms

Qualifiers

State Certifications, Accreditations, And Licenses

Case Narrative

Chain of Custody

Total Solids

Metals

Acronyms

ASTM American Society for Testing and Materials

A2LA American Association for Laboratory Accreditation

CARB California Air Resources Board

CAS Number Chemical Abstract Service registry Number

CFC Chlorofluorocarbon
CFU Colony-Forming Unit

DEC Department of Environmental Conservation

DEQ Department of Environmental Quality

DHS Department of Health Services

DOE Department of Ecology
DOH Department of Health

EPA U. S. Environmental Protection Agency

ELAP Environmental Laboratory Accreditation Program

GC Gas Chromatography

GC/MS Gas Chromatography/Mass Spectrometry

LOD Limit of Detection
LOQ Limit of Quantitation

LUFT Leaking Underground Fuel Tank

M Modified

MCL Maximum Contaminant Level is the highest permissible concentration of a substance

allowed in drinking water as established by the USEPA.

MDL Method Detection Limit
MPN Most Probable Number
MRL Method Reporting Limit

NA Not Applicable
NC Not Calculated

NCASI National Council of the Paper Industry for Air and Stream Improvement

ND Not Detected

NIOSH National Institute for Occupational Safety and Health

PQL Practical Quantitation Limit

RCRA Resource Conservation and Recovery Act

SIM Selected Ion Monitoring

TPH Total Petroleum Hydrocarbons

tr Trace level is the concentration of an analyte that is less than the PQL but greater than or

equal to the MDL.

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L14-51
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	_
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
	https://deq.nc.gov/about/divisions/water-resources/water-resources-	
	data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-	
North Carolina DEQ	certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaborator	
Oregon – DEQ (NELAP)	yAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.



Case Narrative

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

ALS ENVIRONMENTAL

Client:Teck American IncorporatedService Request No.:K1708980Project:August 2017 Sampling SAT Study/Date Received:08/24/17

B0095010.0005.00001

Sample Matrix: Soil

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

Sample Receipt

Twenty soil samples were received for analysis at ALS Environmental on 08/24/17. The samples were received in good condition and consistent with the accompanying chain of custody form, except where noted on the cooler receipt and preservation form included in this report. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Total Metals

Matrix Spike Recovery Exceptions:

The matrix spike recoveries of Lead for sample 441-1-I01-082217 were outside control criteria. However, the analyte concentration in this sample was significantly higher than the added spike concentration, preventing accurate evaluation of the spike recovery. Recovery in the Laboratory Control Sample (LCS) was acceptable, which indicates the analytical batch was in control. No further corrective action was appropriate.

No other anomalies associated with the analysis of these samples were observed.

Approved by



Chain of Custody

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068



Date 8 /23 /19
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SR#

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ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

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Date _	8/23/17
PAGE	<u>/4</u> of <u>/5</u>

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	J03			1900		S	1	X						
	J04			1903		S	1	X						
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	J06			1905		S	1	X						
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Total Solids

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Client: Teck American Incorporated

Date Collected: 08/22/17 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

> 160.3 Modified Units: Percent

Analysis Method: Prep Method: Basis: As Received None

Solids, Total

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
441-1-I01-082217	K1708980-001	94.2	-	-	1	08/31/17 16:53	
441-1-I02-082217	K1708980-002	95.5	-	-	1	08/31/17 16:53	
441-1-I03-082217	K1708980-003	95.4	-	-	1	08/31/17 16:53	
441-1-I04-082217	K1708980-004	94.4	-	-	1	08/31/17 16:53	
441-1-I05-082217	K1708980-005	92.5	-	-	1	08/31/17 16:53	
441-1-I06-082217	K1708980-006	92.2	-	-	1	08/31/17 16:53	
441-1-I07-082217	K1708980-007	91.7	-	-	1	08/31/17 16:53	
441-1-I08-082217	K1708980-008	91.6	-	-	1	08/31/17 16:53	
441-1-I09-082217	K1708980-009	92.6	-	-	1	08/31/17 16:53	
441-1-I10-082217	K1708980-010	93.5	-	-	1	08/31/17 16:53	
441-1-J01-082217	K1708980-011	96.9	-	-	1	08/31/17 16:53	
441-1-J02-082217	K1708980-012	94.4	-	-	1	08/31/17 16:53	
441-1-J03-082217	K1708980-013	94.0	-	-	1	08/31/17 16:53	
441-1-J04-082217	K1708980-014	94.4	-	-	1	08/31/17 16:53	
441-1-J05-082217	K1708980-015	93.3	-	-	1	08/31/17 16:53	
441-1-J06-082217	K1708980-016	93.2	-	-	1	08/31/17 16:53	
441-1-J07-082217	K1708980-017	92.8	-	-	1	08/31/17 16:53	
441-1-J08-082217	K1708980-018	94.9	-	-	1	08/31/17 16:53	
441-1-J09-082217	K1708980-019	94.6	-	-	1	08/31/17 16:53	
441-1-J10-082217	K1708980-020	91.2	-	-	1	08/31/17 16:53	

Service Request: K1708980

Date Received: 08/24/17

QA/QC Report

Client: Teck American Incorporated

Project August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Analysis Method:

160.3 Modified

Prep Method: None

Service Request:K1708980

Date Collected: 08/22/17

Date Received: 08/24/17

Units:Percent

Basis: As Received

Replicate Sample Summary Inorganic Parameters

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Avorogo	RPD	RPD Limit	Date
<u> </u>		MIKL	Kesuit	Resuit	Average	KΓD	LIIIII	Analyzed
441-1-I01-082217	K1708980-001DUP	-	94.2	94.3	94.3	<1	20	08/31/17
441-1-J01-082217	K1708980-011DUP	-	96.9	96.7	96.8	<1	20	08/31/17

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Printed 09/12/17 5:05:25 PM Superset Reference:17-0000435540 rev 00



Metals

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Client: Teck American Incorporated

Service Request: K1708980 **Date Collected:** 08/22/17 18:43 August 2017 Sampling SAT Study/B0095010.0005.00001

Project: Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 441-1-I01-082217 Basis: Dry

Lab Code: K1708980-001

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 35.3 mg/Kg 3.9 0.8 2 09/07/17 15:14 09/06/17 Lead 6010C 257 mg/Kg2.0 0.4 2 09/07/17 15:14 09/06/17

Analytical Report

Service Request: K1708980

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/22/17 18:45

Sample Matrix: Soil Date Received: 08/24/17 10:20

Sample Name: 441-1-I02-082217 **Basis:** Dry

Lab Code: K1708980-002

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 32.6 mg/Kg 4.0 0.8 2 09/07/17 15:35 09/06/17 Lead 6010C 174 mg/Kg2.0 0.4 2 09/07/17 15:35 09/06/17

Analytical Report

Service Request: K1708980

Client: Teck American Incorporated

> **Date Collected:** 08/22/17 18:46 August 2017 Sampling SAT Study/B0095010.0005.00001

Project: Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 441-1-I03-082217 Basis: Dry

Lab Code: K1708980-003

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 33.6 mg/Kg 4.1 0.8 2 09/07/17 15:38 09/06/17 Lead 6010C **550** mg/Kg2.0 0.4 2 09/07/17 15:38 09/06/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708980 **Date Collected:** 08/22/17 18:47 August 2017 Sampling SAT Study/B0095010.0005.00001

Project: Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 441-1-I04-082217 Basis: Dry

Lab Code: K1708980-004

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 21.9 mg/Kg 3.9 0.8 2 09/07/17 15:40 09/06/17 Lead 6010C 207 mg/Kg2.0 0.4 2 09/07/17 15:40 09/06/17

Analytical Report

Client: Teck American Incorporated

Project:

Service Request: K1708980 **Date Collected:** 08/22/17 18:47 August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 441-1-I05-082217 Basis: Dry

Lab Code: K1708980-005

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 19.3 mg/Kg 4.2 0.8 2 09/07/17 15:42 09/06/17 Lead 6010C 347 mg/Kg2.1 0.4 2 09/07/17 15:42 09/06/17

Analytical Report

Service Request: K1708980

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/22/17 18:48

Sample Matrix: Soil Date Received: 08/24/17 10:20

Sample Name: 441-1-I06-082217 **Basis:** Dry

Lab Code: K1708980-006

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 35.1 mg/Kg 4.2 0.8 2 09/07/17 15:45 09/06/17 Lead 6010C **591** mg/Kg2.1 0.4 2 09/07/17 15:45 09/06/17

Analytical Report

Client: Teck American Incorporated

Project:

Service Request: K1708980 **Date Collected:** 08/22/17 18:50 August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 441-1-I07-082217 Basis: Dry

Lab Code: K1708980-007

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 33.5 mg/Kg 4.1 0.8 2 09/07/17 15:47 09/06/17 Lead 6010C **569** mg/Kg2.1 0.4 2 09/07/17 15:47 09/06/17

Analytical Report

Service Request: K1708980

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/22/17 18:53

Sample Matrix: Soil Date Received: 08/24/17 10:20

Sample Name: 441-1-I08-082217 **Basis:** Dry

Lab Code: K1708980-008

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 27.3 mg/Kg 4.2 0.8 2 09/07/17 15:56 09/06/17 Lead 6010C 941 mg/Kg2.1 0.4 2 09/07/17 15:56 09/06/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708980 **Date Collected:** 08/22/17 18:55 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 441-1-I09-082217 Basis: Dry

Lab Code: K1708980-009

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 17.6 mg/Kg 4.2 0.8 2 09/07/17 15:58 09/06/17 Lead 6010C 144 mg/Kg2.1 0.4 2 09/07/17 15:58 09/06/17

Analytical Report

Service Request: K1708980

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/22/17 18:56

Sample Matrix: Soil Date Received: 08/24/17 10:20

Sample Name: 441-1-I10-082217 **Basis:** Dry

Lab Code: K1708980-010

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q 25.9 Arsenic 6010C mg/Kg 4.0 0.8 2 09/07/17 16:01 09/06/17 Lead 6010C 248 mg/Kg2.0 0.4 2 09/07/17 16:01 09/06/17

Analytical Report

Service Request: K1708980

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/22/17 18:59

Sample Matrix: Soil Date Received: 08/24/17 10:20

Sample Name: 441-1-J01-082217 **Basis:** Dry

Lab Code: K1708980-011

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 24.4 mg/Kg 3.9 0.8 2 09/07/17 16:03 09/06/17 Lead 6010C 351 mg/Kg1.9 0.4 2 09/07/17 16:03 09/06/17

Analytical Report

Service Request: K1708980

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/22/17 19:00

Sample Matrix: Soil Date Received: 08/24/17 10:20

Sample Name: 441-1-J02-082217 **Basis:** Dry

Lab Code: K1708980-012

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 18.9 mg/Kg 4.0 0.8 2 09/07/17 16:05 09/06/17 Lead 6010C 143 mg/Kg2.0 0.4 2 09/07/17 16:05 09/06/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708980 **Date Collected:** 08/22/17 19:00 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 441-1-J03-082217 Basis: Dry

Lab Code: K1708980-013

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 27.0 mg/Kg 4.1 0.8 2 09/07/17 16:08 09/06/17 Lead 6010C 216 mg/Kg2.0 0.4 2 09/07/17 16:08 09/06/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708980 **Date Collected:** 08/22/17 19:03 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 441-1-J04-082217 Basis: Dry

Lab Code: K1708980-014

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 41.0 mg/Kg 4.0 0.8 2 09/07/17 16:10 09/06/17 Lead 6010C 533 mg/Kg2.0 0.4 2 09/07/17 16:10 09/06/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708980 **Date Collected:** 08/22/17 19:04 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Date Received: 08/24/17 10:20

Basis: Dry

Sample Name: 441-1-J05-082217

Lab Code: K1708980-015

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	ate Extracted	Q
Arsenic	6010C	22.8	mg/Kg	4.0	0.8	2	09/07/17 16:12	09/06/17	
Lead	6010C	245	mg/Kg	2.0	0.4	2	09/07/17 16:12	09/06/17	

Printed 9/8/2017 12:24:12 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708980 **Date Collected:** 08/22/17 19:05 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 441-1-J06-082217 Basis: Dry

Lab Code: K1708980-016

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 31.1 mg/Kg 4.1 0.8 2 09/07/17 16:15 09/06/17 Lead 6010C 635 mg/Kg2.1 0.4 2 09/07/17 16:15 09/06/17

Analytical Report

Client: Teck American Incorporated

> **Date Collected:** 08/22/17 19:06 August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix:

Project:

Sample Name:

Soil

Date Received: 08/24/17 10:20

Service Request: K1708980

441-1-J07-082217 Basis: Dry

Lab Code: K1708980-017

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	Date Analyzed Date Extracted			
Arsenic	6010C	28.8	mg/Kg	4.1	0.8	2	09/07/17 16:17	09/06/17			
Lead	6010C	328	mg/Kg	2.1	0.4	2	09/07/17 16:17	09/06/17			

Analytical Report

Client: Teck American Incorporated

Service Request: K1708980 **Date Collected:** 08/22/17 19:07 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 441-1-J08-082217 Basis: Dry

Lab Code: K1708980-018

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 22.3 mg/Kg 3.9 0.8 2 09/07/17 16:26 09/06/17 Lead 6010C **160** mg/Kg2.0 0.4 2 09/07/17 16:26 09/06/17

Analytical Report

Service Request: K1708980

Client: Teck American Incorporated

> **Date Collected:** 08/22/17 19:08 August 2017 Sampling SAT Study/B0095010.0005.00001

Project: Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 441-1-J09-082217 Basis: Dry

Lab Code: K1708980-019

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 24.2 mg/Kg 4.0 0.8 2 09/07/17 16:28 09/06/17 Lead 6010C 206 mg/Kg2.0 0.4 2 09/07/17 16:28 09/06/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708980 **Date Collected:** 08/22/17 19:10 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 441-1-J10-082217 Basis: Dry

Lab Code: K1708980-020

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 35.6 mg/Kg 4.2 0.8 2 09/07/17 16:31 09/06/17 Lead 6010C 352 mg/Kg2.1 0.4 2 09/07/17 16:31 09/06/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708980

Date Collected: NA **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001 **Sample Matrix:** Soil Date Received: NA

Sample Name: Method Blank Basis: Dry

Lab Code: KQ1712581-02

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C ND U mg/Kg 4 0.8 2 09/07/17 15:10 09/06/17 Lead 6010C ND U mg/Kg2 0.4 2 09/07/17 15:10 09/06/17

QA/QC Report

Client: Teck American Incorporated

Service Request: K1708980

Project:
Sample Matrix:

August 2017 Sampling SAT Study/B0095010.0005.00001 Soil

Date Collected:

08/22/17

Date Received:

08/24/17

Date Analyzed:

09/7/17

Date Extracted:

09/6/17

Duplicate Matrix Spike Summary

Total Metals

Sample Name:

441-1-I01-082217

Units:

mg/Kg

Lab Code:

K1708980-001

Basis:

Dry

Analysis Method: Prep Method:

6010C

EPA 3050B

Duplicate Matrix Spike

KQ1712581-04

Matrix Spike KQ1712581-03

	Sample		Spike			Spike		% Rec		RPD
Analyte Name	Result	Result	Amount	% Rec	Result	Amount	% Rec	Limits	RPD	Limit
Arsenic	35.3	130	101	94	133	104	94	75-125	3	30
Lead	257	305	101	47 N	310	104	51 N	75-125	2	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

QA/QC Report

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Service Request: K1708980 **Date Analyzed:** 09/07/17

Lab Control Sample Summary Total Metals

Units:mg/Kg
Basis:Dry

Lab Control Sample KQ1712581-01

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Arsenic	6010C	497	500	99	80-120
Lead	6010C	494	500	99	80-120



ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue Kelso, WA 98626

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September 12, 2017

Analytical Report for Service Request No: K1708981

Dave Enos Teck American Incorporated 501 North Riverpoint Blvd., Suite 300 Spokane, WA 99202

RE: August 2017 Sampling SAT Study / B0095010.0005.00001

Dear Dave.

Enclosed are the results of the sample(s) submitted to our laboratory August 24, 2017 For your reference, these analyses have been assigned our service request number **K1708981**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3330. You may also contact me via email at Jeff.Coronado@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Jeff Coronado Metals Department

Manager



ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue Kelso, WA 98626

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Table of Contents

Acronyms

Qualifiers

State Certifications, Accreditations, And Licenses

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Chain of Custody

Total Solids

Metals

Acronyms

ASTM American Society for Testing and Materials

A2LA American Association for Laboratory Accreditation

CARB California Air Resources Board

CAS Number Chemical Abstract Service registry Number

CFC Chlorofluorocarbon
CFU Colony-Forming Unit

DEC Department of Environmental Conservation

DEQ Department of Environmental Quality

DHS Department of Health Services

DOE Department of Ecology
DOH Department of Health

EPA U. S. Environmental Protection Agency

ELAP Environmental Laboratory Accreditation Program

GC Gas Chromatography

GC/MS Gas Chromatography/Mass Spectrometry

LOD Limit of Detection
LOQ Limit of Quantitation

LUFT Leaking Underground Fuel Tank

M Modified

MCL Maximum Contaminant Level is the highest permissible concentration of a substance

allowed in drinking water as established by the USEPA.

MDL Method Detection Limit
MPN Most Probable Number
MRL Method Reporting Limit

NA Not Applicable
NC Not Calculated

NCASI National Council of the Paper Industry for Air and Stream Improvement

ND Not Detected

NIOSH National Institute for Occupational Safety and Health

PQL Practical Quantitation Limit

RCRA Resource Conservation and Recovery Act

SIM Selected Ion Monitoring

TPH Total Petroleum Hydrocarbons

tr Trace level is the concentration of an analyte that is less than the PQL but greater than or

equal to the MDL.

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L14-51
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	_
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
	https://deq.nc.gov/about/divisions/water-resources/water-resources-	
	data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-	
North Carolina DEQ	certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaborator	
Oregon – DEQ (NELAP)	yAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.



Case Narrative

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

ALS ENVIRONMENTAL

Client: Teck American Incorporated Service Request No.: K1708981

Project: August 2017 Sampling SAT Study/ Date Received: 08/24/17

B0095010.0005.00001

Sample Matrix: Soil

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

Sample Receipt

Twenty soil samples were received for analysis at ALS Environmental on 08/24/17. The samples were received in good condition and consistent with the accompanying chain of custody form, except where noted on the cooler receipt and preservation form included in this report. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Total Metals

Matrix Spike Recovery Exceptions:

The matrix spike recoveries of Lead for sample 258-1-G01-082117 were outside control criteria. However, the analyte concentration in this sample was significantly higher than the added spike concentration, preventing accurate evaluation of the spike recoveries. Recovery in the Laboratory Control Sample (LCS) was acceptable, which indicates the analytical batch was in control. No further corrective action was appropriate.

No other anomalies associated with the analysis of these samples were observed.

Approved by



Chain of Custody

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068



Date 8/23/17
PAGE 10 OF 15
SR#

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Project Name: <u>Teck American -</u>			er: <u>B0095010.0005.00001</u>		ers	0					
Project Contact: Kady Young C	ompany: <u>A</u>	rcadis			Containers	109/					
Company/Address: <u>189 North Ce</u>	dar Street	Phone: <u>307-203-3</u>	510 or 810-588-1488			050B					
City, State, Zip: Buffalo, WY 828	34 FAX: <u>3</u>	<u>07-684-5961</u>			r of	nic 3(
Sampler's Signature:					Number	ead/arsenic 3050B/6010					
Sample I.D.	Date	Time	LAB ID	Matrix	Z	lead					REMARKS
258-1-GO1-082117	8/21/17	1503		S	1	X					
G02 1505 S						X					
603	G03 1506 s										
G04											
G05		1510		S	1	X					
G06		1512		S	1	X					
G07		1514		S	1	Χ					
G08		1516		S	1	Х					
G09		1518		S	1	Х					
V G10 V	V	1520		S	. 1	Х					
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Invoice Information			w data)	ŀ							
P.O. # <u>UCR-ALS-D34-17</u>		IV. CI	P Deliverable Report								
Bill to: Cristy Kessel - Teck Americ		X V. ED)								
501 N Riverpoint Blvd, Suite 300 Spoks											
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ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068



Date 8/23//7
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Proje	ect Contact: Kady Yo	oung C	Jompa	ny: <u>A</u>	readis			Containers	8/601						
Com	pany/Address: 189 N	lorth Ce	edar S	<u>treet</u>	Phone: <u>30</u> '	77-203-3510 or 810-588-1488		္	30501						
City,	, State, Zip: <u>Buffalo, '</u>	WY 828	<u>334</u> F/	AX: <u>3</u>	<u>07-684-596</u>	<u>51</u>		er o	enic 3	1					
Samı	pler's Signature:							quin	ead/arsenic 3050B/6010						İ
	Sample I.D.		D:	ate	Time	LAB ID	Matrix	Z	lead					REMARKS	
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	H04 1535						S	1	X						
	H05 1536						S	1	X						
	H06 15 38						S	1	X						
	H07				1540		S	1	X						
	H08				1542		S	1	X						
	H09				1544		S	1	X						
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Reques	sted Report Date:					III. Data Validation Report (includes									
	e Information <u>UCR-ALS-D34-17</u>				I	raw data)									
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all sample lab	els and tags	agree with	custody	paper	s? <i>Indi</i>	cate m	ajor di	screpai	icies in	the table o	n page 2.	NA	Ŕ	N
re appropriate	bottles/cont	ainers and	volumes	receiv	ed for	the test	s indic	ated?				NA	Ý	
ere the pH-pre	served bottle	s (see SMO	GEN SO	P) rec	eived a	the ap	propri	ate pH?	Indica	ate in the ta	ble below	NA	Y	_
ere VOA vials	received wit	thout heads	space? In	ndicat	e in the	table l	below.					NA	Y	N
s C12/Res ne	gative?				-							(NA)	Υ	N
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Sample II		Bottle Bottle	Count Type	Out of Temp	Head- space	Broke	pH	Re	igent	Volume added	Reagent Lo	i	itials	Time
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Total Solids

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Client: Teck American Incorporated

Service Request: K1708981 **Date Collected:** 08/21/17 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Received:** 08/24/17

Sample Matrix:

Analysis Method:

Soil

160.3 Modified Units: Percent

Prep Method: None Basis: As Received

Solids, Total

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
258-1-G01-082117	K1708981-001	96.4	=	=	1	08/31/17 16:53	
258-1-G02-082117	K1708981-002	97.0	-	-	1	08/31/17 16:53	
258-1-G03-082117	K1708981-003	98.4	-	-	1	08/31/17 16:53	
258-1-G04-082117	K1708981-004	97.4	-	-	1	08/31/17 16:53	
258-1-G05-082117	K1708981-005	97.1	-	=	1	08/31/17 16:53	
258-1-G06-082117	K1708981-006	96.3	-	-	1	08/31/17 16:53	
258-1-G07-082117	K1708981-007	98.2	-	-	1	08/31/17 16:53	
258-1-G08-082117	K1708981-008	95.2	-	-	1	08/31/17 16:53	
258-1-G09-082117	K1708981-009	97.4	-	-	1	08/31/17 16:53	
258-1-G10-082117	K1708981-010	97.9	-	=	1	08/31/17 16:53	
258-1-H01-082117	K1708981-011	96.0	-	-	1	08/31/17 16:53	
258-1-H02-082117	K1708981-012	95.9	-	-	1	08/31/17 16:53	
258-1-H03-082117	K1708981-013	97.6	-	-	1	08/31/17 16:53	
258-1-H04-082117	K1708981-014	97.2	-	-	1	08/31/17 16:53	
258-1-H05-082117	K1708981-015	96.3	-	=	1	08/31/17 16:53	
258-1-H06-082117	K1708981-016	96.2	-	-	1	08/31/17 16:53	
258-1-H07-082117	K1708981-017	97.1	-	-	1	08/31/17 16:53	
258-1-H08-082117	K1708981-018	97.2	-	-	1	08/31/17 16:53	
258-1-H09-082117	K1708981-019	96.3	-	-	1	08/31/17 16:53	
258-1-H10-082117	K1708981-020	98.5	-	-	1	08/31/17 16:53	

QA/QC Report

Client: Teck American Incorporated

Project August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Analysis Method:

160.3 Modified

Prep Method: None

Service Request:K1708981

Date Collected:08/21/17 **Date Received:**08/24/17

Units:Percent

Basis: As Received

Replicate Sample Summary Inorganic Parameters

			Sample	Duplicate			RPD	Date
Sample Name:	Lab Code:	MRL	Result	Result	Average	RPD	Limit	Analyzed
258-1-G01-082117	K1708981-001DUP	-	96.4	96.6	96.5	<1	20	08/31/17
258-1-H01-082117	K1708981-011DUP	-	96.0	96.7	96.4	<1	20	08/31/17

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Printed 09/12/17 5:07:28 PM Superset Reference:17-0000435538 rev 00



Metals

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Client: Teck American Incorporated

Service Request: K1708981 **Date Collected:** 08/21/17 15:03 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 258-1-G01-082117 Basis: Dry

Lab Code: K1708981-001

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q 25.5 Arsenic 6010C mg/Kg 4.1 0.8 2 09/07/17 16:37 09/06/17 Lead 6010C 315 mg/Kg2.1 0.4 2 09/07/17 16:37 09/06/17

Analytical Report

Service Request: K1708981

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/21/17 15:05

Sample Matrix: Soil Date Received: 08/24/17 10:20

Sample Name: 258-1-G02-082117 **Basis:** Dry

Lab Code: K1708981-002

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 13.5 mg/Kg 3.9 0.8 2 09/07/17 16:54 09/06/17 Lead 6010C 164 mg/Kg1.9 0.4 2 09/07/17 16:54 09/06/17

Analytical Report

Service Request: K1708981

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/21/17 15:06

Sample Matrix: Soil Date Received: 08/24/17 10:20

Sample Name: 258-1-G03-082117 **Basis:** Dry

Lab Code: K1708981-003

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 11.1 mg/Kg 4.0 0.8 2 09/07/17 16:56 09/06/17 Lead 6010C 172 mg/Kg2.0 0.4 2 09/07/17 16:56 09/06/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708981 **Date Collected:** 08/21/17 15:08 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Date Received: 08/24/17 10:20

Sample Name: 258-1-G04-082117 Basis: Dry

Lab Code: K1708981-004

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	ate Extracted	Q
Arsenic	6010C	16.2	mg/Kg	3.9	0.8	2	09/07/17 16:59	09/06/17	
Lead	6010C	270	mg/Kg	2.0	0.4	2	09/07/17 16:59	09/06/17	

Analytical Report

Service Request: K1708981

Client: Teck American Incorporated

> **Date Collected:** 08/21/17 15:10 August 2017 Sampling SAT Study/B0095010.0005.00001

Project: Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 258-1-G05-082117 Basis: Dry

Lab Code: K1708981-005

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 20.8 mg/Kg 4.0 0.8 2 09/07/17 17:01 09/06/17 Lead 6010C 312 mg/Kg2.0 0.4 2 09/07/17 17:01 09/06/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708981 **Date Collected:** 08/21/17 15:12 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 258-1-G06-082117 Basis: Dry

Lab Code: K1708981-006

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 24.4 mg/Kg 4.1 0.8 2 09/07/17 17:03 09/06/17 Lead 6010C 252 mg/Kg2.1 0.4 2 09/07/17 17:03 09/06/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708981 **Date Collected:** 08/21/17 15:14 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Date Received: 08/24/17 10:20 **Sample Matrix:** Soil

Sample Name: 258-1-G07-082117 Basis: Dry

Lab Code: K1708981-007

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	ate Extracted	Q
Arsenic	6010C	10.0	mg/Kg	3.9	0.8	2	09/07/17 17:05	09/06/17	
Lead	6010C	94.7	mg/Kg	2.0	0.4	2	09/07/17 17:05	09/06/17	

Analytical Report

Client: Teck American Incorporated

Date Collected: 08/21/17 15:16 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Service Request: K1708981

Basis: Dry

Sample Name: 258-1-G08-082117

Lab Code: K1708981-008

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed Date Extracted		
Arsenic	6010C	20.3	mg/Kg	3.9	0.8	2	09/07/17 17:07	09/06/17	
Lead	6010C	294	mg/Kg	19	0.4	2	09/07/17 17:07	09/06/17	

Analytical Report

Service Request: K1708981

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/21/17 15:18

Sample Matrix: Soil Date Received: 08/24/17 10:20

Sample Name: 258-1-G09-082117 **Basis:** Dry

Lab Code: K1708981-009

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 12.8 mg/Kg 3.9 0.8 2 09/07/17 17:09 09/06/17 Lead 6010C 179 mg/Kg1.9 0.4 2 09/07/17 17:09 09/06/17

Analytical Report

Service Request: K1708981

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/21/17 15:20

Sample Matrix: Soil Date Received: 08/24/17 10:20

Sample Name: 258-1-G10-082117 **Basis:** Dry

Lab Code: K1708981-010

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 10.8 mg/Kg 3.9 0.8 2 09/07/17 17:12 09/06/17 Lead 6010C 128 mg/Kg1.9 0.4 2 09/07/17 17:12 09/06/17

Analytical Report

Service Request: K1708981

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/21/17 15:29

Sample Matrix: Soil Date Received: 08/24/17 10:20

Sample Name: 258-1-H01-082117 **Basis:** Dry

Lab Code: K1708981-011

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 14.6 mg/Kg 4.0 0.8 2 09/07/17 17:14 09/06/17 Lead 6010C 225 mg/Kg2.0 0.4 2 09/07/17 17:14 09/06/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708981 **Date Collected:** 08/21/17 15:31 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 258-1-H02-082117 Basis: Dry

Lab Code: K1708981-012

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 10.1 mg/Kg 4.1 0.8 2 09/07/17 17:25 09/06/17 Lead 6010C 173 mg/Kg2.0 0.4 2 09/07/17 17:25 09/06/17

Analytical Report

Service Request: K1708981

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/21/17 15:33

Sample Matrix: Soil Date Received: 08/24/17 10:20

Sample Name: 258-1-H03-082117 **Basis:** Dry

Lab Code: K1708981-013

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 9.1 mg/Kg 3.9 0.8 2 09/07/17 17:27 09/06/17 Lead 6010C **120** mg/Kg2.0 0.4 2 09/07/17 17:27 09/06/17

Analytical Report

Service Request: K1708981

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/21/17 15:35

Sample Matrix: Soil Date Received: 08/24/17 10:20

Sample Name: 258-1-H04-082117 **Basis:** Dry

Lab Code: K1708981-014

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 18.4 mg/Kg 4.0 0.8 2 09/07/17 17:29 09/06/17 Lead 6010C **201** mg/Kg2.0 0.4 2 09/07/17 17:29 09/06/17

Analytical Report

Service Request: K1708981

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/21/17 15:36

Sample Matrix: Soil Date Received: 08/24/17 10:20

Sample Name: 258-1-H05-082117 **Basis:** Dry

Lab Code: K1708981-015

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 21.8 mg/Kg 4.1 0.8 2 09/07/17 17:32 09/06/17 Lead 6010C **398** mg/Kg2.0 0.4 2 09/07/17 17:32 09/06/17

Printed 9/8/2017 12:30:07 PM Superset Reference:

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Analytical Report

Service Request: K1708981

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/21/17 15:38

Sample Matrix: Soil Date Received: 08/24/17 10:20

Sample Name: 258-1-H06-082117 **Basis:** Dry

Lab Code: K1708981-016

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 16.5 mg/Kg 4.0 0.8 2 09/07/17 17:34 09/06/17 Lead 6010C 330 mg/Kg2.0 0.4 2 09/07/17 17:34 09/06/17

Analytical Report

Service Request: K1708981

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/21/17 15:40

Sample Matrix: Soil Date Received: 08/24/17 10:20

Sample Name: 258-1-H07-082117 **Basis:** Dry

Lab Code: K1708981-017

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 12.3 mg/Kg 3.8 0.8 2 09/07/17 17:36 09/06/17 Lead 6010C 169 mg/Kg1.9 0.4 2 09/07/17 17:36 09/06/17

Analytical Report

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 Da

Sample Matrix: Soil

Date Collected: 08/21/17 15:42

Service Request: K1708981

Date Received: 08/24/17 10:20

Basis: Dry

Sample Name: 258-1-H08-082117

Lab Code: K1708981-018

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	Oate Extracted	Q
Arsenic	6010C	12.9	mg/Kg	4.0	0.8	2	09/07/17 17:38	09/06/17	
Lead	6010C	174	mg/Kg	2.0	0.4	2	09/07/17 17:38	09/06/17	

Total Metals

Printed 9/8/2017 12:30:07 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708981 **Date Collected:** 08/21/17 15:44 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Date Received: 08/24/17 10:20 **Sample Matrix:** Soil

Sample Name: 258-1-H09-082117 Basis: Dry

Lab Code: K1708981-019

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	ate Extracted	Q
Arsenic	6010C	22.8	mg/Kg	3.8	0.8	2	09/07/17 17:40	09/06/17	
Lead	6010C	312	mg/Kg	1.9	0.4	2	09/07/17 17:40	09/06/17	

Analytical Report

Service Request: K1708981

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/21/17 15:46

Sample Matrix: Soil Date Received: 08/24/17 10:20

Sample Name: 258-1-H10-082117 **Basis:** Dry

Lab Code: K1708981-020

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q 15.9 Arsenic 6010C mg/Kg 4.0 0.8 2 09/07/17 17:43 09/06/17 Lead 6010C 198 mg/Kg2.0 0.4 2 09/07/17 17:43 09/06/17

Analytical Report

Client: Teck American Incorporated

eck American Incorporated Service Request: K1708981

Project:August 2017 Sampling SAT Study/B0095010.0005.00001Date Collected:NASample Matrix:SoilDate Received:NA

Sample Name: Method Blank Basis: Dry

Lab Code: KQ1712695-02

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C ND U mg/Kg 4 0.8 2 09/07/17 16:33 09/06/17 Lead 6010C ND U mg/Kg2 0.4 2 09/07/17 16:33 09/06/17

QA/QC Report

Client: Teck American Incorporated

August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: So

Soil

Service Request:

K1708981

Date Collected:

08/21/17

Date Received:

08/24/17

Date Analyzed: Date Extracted: 09/7/17 09/6/17

Duplicate Matrix Spike Summary

Total Metals

Sample Name: Lab Code:

Project:

258-1-G01-082117

K1708981-001

Analysis Method:

6010C

Prep Method:

EPA 3050B

Units:

mg/Kg

Basis:

Dry

Matrix Spike KQ1712695-03 **Duplicate Matrix Spike**

KQ1712695-04

	Sample		Spike			Spike		% Rec		RPD
Analyte Name	Result	Result	Amount	% Rec	Result	Amount	% Rec	Limits	RPD	Limit
Arsenic	25.5	126	103	98	127	103	99	75-125	<1	30
Lead	315	368	103	52 N	358	103	42 N	75-125	3	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

QA/QC Report

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Analyzed:** 09/07/17

Sample Matrix: Soil

Lab Control Sample Summary Total Metals

> Units:mg/Kg Basis:Dry

Service Request: K1708981

Lab Control Sample

KQ1712695-01

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Arsenic	6010C	495	500	99	80-120
Lead	6010C	489	500	98	80-120



ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue Kelso, WA 98626

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September 12, 2017

Analytical Report for Service Request No: K1708982

Dave Enos Teck American Incorporated 501 North Riverpoint Blvd., Suite 300 Spokane, WA 99202

RE: August 2017 Sampling SAT Study / B0095010.0005.00001

Dear Dave.

Enclosed are the results of the sample(s) submitted to our laboratory August 24, 2017 For your reference, these analyses have been assigned our service request number **K1708982**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3330. You may also contact me via email at Jeff.Coronado@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Jeff Coronado Metals Department

Manager



ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue Kelso, WA 98626

T: +1 360 577 7222 F: +1 360 636 1068 www.alsglobal.com

Table of Contents

Acronyms

Qualifiers

State Certifications, Accreditations, And Licenses

Case Narrative

Chain of Custody

Total Solids

Metals

Acronyms

ASTM American Society for Testing and Materials

A2LA American Association for Laboratory Accreditation

CARB California Air Resources Board

CAS Number Chemical Abstract Service registry Number

CFC Chlorofluorocarbon
CFU Colony-Forming Unit

DEC Department of Environmental Conservation

DEQ Department of Environmental Quality

DHS Department of Health Services

DOE Department of Ecology
DOH Department of Health

EPA U. S. Environmental Protection Agency

ELAP Environmental Laboratory Accreditation Program

GC Gas Chromatography

GC/MS Gas Chromatography/Mass Spectrometry

LOD Limit of Detection
LOQ Limit of Quantitation

LUFT Leaking Underground Fuel Tank

M Modified

MCL Maximum Contaminant Level is the highest permissible concentration of a substance

allowed in drinking water as established by the USEPA.

MDL Method Detection Limit
MPN Most Probable Number
MRL Method Reporting Limit

NA Not Applicable
NC Not Calculated

NCASI National Council of the Paper Industry for Air and Stream Improvement

ND Not Detected

NIOSH National Institute for Occupational Safety and Health

PQL Practical Quantitation Limit

RCRA Resource Conservation and Recovery Act

SIM Selected Ion Monitoring

TPH Total Petroleum Hydrocarbons

tr Trace level is the concentration of an analyte that is less than the PQL but greater than or

equal to the MDL.

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- \boldsymbol{Q} $\;\;$ See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L14-51
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	_
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
	https://deq.nc.gov/about/divisions/water-resources/water-resources-	
	data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-	
North Carolina DEQ	certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaborator	
Oregon – DEQ (NELAP)	yAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.



Case Narrative

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

ALS ENVIRONMENTAL

Client:Teck American IncorporatedService Request No.:K1708982Project:August 2017 Sampling SAT Study/Date Received:08/24/17

B0095010.0005.00001

Sample Matrix: Soil

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

Sample Receipt

Eleven soil samples were received for analysis at ALS Environmental on 08/24/17. The samples were received in good condition and consistent with the accompanying chain of custody form, except where noted on the cooler receipt and preservation form included in this report. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Total Metals

No anomalies associated with the analysis of these samples were observed.

Approved by



Chain of Custody

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

Date	8/23/17
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ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

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Total Solids

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708982 **Date Collected:** 08/22/17 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Analysis Method: 160.3 Modified Units: Percent

Prep Method: None Basis: As Received

Date Received: 08/24/17

Solids, Total

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
441-1-B10-082217	K1708982-001	93.2	-	-	1	08/30/17 16:33	
441-1-C01-082217	K1708982-002	90.3	-	-	1	08/30/17 16:33	
441-1-C02-082217	K1708982-003	92.3	-	-	1	08/30/17 16:33	
441-1-C03-082217	K1708982-004	93.0	-	-	1	08/30/17 16:33	
441-1-C04-082217	K1708982-005	93.8	-	-	1	08/30/17 16:33	
441-1-C05-082217	K1708982-006	94.8	-	-	1	08/30/17 16:33	
441-1-C06-082217	K1708982-007	97.1	-	-	1	08/30/17 16:33	
441-1-C07-082217	K1708982-008	92.4	-	-	1	08/30/17 16:33	
441-1-C08-082217	K1708982-009	96.5	-	-	1	08/30/17 16:33	
441-1-C09-082217	K1708982-010	97.3	-	-	1	08/30/17 16:33	
441-1-C10-082217	K1708982-011	95.1	-	-	1	08/30/17 16:33	

QA/QC Report

Client: Teck American Incorporated

Project August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Analysis Method:

160.3 Modified

Prep Method: None

Service Request:K1708982

Date Collected: 08/22/17

Date Received: 08/24/17

Units:Percent

Basis: As Received

Replicate Sample Summary Inorganic Parameters

Sample Name:	Lab Code:	MRL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
441-1-B10-082217	K1708982-001DUP	-	93.2	93.3	93.3	<1	20	08/30/17
441-1-C10-082217	K1708982-011DUP	_	95.1	94.8	95.0	<1	20	08/30/17

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Printed 09/12/17 5:08:17 PM Superset Reference:17-0000435546 rev 00



Metals

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Client: Teck American Incorporated

Service Request: K1708982 **Date Collected:** 08/22/17 16:06 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Date Received: 08/24/17 10:30 **Sample Matrix:** Soil

Sample Name: 441-1-B10-082217 Basis: Dry

Lab Code: K1708982-001

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	Pate Extracted	Q
Arsenic	6010C	36.0	mg/Kg	4.1	0.8	2	09/07/17 17:55	09/06/17	
Lead	6010C	932	mg/Kg	2.1	0.4	2	09/07/17 17:55	09/06/17	

Analytical Report

Service Request: K1708982

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/22/17 16:27

Sample Matrix: Soil Date Received: 08/24/17 10:30

Sample Name: 441-1-C01-082217 **Basis:** Dry

Lab Code: K1708982-002

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 23.1 mg/Kg 4.3 0.9 2 09/07/17 18:07 09/06/17 Lead 6010C 239 mg/Kg2.2 0.4 2 09/07/17 18:07 09/06/17

Analytical Report

Service Request: K1708982

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/22/17 16:28

Sample Matrix: Soil Date Received: 08/24/17 10:30

Sample Name: 441-1-C02-082217 **Basis:** Dry

Lab Code: K1708982-003

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 17.1 mg/Kg 4.2 0.8 2 09/07/17 18:09 09/06/17 Lead 6010C 747 mg/Kg2.1 0.4 2 09/07/17 18:09 09/06/17

Analytical Report

Service Request: K1708982

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/22/17 16:29

Sample Matrix: Soil Date Received: 08/24/17 10:30

Sample Name: 441-1-C03-082217 **Basis:** Dry

Lab Code: K1708982-004

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 19.1 mg/Kg 4.1 0.8 2 09/07/17 18:12 09/06/17 Lead 6010C 61.6 mg/Kg2.1 0.4 2 09/07/17 18:12 09/06/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708982 **Date Collected:** 08/22/17 16:32 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:30

Sample Name: 441-1-C04-082217 Basis: Dry

Lab Code: K1708982-005

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 23.2 mg/Kg 4.2 0.8 2 09/07/17 18:14 09/06/17 Lead 6010C 115 mg/Kg2.1 0.4 2 09/07/17 18:14 09/06/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708982 **Date Collected:** 08/22/17 16:33 August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:30

Sample Name: 441-1-C05-082217 Basis: Dry

Lab Code: K1708982-006

Project:

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 24.1 mg/Kg 4.1 0.8 2 09/07/17 18:23 09/06/17 Lead 6010C 367 mg/Kg2.0 0.4 2 09/07/17 18:23 09/06/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708982 **Date Collected:** 08/22/17 16:34 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:30

Sample Name: 441-1-C06-082217 Basis: Dry

Lab Code: K1708982-007

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q 25.2 Arsenic 6010C mg/Kg 4.0 0.8 2 09/07/17 18:25 09/06/17 Lead 6010C 60.8 mg/Kg2.0 0.4 2 09/07/17 18:25 09/06/17

Analytical Report

Service Request: K1708982

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/22/17 16:36

Sample Matrix: Soil Date Received: 08/24/17 10:30

Sample Name: 441-1-C07-082217 **Basis:** Dry

Lab Code: K1708982-008

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 21.5 mg/Kg 4.0 0.8 2 09/07/17 18:27 09/06/17 Lead 6010C **376** mg/Kg2.0 0.4 2 09/07/17 18:27 09/06/17

Analytical Report

Service Request: K1708982

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/22/17 16:39

Sample Matrix: Soil Date Received: 08/24/17 10:30

Sample Name: 441-1-C08-082217 **Basis:** Dry

Lab Code: K1708982-009

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 14.1 mg/Kg 4.0 0.8 2 09/07/17 18:30 09/06/17 Lead 6010C 21.7 mg/Kg2.0 0.4 2 09/07/17 18:30 09/06/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708982 **Date Collected:** 08/22/17 16:40 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Date Received: 08/24/17 10:30

Sample Name: 441-1-C09-082217 Basis: Dry

Lab Code: K1708982-010

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed Date Extracted		
Arsenic	6010C	22.3	mg/Kg	4.0	0.8	2	09/07/17 18:32	09/06/17	
Lead	6010C	231	mg/Kg	2.0	0.4	2	09/07/17 18:32	09/06/17	

Analytical Report

Client: Teck American Incorporated

Service Request: K1708982 **Date Collected:** 08/22/17 16:42 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:30

Sample Name: 441-1-C10-082217 Basis: Dry

Lab Code: K1708982-011

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 76.6 mg/Kg 4.1 0.8 2 09/07/17 18:34 09/06/17 Lead 6010C 1770 mg/Kg2.1 0.4 2 09/07/17 18:34 09/06/17

Analytical Report

Client: Teck American Incorporated Service Request: K1708982

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 Date Collected: NA

Sample Matrix: Soil Date Received: NA

Sample Name:

Method Blank

Basis: Dry

Lab Code: KQ1712696-02

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	ate Extracted	Q
Arsenic	6010C	ND U	mg/Kg	4	0.8	2	09/07/17 17:45	09/06/17	
Lead	6010C	ND U	mg/Kg	2	0.4	2	09/07/17 17:45	09/06/17	

QA/QC Report

Client: Teck American Incorporated

August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

K1708982

Date Collected: Date Received:

08/22/17

Date Analyzed:

Service Request:

08/24/17

Date Extracted:

09/7/17 09/6/17

Duplicate Matrix Spike Summary

Total Metals

Sample Name:

441-1-B10-082217

Units: Basis: mg/Kg

Dry

Lab Code:

Project:

K1708982-001

Analysis Method: Prep Method:

6010C

EPA 3050B

Matrix Spike

Duplicate Matrix Spike

KQ1712696-04

KQ1712696-03

	Sample		Spike			Spike		% Rec		RPD
Analyte Name	Result	Result	Amount	% Rec	Result	Amount	% Rec	Limits	RPD	Limit
Arsenic	36.0	137	105	96	133	106	91	75-125	3	30
Lead	932	956	105	23 #	846	106	-81 #	75-125	12	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

QA/QC Report

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Lab Control Sample Summary Total Metals

Units:mg/Kg
Basis:Dry

Service Request: K1708982

Date Analyzed: 09/07/17

Lab Control Sample

KQ1712696-01

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Arsenic	6010C	477	495	96	80-120
Lead	6010C	479	495	97	80-120



ALS Environmental
ALS Group USA, Corp
1317 South 13th Avenue
Kelso, WA 98626

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September 12, 2017

Analytical Report for Service Request No: K1708983

Dave Enos Teck American Incorporated 501 North Riverpoint Blvd., Suite 300 Spokane, WA 99202

RE: August 2017 Sampling SAT Study / B0095010.0005.00001

Dear Dave,

Enclosed are the results of the sample(s) submitted to our laboratory August 24, 2017 For your reference, these analyses have been assigned our service request number **K1708983**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3330. You may also contact me via email at Jeff.Coronado@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Jeff Coronado Metals Department

Manager



ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue Kelso, WA 98626

T: +1 360 577 7222 F: +1 360 636 1068 www.alsglobal.com

Table of Contents

Acronyms

Qualifiers

State Certifications, Accreditations, And Licenses

Case Narrative

Chain of Custody

Total Solids

Metals

Acronyms

ASTM American Society for Testing and Materials

A2LA American Association for Laboratory Accreditation

CARB California Air Resources Board

CAS Number Chemical Abstract Service registry Number

CFC Chlorofluorocarbon
CFU Colony-Forming Unit

DEC Department of Environmental Conservation

DEQ Department of Environmental Quality

DHS Department of Health Services

DOE Department of Ecology
DOH Department of Health

EPA U. S. Environmental Protection Agency

ELAP Environmental Laboratory Accreditation Program

GC Gas Chromatography

GC/MS Gas Chromatography/Mass Spectrometry

LOD Limit of Detection
LOQ Limit of Quantitation

LUFT Leaking Underground Fuel Tank

M Modified

MCL Maximum Contaminant Level is the highest permissible concentration of a substance

allowed in drinking water as established by the USEPA.

MDL Method Detection Limit
MPN Most Probable Number
MRL Method Reporting Limit

NA Not Applicable
NC Not Calculated

NCASI National Council of the Paper Industry for Air and Stream Improvement

ND Not Detected

NIOSH National Institute for Occupational Safety and Health

PQL Practical Quantitation Limit

RCRA Resource Conservation and Recovery Act

SIM Selected Ion Monitoring

TPH Total Petroleum Hydrocarbons

tr Trace level is the concentration of an analyte that is less than the PQL but greater than or

equal to the MDL.

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L14-51
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	_
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
	https://deq.nc.gov/about/divisions/water-resources/water-resources-	
	data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-	
North Carolina DEQ	certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaborator	
Oregon – DEQ (NELAP)	yAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.



Case Narrative

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

ALS ENVIRONMENTAL

Client: Teck American Incorporated Service Request No.: K1708983

Project: August 2017 Sampling SAT Study/ Date Received: 08/24/17

B0095010.0005.00001

Sample Matrix: Soil

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

Sample Receipt

Twenty soil samples were received for analysis at ALS Environmental on 08/24/17. The samples were received in good condition and consistent with the accompanying chain of custody form, except where noted on the cooler receipt and preservation form included in this report. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Total Metals

Matrix Spike Recovery Exceptions:

The matrix spike recoveries of Lead for sample 258-1-I01-082117 were outside control criteria. However, the analyte concentration in this sample was significantly higher than the added spike concentration, preventing accurate evaluation of the spike recoveries. Recovery in the Laboratory Control Sample (LCS) was acceptable, which indicates the analytical batch was in control. No further corrective action was appropriate.

No other anomalies associated with the analysis of these samples were observed.

Approved by



Chain of Custody

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068



Date 8/23/17 PAGE 12 OF 15 SR#

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ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068



Date 8/23/17
PAGE 14 OF 15
SR#

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Cooler Receipt and Preservation Form Service Request K17 Unloaded: Opened: 0 Samples were received via? **USPS** DHL Courier Hand Delivered Samples were received in: (circle) Cooler Box Envelope Other NA Were custody seals on coolers? N If yes, how many and where? If present, were custody seals intact? If present, were they signed and dated? N Ν Cooler/COC ID Tracking Number Corr. Thermometer Raw Filed Factor Packing material: Inserts (Baggies) Bubble Wrap Gel Packs (Wet Ice) Dry Ice Were custody papers properly filled out (ink, signed, etc.)? NA N Were samples received in good condition (temperature, unbroken)? Indicate in the table below. N If applicable, tissue samples were received: Partially Thawed Frozen Thawed Were all sample labels complete (i.e analysis, preservation, etc.)? N Did all sample labels and tags agree with custody papers? Indicate major discrepancies in the table on page 2. NA Were appropriate bottles/containers and volumes received for the tests indicated? NA N Were the pH-preserved bottles (see SMO GEN SOP) received at the appropriate pH? Indicate in the table below Were VOA vials received without headspace? Indicate in the table below. Was C12/Res negative? Sample ID on Bottle Sample ID on COC Identified by: Reagent Lot Number **Bottle Count** Out of Head Volume Initials Sample ID Temp space Broke Reagent added Time **Bottle Type** Discrepancies, & Resolutions:



Total Solids

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Client: Teck American Incorporated

Service Request: K1708983 **Date Collected:** 08/21/17 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix:

Analysis Method:

Soil

160.3 Modified Units: Percent

Prep Method: None Basis: As Received

Date Received: 08/24/17

Solids, Total

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
258-1-I01-082117	K1708983-001	98.3	-	-	1	08/31/17 16:53	
258-1-I02-082117	K1708983-002	96.6	-	-	1	08/31/17 16:53	
258-1-I03-082117	K1708983-003	96.9	-	-	1	08/31/17 16:53	
258-1-I04-082117	K1708983-004	96.4	-	-	1	08/31/17 16:53	
258-1-I05-082117	K1708983-005	98.0	-	-	1	08/31/17 16:53	
258-1-I06-082117	K1708983-006	97.1	-	-	1	08/31/17 16:53	
258-1-I07-082117	K1708983-007	97.1	-	-	1	08/31/17 16:53	
258-1-I08-082117	K1708983-008	97.9	-	-	1	08/31/17 16:53	
258-1-I09-082117	K1708983-009	97.9	-	-	1	08/31/17 16:53	
258-1-I10-082117	K1708983-010	98.1	-	-	1	08/31/17 16:53	
258-1-J01-082117	K1708983-011	95.7	-	-	1	08/31/17 16:53	
258-1-J02-082117	K1708983-012	96.3	-	-	1	08/31/17 16:53	
258-1-J03-082117	K1708983-013	97.9	-	-	1	08/31/17 16:53	
258-1-J04-082117	K1708983-014	96.5	-	-	1	08/31/17 16:53	
258-1-J05-082117	K1708983-015	96.3	-	-	1	08/31/17 16:53	
258-1-J06-082117	K1708983-016	96.5	-	-	1	08/31/17 16:53	
258-1-J07-082117	K1708983-017	98.2	-	-	1	08/31/17 16:53	
258-1-J08-082117	K1708983-018	97.7	-	-	1	08/31/17 16:53	
258-1-J09-082117	K1708983-019	98.1	-	-	1	08/31/17 16:53	
258-1-J10-082117	K1708983-020	98.5	-	-	1	08/31/17 16:53	

QA/QC Report

Client: Teck American Incorporated

Project August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Analysis Method:

160.3 Modified

Prep Method: None

Service Request: K1708983

Date Collected:08/21/17

Date Received: 08/24/17

Units:Percent

Basis: As Received

Replicate Sample Summary Inorganic Parameters

C I N	T 1 C 1		Sample	Duplicate			RPD	Date
Sample Name:	Lab Code:	MRL	Result	Result	Average	RPD	Limit	Analyzed
258-1-I01-082117	K1708983-001DUP	=	98.3	98.3	98.3	<1	20	08/31/17
258-1-J01-082117	K1708983-011DUP	-	95.7	96.1	95.9	<1	20	08/31/17

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Printed 09/12/17 5:09:09 PM Superset Reference:17-0000435542 rev 00



Metals

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Client: Teck American Incorporated

Service Request: K1708983 **Date Collected:** 08/21/17 16:04 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Date Received: 08/24/17 10:20

Sample Name: 258-1-I01-082117 Basis: Dry

Lab Code: K1708983-001

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed I	Oate Extracted	Q
Arsenic	6010C	21.7	mg/Kg	3.9	0.8	2	09/07/17 18:41	09/06/17	
Lead	6010C	284	mg/Kg	19	0.4	2.	09/07/17 18:41	09/06/17	

Analytical Report

Client: Teck American Incorporated

Service Request: K1708983 **Date Collected:** 08/21/17 16:05 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 258-1-I02-082117 Basis: Dry

Lab Code: K1708983-002

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 17.7 mg/Kg 4.1 0.8 2 09/07/17 18:58 09/06/17 Lead 6010C 333 mg/Kg2.0 0.4 2 09/07/17 18:58 09/06/17

Analytical Report

Service Request: K1708983

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/21/17 16:07

Sample Matrix: Soil Date Received: 08/24/17 10:20

Sample Name: 258-1-I03-082117 **Basis:** Dry

Lab Code: K1708983-003

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 16.3 mg/Kg 4.0 0.8 2 09/07/17 19:01 09/06/17 Lead 6010C 434 mg/Kg2.0 0.4 2 09/07/17 19:01 09/06/17

Analytical Report

Service Request: K1708983

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/21/17 16:09

Sample Matrix: Soil Date Received: 08/24/17 10:20

Sample Name: 258-1-I04-082117 **Basis:** Dry

Lab Code: K1708983-004

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 19.7 mg/Kg 4.1 0.8 2 09/07/17 19:03 09/06/17 Lead 6010C 315 mg/Kg2.1 0.4 2 09/07/17 19:03 09/06/17

Analytical Report

Service Request: K1708983

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/21/17 16:10

Sample Matrix: Soil Date Received: 08/24/17 10:20

Sample Name: 258-1-I05-082117 **Basis:** Dry

Lab Code: K1708983-005

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 9.2 mg/Kg 3.9 0.8 2 09/07/17 19:05 09/06/17 Lead 6010C 95.5 mg/Kg1.9 0.4 2 09/07/17 19:05 09/06/17

Analytical Report

Service Request: K1708983

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/21/17 16:12

Sample Matrix: Soil Date Received: 08/24/17 10:20

Sample Name: 258-1-I06-082117 **Basis:** Dry

Lab Code: K1708983-006

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	ate Extracted	Q
Arsenic	6010C	10.4	mg/Kg	3.7	0.7	2	09/07/17 19:07	09/06/17	
Lead	6010C	82.7	mg/Kg	1.9	0.4	2	09/07/17 19:07	09/06/17	

Analytical Report

Client: Teck American Incorporated

Service Request: K1708983 **Date Collected:** 08/21/17 16:14 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 258-1-I07-082117 Basis: Dry

Lab Code: K1708983-007

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 13.6 mg/Kg 4.0 0.8 2 09/07/17 19:09 09/06/17 Lead 6010C 185 mg/Kg2.0 0.4 2 09/07/17 19:09 09/06/17

Analytical Report

Service Request: K1708983

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/21/17 16:16

Sample Matrix: Soil Date Received: 08/24/17 10:20

Sample Name: 258-1-I08-082117 **Basis:** Dry

Lab Code: K1708983-008

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 12.0 mg/Kg 3.8 0.8 2 09/07/17 19:12 09/06/17 Lead 6010C 153 mg/Kg1.9 0.4 2 09/07/17 19:12 09/06/17

Analytical Report

Service Request: K1708983

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/21/17 16:18

Sample Matrix: Soil Date Received: 08/24/17 10:20

Sample Name: 258-1-I09-082117 **Basis:** Dry

Lab Code: K1708983-009

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q 15.9 Arsenic 6010C mg/Kg 3.9 0.8 2 09/07/17 19:20 09/06/17 Lead 6010C 248 mg/Kg1.9 0.4 2 09/07/17 19:20 09/06/17

Analytical Report

Service Request: K1708983

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/21/17 16:20

Sample Matrix: Soil Date Received: 08/24/17 10:20

Sample Name: 258-1-I10-082117 **Basis:** Dry

Lab Code: K1708983-010

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 20.3 mg/Kg 4.0 0.8 2 09/07/17 19:22 09/06/17 Lead 6010C 385 mg/Kg2.0 0.4 2 09/07/17 19:22 09/06/17

Analytical Report

Service Request: K1708983

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/21/17 16:27

Sample Matrix: Soil Date Received: 08/24/17 10:20

Sample Name: 258-1-J01-082117 **Basis:** Dry

Lab Code: K1708983-011

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 12.8 mg/Kg 3.8 0.8 2 09/07/17 19:25 09/06/17 Lead 6010C 210 mg/Kg1.9 0.4 2 09/07/17 19:25 09/06/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708983 **Date Collected:** 08/21/17 16:29 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Date Received: 08/24/17 10:20 **Sample Matrix:** Soil

Sample Name: 258-1-J02-082117 Basis: Dry

Lab Code: K1708983-012

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	ate Extracted	Q
Arsenic	6010C	16.4	mg/Kg	4.1	0.8	2	09/07/17 19:27	09/06/17	
Lead	6010C	237	mg/Kg	2.0	0.4	2	09/07/17 19:27	09/06/17	

Analytical Report

Client: Teck American Incorporated

Service Request: K1708983 **Date Collected:** 08/21/17 16:31 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 258-1-J03-082117 Basis: Dry

Lab Code: K1708983-013

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 13.4 mg/Kg 4.0 0.8 2 09/07/17 19:29 09/06/17 Lead 6010C 199 mg/Kg2.0 0.4 2 09/07/17 19:29 09/06/17

Analytical Report

Service Request: K1708983

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/21/17 16:33

Sample Matrix: Soil Date Received: 08/24/17 10:20

Sample Name: 258-1-J04-082117 **Basis:** Dry

Lab Code: K1708983-014

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 19.3 mg/Kg 4.0 0.8 2 09/07/17 19:31 09/06/17 Lead 6010C **407** mg/Kg2.0 0.4 2 09/07/17 19:31 09/06/17

Analytical Report

Service Request: K1708983

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/21/17 16:34

Sample Matrix: Soil Date Received: 08/24/17 10:20

Sample Name: 258-1-J05-082117 **Basis:** Dry

Lab Code: K1708983-015

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 13.6 mg/Kg 4.0 0.8 2 09/07/17 19:33 09/06/17 Lead 6010C 210 mg/Kg2.0 0.4 2 09/07/17 19:33 09/06/17

Analytical Report

Service Request: K1708983

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/21/17 16:36

Sample Matrix: Soil Date Received: 08/24/17 10:20

Sample Name: 258-1-J06-082117 **Basis:** Dry

Lab Code: K1708983-016

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 13.8 mg/Kg 4.0 0.8 2 09/07/17 19:35 09/06/17 Lead 6010C 211 mg/Kg2.0 0.4 2 09/07/17 19:35 09/06/17

Analytical Report

Service Request: K1708983

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/21/17 16:38

Sample Matrix: Soil Date Received: 08/24/17 10:20

Sample Name: 258-1-J07-082117 **Basis:** Dry

Lab Code: K1708983-017

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 12.7 mg/Kg 3.7 0.7 2 09/07/17 19:38 09/06/17 Lead 6010C 184 mg/Kg1.9 0.4 2 09/07/17 19:38 09/06/17

Analytical Report

Service Request: K1708983

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/21/17 16:40

Sample Matrix: Soil Date Received: 08/24/17 10:20

Sample Name: 258-1-J08-082117 **Basis:** Dry

Lab Code: K1708983-018

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 11.7 mg/Kg 4.0 0.8 2 09/07/17 19:40 09/06/17 Lead 6010C 141 mg/Kg2.0 0.4 2 09/07/17 19:40 09/06/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708983 **Date Collected:** 08/21/17 16:42 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 258-1-J09-082117 Basis: Dry

Lab Code: K1708983-019

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 14.5 mg/Kg 3.8 0.8 2 09/07/17 19:48 09/06/17 Lead 6010C 163 mg/Kg1.9 0.4 2 09/07/17 19:48 09/06/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708983 **Date Collected:** 08/21/17 16:44 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 258-1-J10-082117 Basis: Dry

Lab Code: K1708983-020

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 20.7 mg/Kg 3.8 0.8 2 09/07/17 19:51 09/06/17 Lead 6010C **266** mg/Kg1.9 0.4 2 09/07/17 19:51 09/06/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708983

Project: August 2017 Sampling SAT Study/B0095010.0005.00001

Date Collected: NA

Sample Matrix: Soil

0.1

Date Received: NA

Sample Name:

Method Blank

Basis: Dry

Lab Code: KQ1712725-02

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	ate Extracted	Q
Arsenic	6010C	ND U	mg/Kg	4	0.8	2	09/07/17 18:37	09/06/17	
Lead	6010C	ND U	mg/Kg	2	0.4	2	09/07/17 18:37	09/06/17	

QA/QC Report

Client: Teck American Incorporated

August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix:

Date Collected: Date Received:

Service Request:

K1708983 08/21/17

Soil

08/24/17

Date Analyzed: Date Extracted: 09/7/17 09/6/17

Duplicate Matrix Spike Summary

Total Metals

Sample Name:

258-1-I01-082117

Units:

mg/Kg

Lab Code:

Prep Method:

Project:

K1708983-001

Basis:

Dry

Analysis Method:

6010C

EPA 3050B

Matrix Spike KQ1712725-03 **Duplicate Matrix Spike**

KQ1712725-04

	Sample		Spike			Spike		% Rec		RPD
Analyte Name	Result	Result	Amount	% Rec	Result	Amount	% Rec	Limits	RPD	Limit
Arsenic	21.7	109	95.9	91	115	101	93	75-125	5	30
Lead	284	322	95.9	39 N	320	101	36 N	75-125	<1	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

QA/QC Report

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Analyzed:** 09/07/17

Sample Matrix: Soil

Lab Control Sample Summary Total Metals

Units:mg/Kg
Basis:Dry

Service Request: K1708983

Lab Control Sample

KQ1712725-01

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Arsenic	6010C	477	500	95	80-120
Lead	6010C	476	500	95	80-120



ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue Kelso, WA 98626

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September 12, 2017

Analytical Report for Service Request No: K1708984

Dave Enos Teck American Incorporated 501 North Riverpoint Blvd., Suite 300 Spokane, WA 99202

RE: August 2017 Sampling SAT Study / B0095010.0005.00001

Dear Dave.

Enclosed are the results of the sample(s) submitted to our laboratory August 24, 2017 For your reference, these analyses have been assigned our service request number **K1708984**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3330. You may also contact me via email at Jeff.Coronado@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Jeff Coronado Metals Department

Manager



ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue Kelso, WA 98626

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Table of Contents

Acronyms

Qualifiers

State Certifications, Accreditations, And Licenses

Case Narrative

Chain of Custody

Total Solids

Metals

Acronyms

ASTM American Society for Testing and Materials

A2LA American Association for Laboratory Accreditation

CARB California Air Resources Board

CAS Number Chemical Abstract Service registry Number

CFC Chlorofluorocarbon
CFU Colony-Forming Unit

DEC Department of Environmental Conservation

DEQ Department of Environmental Quality

DHS Department of Health Services

DOE Department of Ecology
DOH Department of Health

EPA U. S. Environmental Protection Agency

ELAP Environmental Laboratory Accreditation Program

GC Gas Chromatography

GC/MS Gas Chromatography/Mass Spectrometry

LOD Limit of Detection
LOQ Limit of Quantitation

LUFT Leaking Underground Fuel Tank

M Modified

MCL Maximum Contaminant Level is the highest permissible concentration of a substance

allowed in drinking water as established by the USEPA.

MDL Method Detection Limit
MPN Most Probable Number
MRL Method Reporting Limit

NA Not Applicable
NC Not Calculated

NCASI National Council of the Paper Industry for Air and Stream Improvement

ND Not Detected

NIOSH National Institute for Occupational Safety and Health

PQL Practical Quantitation Limit

RCRA Resource Conservation and Recovery Act

SIM Selected Ion Monitoring

TPH Total Petroleum Hydrocarbons

tr Trace level is the concentration of an analyte that is less than the PQL but greater than or

equal to the MDL.

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L14-51
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	_
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
	https://deq.nc.gov/about/divisions/water-resources/water-resources-	
	data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-	
North Carolina DEQ	certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaborator	
Oregon – DEQ (NELAP)	yAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.



Case Narrative

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

ALS ENVIRONMENTAL

Client: Teck American Incorporated Service Request No.: K1708984

Project: August 2017 Sampling SAT Study/ Date Received: 08/24/17

B0095010.0005.00001

Sample Matrix: Soil

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

Sample Receipt

Fifteen soil samples were received for analysis at ALS Environmental on 08/24/17. The samples were received in good condition and consistent with the accompanying chain of custody form, except where noted on the cooler receipt and preservation form included in this report. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Total Metals

Matrix Spike Recovery Exceptions:

The matrix spike recovery of Lead for sample 258-1-C01-082117 was outside control criteria. Recovery in the Laboratory Control Sample (LCS) was acceptable, which indicated the analytical batch was in control. No further corrective action was appropriate.

No other anomalies associated with the analysis of these samples were observed.

Approved by



Chain of Custody

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

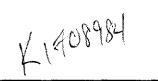


Date 8/23//7
PAGE 3 OF 15

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City, State, Zip: Buffalo, WY 828	City, State, Zip: <u>Buffalo, WY 82834</u> FAX: <u>307-684-5961</u>										
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C07		1239		S	1	X					
C08		124/		S	1	X					
C09	-	1243		S	1	X					
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1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068



Date 8 /23 /17
PAGE 4 OF 15

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Company/Address: 189 North Ced	lar Street	Phone: <u>30</u>	7-203-3 <u>510 or 810-588-1488</u>		Con	lead/arsenic 3050B/6010						
City, State, Zip: Buffalo, WY 8283	34 FAX: 3	07-684-596	i1		Number of	ic 30	·					
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Printed Name: Joe Lathan		13			Printed Name:					Printed Name:		
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Date/Time: 8/23/17 /300		Date/Time:	8124117 WW		Date/Time:					Date/Time:		

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

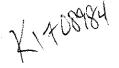


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1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068



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1317 South 13th, Kelso, WA 98626

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1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

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Project Contact: Kady Young Co	əmpany: <u>A</u>	<u>rcadis</u>			Containers	/601						
Company/Address: 189 North Ced	dar Street	Phone: <u>30</u>	7-203-3510 or 810-588-1488			1050B						
City, State, Zip: <u>Buffalo, WY 8283</u>	<u>84</u> FAX: <u>3</u> 6	07-684-596	<u>51</u>		er of	ead/arsenic 3050B/6010						
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1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068



Date 8/23/14
PAGE 13 OF 15

Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001						Analysis Requested							
Project Contact: <u>Kady Young</u> Company: <u>Arcadis</u>													
Company/Address: 189 North Cedar Street Phone: 307-203-3510 or 810-588-1488													
City, State, Zip: <u>Buffalo, WY 82834</u> FAX: <u>307-684-5961</u>													
Sampler's Signature:													
Sample I.D.	Date	Time	LAB ID	Matrix	Number	lead/arsenic 3050B/6010					REMARKS		
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1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068



Date 8/23/17
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Project Name: Teck American - UCR SATES Project Number: B0095010.0005.00001									Analy	sis Requested			
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Signature:					Signature:				Signature:				
Printed Name: Joe Lath		Printed Name: BRUMMAN			Printed Name:					Printed Name:			
Firm: ANA		Firm: AUS			Firm:					Firm:			
Date/Time: 8/23/17 /	300	Date/Time: 8124117 1026			Date/Time:					Date/Time:			



Cooler Receipt and Preservation Form Service Request K17 Opened: 8 Unloaded: X USPS (Fed Ex. UPS Samples were received via? DHL PDX Courier Hand Delivered Samples were received in: (circle) (Cooler_ Box Envelope Other Were custody seals on coolers? If yes, how many and where? N If present, were they signed and dated? If present, were custody seals intact? N Cooler/COC ID Tracking Number Corr. Thermometer Corrected. Corrected NA Filed Factor Packing material: Inserts (Baggies) Bubble Wrap Gel Packs (Wet Ice Dry Ice Sleeves Were custody papers properly filled out (ink, signed, etc.)? NA Ν Were samples received in good condition (temperature, unbroken)? Indicate in the table below. NA N If applicable, tissue samples were received: Frozen Partially Thawed Thawed Were all sample labels complete (i.e analysis, preservation, etc.)? NA N Did all sample labels and tags agree with custody papers? Indicate major discrepancies in the table on page 2. NA N Were appropriate bottles/containers and volumes received for the tests indicated? NA Ν Were the pH-preserved bottles (see SMO GEN SOP) received at the appropriate pH? Indicate in the table below NA: N Were VOA vials received without headspace? Indicate in the table below. NA. N Was C12/Res negative? NA Sample ID on Bottle Identified by: Sample ID on COC Out of Head-**Bottle Count** Volume Reagent Lot Reagent Number Initials Time Sample ID **Bottle Type** Temp space Broke added s, Discrepancies, & Resolutions:

Page___of___



Total Solids

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Analysis Method: 160.3 Modified

Prep Method: None

Service Request: K1708984

Date Collected: 08/21/17 - 08/22/17

Date Received: 08/24/17

Units: Percent

Basis: As Received

Solids, Total

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
258-1-C01-082117	K1708984-001	99.2	-	_	1	08/31/17 16:53	
258-1-C02-082117	K1708984-002	98.9	-	-	1	08/31/17 16:53	
258-1-C03-082117	K1708984-003	98.9	-	-	1	08/31/17 16:53	
258-1-C04-082117	K1708984-004	98.8	-	-	1	08/31/17 16:53	
258-1-C05-082117	K1708984-005	97.1	-	-	1	08/31/17 16:53	
258-1-C06-082117	K1708984-006	95.5	-	-	1	08/31/17 16:53	
258-1-C07-082117	K1708984-007	96.3	-	-	1	08/31/17 16:53	
258-1-C08-082117	K1708984-008	96.1	-	-	1	08/31/17 16:53	
258-1-C09-082117	K1708984-009	97.2	-	-	1	08/31/17 16:53	
258-1-C10-082117	K1708984-010	97.2	-	-	1	08/31/17 16:53	
258-1-C02-082117-D	K1708984-011	98.6	-	-	1	08/31/17 16:53	
258-1-J01-082117-D	K1708984-012	95.1	-	-	1	08/31/17 16:53	
258-1-I07-082117-D	K1708984-013	96.7	-	-	1	08/31/17 16:53	
441-1-I04-082217-D	K1708984-014	94.7	-	-	1	08/31/17 16:53	
441-1-J07-082217-D	K1708984-015	92.3	-	-	1	08/31/17 16:53	

QA/QC Report

Client: Teck American Incorporated

Project August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Analysis Method:

160.3 Modified

Prep Method: None

Service Request:K1708984

Date Collected:08/21/17 **Date Received:**08/24/17

110001100100/21/11

Units:Percent
Basis: As Received

Replicate Sample Summary Inorganic Parameters

			Sample	Duplicate			RPD	Date
Sample Name:	Lab Code:	MRL	Result	Result	Average	RPD	Limit	Analyzed
258-1-C01-082117	K1708984-001DUP	-	99.2	99.3	99.3	<1	20	08/31/17
258-1-C02-082117-D	K1708984-011DUP	-	98.6	98.8	98.7	<1	20	08/31/17

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Printed 09/12/17 5:10:07 PM Superset Reference:17-0000435535 rev 00



Metals

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Client: Teck American Incorporated

Service Request: K1708984 **Date Collected:** 08/21/17 12:27 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 258-1-C01-082117 Basis: Dry

Lab Code: K1708984-001

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 10.3 mg/Kg 3.9 0.8 2 09/07/17 19:57 09/06/17 Lead 6010C 122 mg/Kg2.0 0.4 2 09/07/17 19:57 09/06/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708984 **Date Collected:** 08/21/17 12:30 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 258-1-C02-082117 Basis: Dry

Lab Code: K1708984-002

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 10.4 mg/Kg 3.9 0.8 2 09/07/17 20:08 09/06/17 Lead 6010C 149 mg/Kg1.9 0.4 2 09/07/17 20:08 09/06/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708984 **Date Collected:** 08/21/17 12:32 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 258-1-C03-082117 Basis: Dry

Lab Code: K1708984-003

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 7.9 mg/Kg 3.9 0.8 2 09/07/17 20:16 09/06/17 Lead 6010C 98.8 mg/Kg1.9 0.4 2 09/07/17 20:16 09/06/17

Printed 9/8/2017 12:36:43 PM Superset Reference:

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Analytical Report

Service Request: K1708984

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/21/17 12:34

Sample Matrix: Soil Date Received: 08/24/17 10:20

Sample Name: 258-1-C04-082117 **Basis:** Dry

Lab Code: K1708984-004

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 9.6 mg/Kg 3.7 0.7 2 09/07/17 20:19 09/06/17 Lead 6010C 129 mg/Kg1.9 0.4 2 09/07/17 20:19 09/06/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708984 **Date Collected:** 08/21/17 12:36 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 258-1-C05-082117 Basis: Dry

Lab Code: K1708984-005

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 7.0 mg/Kg 4.1 0.8 2 09/07/17 20:21 09/06/17 Lead 6010C 214 mg/Kg2.0 0.4 2 09/07/17 20:21 09/06/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708984 **Date Collected:** 08/21/17 12:38 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 258-1-C06-082117 Basis: Dry

Lab Code: K1708984-006

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 23.3 mg/Kg 4.2 0.8 2 09/07/17 20:23 09/06/17 Lead 6010C 216 mg/Kg2.1 0.4 2 09/07/17 20:23 09/06/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708984 **Date Collected:** 08/21/17 12:39 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 258-1-C07-082117 Basis: Dry

Lab Code: K1708984-007

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 14.2 mg/Kg 4.1 0.8 2 09/07/17 20:25 09/06/17 Lead 6010C 210 mg/Kg2.0 0.4 2 09/07/17 20:25 09/06/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708984 **Date Collected:** 08/21/17 12:41 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 258-1-C08-082117 Basis: Dry

Lab Code: K1708984-008

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 12.8 mg/Kg 4.1 0.8 2 09/07/17 20:27 09/06/17 Lead 6010C 161 mg/Kg2.1 0.4 2 09/07/17 20:27 09/06/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708984 **Date Collected:** 08/21/17 12:43 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 258-1-C09-082117 Basis: Dry

Lab Code: K1708984-009

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 15.1 mg/Kg 4.0 0.8 2 09/07/17 20:30 09/06/17 Lead 6010C 211 mg/Kg2.0 0.4 2 09/07/17 20:30 09/06/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708984 **Date Collected:** 08/21/17 12:44 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Date Received: 08/24/17 10:20 **Sample Matrix:** Soil

Sample Name: 258-1-C10-082117 Basis: Dry

Lab Code: K1708984-010

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	Q	
Arsenic	6010C	15.0	mg/Kg	4.0	0.8	2	09/07/17 20:32	09/06/17	
Lead	6010C	204	mg/Kg	2.0	0.4	2	09/07/17 20:32	09/06/17	

Analytical Report

Service Request: K1708984

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/21/17 12:30

Sample Matrix: Soil Date Received: 08/24/17 10:20

Sample Name: 258-1-C02-082117-D **Basis:** Dry

Lab Code: K1708984-011

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 9.7 mg/Kg 4.0 0.8 2 09/07/17 20:34 09/06/17 Lead 6010C 151 mg/Kg2.0 0.4 2 09/07/17 20:34 09/06/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1708984 **Date Collected:** 08/21/17 16:27 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/24/17 10:20

Sample Name: 258-1-J01-082117-D Basis: Dry

Lab Code: K1708984-012

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 13.7 mg/Kg 3.9 0.8 2 09/07/17 20:36 09/06/17 Lead 6010C 231 mg/Kg1.9 0.4 2 09/07/17 20:36 09/06/17

Printed 9/8/2017 12:36:43 PM Superset Reference:

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Analytical Report

Service Request: K1708984

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/21/17 16:14

Sample Matrix: Soil Date Received: 08/24/17 10:20

Sample Name: 258-1-I07-082117-D **Basis:** Dry

Lab Code: K1708984-013

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 12.8 mg/Kg 4.0 0.8 2 09/07/17 20:45 09/06/17 Lead 6010C **190** mg/Kg2.0 0.4 2 09/07/17 20:45 09/06/17

Analytical Report

Service Request: K1708984

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/22/17 18:47

Sample Matrix: Soil Date Received: 08/24/17 10:20

Sample Name: 441-1-I04-082217-D **Basis:** Dry

Lab Code: K1708984-014

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 20.3 mg/Kg 4.1 0.8 2 09/07/17 20:47 09/06/17 Lead 6010C **156** mg/Kg2.1 0.4 2 09/07/17 20:47 09/06/17

Printed 9/8/2017 12:36:43 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated

Service Request: K1708984 **Date Collected:** 08/22/17 19:06 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Date Received: 08/24/17 10:20

Sample Name: 441-1-J07-082217-D Basis: Dry

Lab Code: K1708984-015

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	ate Extracted	Q
Arsenic	6010C	21.6	mg/Kg	4.2	0.8	2	09/07/17 20:49	09/06/17	
Lead	6010C	217	mg/Kg	2.1	0.4	2	09/07/17 20:49	09/06/17	

Printed 9/8/2017 12:36:44 PM Superset Reference:

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Analytical Report

Client: Teck American Incorporated Service Request: K1708984

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 Date Collected: NA

Sample Matrix:

Soil

Date Received: NA

Sample Name:

Method Blank

Basis: Dry

Lab Code: KQ1712726-02

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	ate Extracted	Q
Arsenic	6010C	ND U	mg/Kg	4	0.8	2	09/07/17 19:53	09/06/17	
Lead	6010C	ND U	mg/Kg	2	0.4	2	09/07/17 19:53	09/06/17	

QA/QC Report

Client: Teck American Incorporated

August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Service Request: Date Collected:

K1708984

08/21/17

Date Received: Date Analyzed: 08/24/17

Date Extracted:

09/7/17 09/6/17

Duplicate Matrix Spike Summary

Total Metals

Sample Name:

258-1-C01-082117

Units: Basis:

mg/Kg

Dry

Lab Code:

Project:

K1708984-001

Analysis Method: Prep Method:

6010C

EPA 3050B

Duplicate Matrix Spike

			KQ1712726-03			KQ1712	726-04			
	Sample		Spike			Spike		% Rec		RPD
Analyte Name	Result	Result	Amount	% Rec	Result	Amount	% Rec	Limits	RPD	Limit
Arsenic	10.3	100	94.3	95	105	99.8	95	75-125	5	30
Lead	122	171	94.3	52 N	174	99.8	52 N	75-125	2	30

Matrix Spike

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

QA/QC Report

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Service Request: K1708984 Date Analyzed: 09/07/17

Lab Control Sample Summary Total Metals

Units:mg/Kg
Basis:Dry

Lab Control Sample

KQ1712726-01

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Arsenic	6010C	487	500	97	80-120
Lead	6010C	480	500	96	80-120



ALS Environmental
ALS Group USA, Corp
1317 South 13th Avenue
Kelso, WA 98626

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F:+1 360 636 1068 www.alsglobal.com

September 12, 2017

Analytical Report for Service Request No: K1709014

Dave Enos Teck American Incorporated 501 North Riverpoint Blvd., Suite 300 Spokane, WA 99202

RE: August 2017 Sampling SAT Study / B0095010.0005.00001

Dear Dave.

Enclosed are the results of the sample(s) submitted to our laboratory August 25, 2017 For your reference, these analyses have been assigned our service request number **K1709014**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3330. You may also contact me via email at Jeff.Coronado@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Jeff Coronado Metals Department

Manager



ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue Kelso, WA 98626

T: +1 360 577 7222 F: +1 360 636 1068 www.alsglobal.com

Table of Contents

Acronyms

Qualifiers

State Certifications, Accreditations, And Licenses

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Total Solids

Metals

Acronyms

ASTM American Society for Testing and Materials

A2LA American Association for Laboratory Accreditation

CARB California Air Resources Board

CAS Number Chemical Abstract Service registry Number

CFC Chlorofluorocarbon
CFU Colony-Forming Unit

DEC Department of Environmental Conservation

DEQ Department of Environmental Quality

DHS Department of Health Services

DOE Department of Ecology
DOH Department of Health

EPA U. S. Environmental Protection Agency

ELAP Environmental Laboratory Accreditation Program

GC Gas Chromatography

GC/MS Gas Chromatography/Mass Spectrometry

LOD Limit of Detection
LOQ Limit of Quantitation

LUFT Leaking Underground Fuel Tank

M Modified

MCL Maximum Contaminant Level is the highest permissible concentration of a substance

allowed in drinking water as established by the USEPA.

MDL Method Detection Limit
MPN Most Probable Number
MRL Method Reporting Limit

NA Not Applicable
NC Not Calculated

NCASI National Council of the Paper Industry for Air and Stream Improvement

ND Not Detected

NIOSH National Institute for Occupational Safety and Health

PQL Practical Quantitation Limit

RCRA Resource Conservation and Recovery Act

SIM Selected Ion Monitoring

TPH Total Petroleum Hydrocarbons

tr Trace level is the concentration of an analyte that is less than the PQL but greater than or

equal to the MDL.

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L14-51
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	_
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
	https://deq.nc.gov/about/divisions/water-resources/water-resources-	
	data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-	
North Carolina DEQ	certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaborator	
Oregon – DEQ (NELAP)	yAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.



Case Narrative

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

ALS ENVIRONMENTAL

Client: Teck American Incorporated Service Request No.: K1709014

Project: August 2017 Sampling SAT Study/ Date Received: 08/25/17

B0095010.0005.00001

Sample Matrix: Soil

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

Sample Receipt

Twenty soil samples were received for analysis at ALS Environmental on 08/25/17. The samples were received in good condition and consistent with the accompanying chain of custody form, except where noted on the cooler receipt and preservation form included in this report. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Total Metals

Matrix Spike Recovery Exceptions:

The matrix spike recoveries of Lead for sample 441-1-D01-082217 were outside control criteria. However, the analyte concentration in this sample was significantly higher than the added spike concentration, preventing accurate evaluation of the spike recoveries. Recovery in the Laboratory Control Sample (LCS) was acceptable, which indicates the analytical batch was in control. No further corrective action was appropriate.

No other anomalies associated with the analysis of these samples were observed.

Approved by



Chain of Custody

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068



Date 8/23/17
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Project Contact: <u>Kady Young</u> C	Company: <u>A</u>	rcadis			Containers	(09/						
Company/Address: 189 North Co	<u>edar Street</u>	Phone: <u>307-</u>	2 <u>03-3510 or 810-588-1488</u>			050E						
City, State, Zip: Buffalo, WY 828	834 FAX: <u>3</u>	07-684-596 <u>1</u>			r of	lic 3(l					
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Sample I.D.	Date	Time	LAB ID	Matrix	Ž	ead/:))		REMARKS	
441-1- Dol-082217	8/22/17	1645		S	1	X					ALBAYAT SALAMA	
1 202	1	1646		S	1	X						—
Dog		1649		S	1	X						
D04		1656		S	1	X						
D05		1652		S	1	X						
Dob	 	1654		S	1	X						
D07		1656		s	1	X						
D08		1659		S	1	Х						
D09		1700		s	1	X						
V DIO V	\ \	170		S	1	Х						
TURNAROUND REQUIREMENT		R	EPORT REQUIREMENTS		Comi	nents/Spe	cial Instru	ections:				
24 hr 48 hr	5 day	I.	Routine Report: Results, Method B	lank,	Hold	Remainde	er					- 1
X Standard (10 days)			Surrogate, as required									
Provide FAX Preliminary R Requested Report Date:	esuits		. Report Dup., MS, MSD as require 1. Data Validation Report (includes	a								١
Invoice Information			raw data)									
P.O. # <u>UCR-ALS-D34-17</u>		IV	/. CLP Deliverable Report									
Bill to: Cristy Kessel - Teck Americ	can		. EDD									
501 N Riverpoint Blvd, Suite 300 Spok	ane, WA 9926											
RELINQUISHED BY:		RECEIVED			RELI	NQUISH	ED BY:		P	RECEIVE	D BY:	
Signature: Ja July			socio,		Signat	ure:			s	ignature:		[
Printed Name: Joe Lot	han				Printed Name:				Р	Printed Name:		
Firm: ANA		•	5kelso	_	Firm:				F	Firm:		
Date/Time: <u>8/23/17</u> /	300	Date/Time: _	425117 0520		Date/7	ime:	·			Date/Time:		[

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068



Date 8/23/17
PAGE 7 OF 15
SR#

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					t Number: <u>B0095010.0005.00001</u>	İ	ers	01					
Project	t Contact: <u>Kady Y</u>	oung (Company: <u>A</u>	<u>rcadis</u>			Containers	3/601		ĺ			
Compa	iny/Address: 189	North Co	<u>edar Street</u>	Phone: <u>30</u>	7-2 <u>0</u> 3-3510 or <u>810-5</u> 88-1488		Col	1020					
City, S	tate, Zip: <u>Buffalo</u>	WY 828	334 FAX: <u>3</u>	07-684-590	<u>51</u>		ir of	nic 3					
Sample	er's Signature:						Number	lead/arsenic 3050B/6010					=
	Sample I.D.		Date	Time	LAB ID	Matrix	Z	lead					REMARKS
441-1	-EOI -082	217	8/22/17	1765		S	1	X					
	EOZ		-	1706		S	1	X					
	603			1708		S	1	X					
	E04			1710		S	1	X					
	E05			1712		S	1	X					
	E06			1714		S	1	X					
	E07			1721		S	1	Х					
	E08			1718		s	1	Х					
	E09			1723		S	1	X					
V	E(0	V	V	1726		S	1	Х					
rurnar	OUND REQUIR	EMENT	S		REPORT REQUIREMENTS		Comr	nents/Spe	cial Instru	ctions:			
	hr 48 hr		5 day		I. Routine Report: Results, Method Bl	ank,	Hold	Remainde	er				
	andard (10 days) ovide FAX Prelin		esults	x	Surrogate, as required II. Report Dup., MS, MSD as required	1							
	ed Report Date:	-	CSUILS		III. Data Validation Report (includes	•							
Invoice I	nformation				raw data)								
	CR-ALS-D34-17				IV. CLP Deliverable Report								
	risty Kessel - Tec Riverpoint Blvd, Suit			X	V. EDD								
	UISHED BY	//		RECEIVE	ED RY:		RELI	NQUISHI	ED BY:			RECEIVE	ED BY:
Signature	Le Z			Signature:	Dais		Signat	ure:				Signature:	
-	ame: Sec L				me: SIXVUS								me:
	ANA			_	L5-16150						1		
	e: 8/27/1	7	300	Date/Time	4125/17 092		Date/7				- 1	Date/Time	



25/16

Cooler Receipt and Preservation Form CL American Service Request K17 4125 Opened: Unloaded: Fed Ex Samples were received via? USPS **UPS** DHL**PDX** Courier Hand Delivered Samples were received in: (circle) Cooler **Rox** Envelope Other NA Were custody seals on coolers? N If yes, how many and where? If present, were custody seals intact? N If present, were they signed and dated? N Cooler/COC ID Tracking Number Corr. Thermometer Corrected Temp Blank Corrected. Raw Filed Factor 2.(6 Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves Were custody papers properly filled out (ink, signed, etc.)? NA N Were samples received in good condition (temperature, unbroken)? Indicate in the table below. NA N If applicable, tissue samples were received: Frozen Partially Thawed Thawed Were all sample labels complete (i.e analysis, preservation, etc.)? NA N Did all sample labels and tags agree with custody papers? Indicate major discrepancies in the table on page 2. N NA Were appropriate bottles/containers and volumes received for the tests indicated? N Were the pH-preserved bottles (see SMO GEN SOP) received at the appropriate pH? Indicate in the table below N Were VOA vials received without headspace? Indicate in the table below. Was C12/Res negative? N Identified by: Sample ID on Bottle Sample ID on COC **Bottle Count** Out of Head-Volume Reagent Lot Sample ID **Bottle Type** Temp space Broke pН Reagent added Number Initials Time 25, Discrepancies, & Resolutions:

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Page of



Total Solids

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Client: Teck American Incorporated

Service Request: K1709014 **Date Collected:** 08/22/17 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Received:** 08/25/17

Sample Matrix:

Analysis Method:

Soil

160.3 Modified Units: Percent

Prep Method: None Basis: As Received

Solids, Total

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
441-1-D01-082217	K1709014-001	93.1	-	-	1	08/31/17 16:53	
441-1-D02-082217	K1709014-002	97.1	-	-	1	08/31/17 16:53	
441-1-D03-082217	K1709014-003	94.4	-	-	1	08/31/17 16:53	
441-1-D04-082217	K1709014-004	95.1	-	-	1	08/31/17 16:53	
441-1-D05-082217	K1709014-005	94.2	-	-	1	08/31/17 16:53	
441-1-D06-082217	K1709014-006	95.1	-	-	1	08/31/17 16:53	
441-1-D07-082217	K1709014-007	91.0	-	-	1	08/31/17 16:53	
441-1-D08-082217	K1709014-008	92.5	-	-	1	08/31/17 16:53	
441-1-D09-082217	K1709014-009	94.2	-	-	1	08/31/17 16:53	
441-1-D10-082217	K1709014-010	96.8	-	-	1	08/31/17 16:53	
441-1-E01-082217	K1709014-011	97.0	-	=	1	08/31/17 16:53	
441-1-E02-082217	K1709014-012	95.4	-	-	1	08/31/17 16:53	
441-1-E03-082217	K1709014-013	95.0	-	-	1	08/31/17 16:53	
441-1-E04-082217	K1709014-014	94.1	-	-	1	08/31/17 16:53	
441-1-E05-082217	K1709014-015	92.3	-	-	1	08/31/17 16:53	
441-1-E06-082217	K1709014-016	91.9	-	-	1	08/31/17 16:53	
441-1-E07-082217	K1709014-017	92.9	-	-	1	08/31/17 16:53	
441-1-E08-082217	K1709014-018	90.5	-	-	1	08/31/17 16:53	
441-1-E09-082217	K1709014-019	95.2	-	-	1	08/31/17 16:53	
441-1-E10-082217	K1709014-020	96.1	-	-	1	08/31/17 16:53	

QA/QC Report

Client: Teck American Incorporated

Project August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Analysis Method: 160.3 Modified

Prep Method: None

Date Collected:08/22/17 **Date Received:**08/25/17

Service Request:K1709014

Units:Percent
Basis: As Received

Replicate Sample Summary Inorganic Parameters

			Sample	Duplicate			RPD	Date
Sample Name:	Lab Code:	MRL	Result	Result	Average	RPD	Limit	Analyzed
441-1-D01-082217	K1709014-001DUP	-	93.1	94.0	93.6	<1	20	08/31/17
441-1-E01-082217	K1709014-011DUP	_	97.0	97.0	97.0	<1	20	08/31/17

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Printed 09/12/17 5:10:57 PM Superset Reference:17-0000435539 rev 00



Metals

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Client: Teck American Incorporated

Service Request: K1709014 **Date Collected:** 08/22/17 16:45 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Date Received: 08/25/17 09:20 **Sample Matrix:** Soil

Sample Name: 441-1-D01-082217 Basis: Dry

Lab Code: K1709014-001

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 17.8 mg/Kg 4.2 0.8 2 09/07/17 20:56 09/06/17 Lead 6010C 199 mg/Kg2.1 0.4 2 09/07/17 20:56 09/06/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1709014 **Date Collected:** 08/22/17 16:46 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Date Received: 08/25/17 09:20 **Sample Matrix:** Soil

Sample Name: 441-1-D02-082217 Basis: Dry

Lab Code: K1709014-002

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	ate Extracted	Q
Arsenic	6010C	15.2	mg/Kg	4.0	0.8	2	09/07/17 21:14	09/06/17	
Lead	6010C	151	mg/Kg	2.0	0.4	2	09/07/17 21:14	09/06/17	

Analytical Report

Client: Teck American Incorporated

Service Request: K1709014 **Date Collected:** 08/22/17 16:49 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/25/17 09:20

Sample Name: 441-1-D03-082217 Basis: Dry

Lab Code: K1709014-003

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 15.0 mg/Kg 4.2 0.8 2 09/07/17 21:16 09/06/17 Lead 6010C 171 mg/Kg2.1 0.4 2 09/07/17 21:16 09/06/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1709014 **Date Collected:** 08/22/17 16:50 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/25/17 09:20

Sample Name: 441-1-D04-082217 Basis: Dry

Lab Code: K1709014-004

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q 25.3 Arsenic 6010C mg/Kg 4.1 0.8 2 09/07/17 21:18 09/06/17 Lead 6010C 267 mg/Kg2.1 0.4 2 09/07/17 21:18 09/06/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1709014 **Date Collected:** 08/22/17 16:52 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Date Received: 08/25/17 09:20 **Sample Matrix:** Soil

Sample Name: 441-1-D05-082217 Basis: Dry

Lab Code: K1709014-005

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed I	Q	
Arsenic	6010C	23.3	mg/Kg	4.1	0.8	2	09/07/17 21:21	09/06/17	
Lead	6010C	140	mg/Kg	2.1	0.4	2	09/07/17 21:21	09/06/17	

Analytical Report

Client: Teck American Incorporated

Service Request: K1709014 **Date Collected:** 08/22/17 16:54 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/25/17 09:20

Sample Name: 441-1-D06-082217 Basis: Dry

Lab Code: K1709014-006

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 47.3 mg/Kg 4.1 0.8 2 09/07/17 21:23 09/06/17 Lead 6010C **596** mg/Kg2.0 0.4 2 09/07/17 21:23 09/06/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1709014 **Date Collected:** 08/22/17 16:56 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/25/17 09:20

Sample Name: 441-1-D07-082217 Basis: Dry

Lab Code: K1709014-007

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 34.1 mg/Kg 4.1 0.8 2 09/07/17 21:26 09/06/17 Lead 6010C **562** mg/Kg2.1 0.4 2 09/07/17 21:26 09/06/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1709014 **Date Collected:** 08/22/17 16:59 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/25/17 09:20

Sample Name: 441-1-D08-082217 Basis: Dry

Lab Code: K1709014-008

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 40.9 mg/Kg 4.1 0.8 2 09/07/17 21:28 09/06/17 Lead 6010C 339 mg/Kg2.1 0.4 2 09/07/17 21:28 09/06/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1709014 **Date Collected:** 08/22/17 17:00 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/25/17 09:20

Sample Name: 441-1-D09-082217 Basis: Dry

Lab Code: K1709014-009

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 52.6 mg/Kg 4.0 0.8 2 09/07/17 21:30 09/06/17 Lead 6010C 1150 mg/Kg2.0 0.4 2 09/07/17 21:30 09/06/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1709014 **Date Collected:** 08/22/17 17:01 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Date Received: 08/25/17 09:20

Sample Name: 441-1-D10-082217 Basis: Dry

Lab Code: K1709014-010

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	Pate Extracted	Q
Arsenic	6010C	46.0	mg/Kg	4.0	0.8	2	09/07/17 21:33	09/06/17	
Lead	6010C	361	mg/Kg	2.0	0.4	2	09/07/17 21:33	09/06/17	

Analytical Report

Client: Teck American Incorporated

Service Request: K1709014 **Date Collected:** 08/22/17 17:05 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/25/17 09:20

Sample Name: 441-1-E01-082217 Basis: Dry

Lab Code: K1709014-011

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 18.5 mg/Kg 3.9 0.8 2 09/07/17 21:35 09/06/17 Lead 6010C 195 mg/Kg2.0 0.4 2 09/07/17 21:35 09/06/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1709014 **Date Collected:** 08/22/17 17:06 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/25/17 09:20

Sample Name: 441-1-E02-082217 Basis: Dry

Lab Code: K1709014-012

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 17.1 mg/Kg 3.9 0.8 2 09/07/17 21:44 09/06/17 Lead 6010C 203 mg/Kg2.0 0.4 2 09/07/17 21:44 09/06/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1709014 **Date Collected:** 08/22/17 17:08 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/25/17 09:20

Sample Name: 441-1-E03-082217 Basis: Dry

Lab Code: K1709014-013

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 44.0 mg/Kg 4.0 0.8 2 09/07/17 21:46 09/06/17 Lead 6010C 893 mg/Kg2.0 0.4 2 09/07/17 21:46 09/06/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1709014 **Date Collected:** 08/22/17 17:10 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/25/17 09:20

Sample Name: 441-1-E04-082217 Basis: Dry

Lab Code: K1709014-014

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q 25.2 Arsenic 6010C mg/Kg 4.1 0.8 2 09/07/17 21:48 09/06/17 Lead 6010C 368 mg/Kg2.1 0.4 2 09/07/17 21:48 09/06/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1709014 **Date Collected:** 08/22/17 17:12 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/25/17 09:20

Sample Name: 441-1-E05-082217 Basis: Dry

Lab Code: K1709014-015

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 46.3 mg/Kg 4.0 0.8 2 09/07/17 21:51 09/06/17 Lead 6010C 608 mg/Kg2.0 0.4 2 09/07/17 21:51 09/06/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1709014 **Date Collected:** 08/22/17 17:14 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/25/17 09:20

Sample Name: 441-1-E06-082217 Basis: Dry

Lab Code: K1709014-016

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 42.1 mg/Kg 4.3 0.9 2 09/07/17 21:53 09/06/17 Lead 6010C 809 mg/Kg2.2 0.4 2 09/07/17 21:53 09/06/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1709014 **Date Collected:** 08/22/17 17:21 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/25/17 09:20

Sample Name: 441-1-E07-082217 Basis: Dry

Lab Code: K1709014-017

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 42.8 mg/Kg 4.2 0.8 2 09/07/17 21:55 09/06/17 Lead 6010C 831 mg/Kg2.1 0.4 2 09/07/17 21:55 09/06/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1709014 **Date Collected:** 08/22/17 17:18 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/25/17 09:20

Sample Name: 441-1-E08-082217 Basis: Dry

Lab Code: K1709014-018

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 32.5 mg/Kg 4.3 0.9 2 09/07/17 21:58 09/06/17 Lead 6010C **594** mg/Kg2.2 0.4 2 09/07/17 21:58 09/06/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1709014 **Date Collected:** 08/22/17 17:23 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/25/17 09:20

Sample Name: 441-1-E09-082217 Basis: Dry

Lab Code: K1709014-019

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 40.6 mg/Kg 4.0 0.8 2 09/07/17 22:00 09/06/17 Lead 6010C 434 mg/Kg2.0 0.4 2 09/07/17 22:00 09/06/17

Analytical Report

Service Request: K1709014

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/22/17 17:26

Sample Matrix: Soil Date Received: 08/25/17 09:20

Sample Name: 441-1-E10-082217 **Basis:** Dry

Lab Code: K1709014-020

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 31.3 mg/Kg 4.0 0.8 2 09/07/17 22:02 09/06/17 Lead 6010C 306 mg/Kg2.0 0.4 2 09/07/17 22:02 09/06/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1709014

Project: August 2017 Sampling SAT Study/B0095010.0005.00001

Date Collected: NA

Sample Matrix: Soil

Date Received: NA

Sample Name:

Method Blank

Basis: Dry

Lab Code: KQ1712727-02

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	ate Extracted	Q
Arsenic	6010C	ND U	mg/Kg	4	0.8	2	09/07/17 20:52	09/06/17	
Lead	6010C	ND U	mg/Kg	2	0.4	2	09/07/17 20:52	09/06/17	

QA/QC Report

Client: Teck American Incorporated

August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Service Request: Date Collected:

K1709014 08/22/17

Date Received:

08/25/17

Date Analyzed: Date Extracted:

09/7/17 09/6/17

Duplicate Matrix Spike Summary

Total Metals

Sample Name: 441-1-D01-082217

Units: mg/KgBasis: Dry

Lab Code: Analysis Method:

Project:

K1709014-001

Prep Method:

6010C

EPA 3050B

Matrix Spike KQ1712727-03 **Duplicate Matrix Spike**

KQ1712727-04

	Sample		Spike			Spike		% Rec		RPD
Analyte Name	Result	Result	Amount	% Rec	Result	Amount	% Rec	Limits	RPD	Limit
Arsenic	17.8	118	103	97	117	106	93	75-125	<1	30
Lead	199	238	103	38 N	232	106	31 N	75-125	3	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

QA/QC Report

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Analyzed:** 09/07/17

Sample Matrix: Soil

Lab Control Sample Summary Total Metals

> Units:mg/Kg Basis:Dry

Service Request: K1709014

Lab Control Sample

KQ1712727-01

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Arsenic	6010C	491	500	98	80-120
Lead	6010C	488	500	98	80-120



ALS Environmental
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Kelso, WA 98626

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F:+1 360 636 1068

www.alsglobal.com

September 13, 2017

Analytical Report for Service Request No: K1709015

Dave Enos Teck American Incorporated 501 North Riverpoint Blvd., Suite 300 Spokane, WA 99202

RE: August 2017 Sampling SAT Study / B0095010.0005.00001

Dear Dave.

Enclosed are the results of the sample(s) submitted to our laboratory August 25, 2017 For your reference, these analyses have been assigned our service request number **K1709015**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3330. You may also contact me via email at Jeff.Coronado@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Jeff Coronado

Metals Department

Manager



ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue Kelso, WA 98626

T: +1 360 577 7222 F: +1 360 636 1068 www.alsglobal.com

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Metals

Acronyms

ASTM American Society for Testing and Materials

A2LA American Association for Laboratory Accreditation

CARB California Air Resources Board

CAS Number Chemical Abstract Service registry Number

CFC Chlorofluorocarbon
CFU Colony-Forming Unit

DEC Department of Environmental Conservation

DEQ Department of Environmental Quality

DHS Department of Health Services

DOE Department of Ecology
DOH Department of Health

EPA U. S. Environmental Protection Agency

ELAP Environmental Laboratory Accreditation Program

GC Gas Chromatography

GC/MS Gas Chromatography/Mass Spectrometry

LOD Limit of Detection
LOQ Limit of Quantitation

LUFT Leaking Underground Fuel Tank

M Modified

MCL Maximum Contaminant Level is the highest permissible concentration of a substance

allowed in drinking water as established by the USEPA.

MDL Method Detection Limit
MPN Most Probable Number
MRL Method Reporting Limit

NA Not Applicable
NC Not Calculated

NCASI National Council of the Paper Industry for Air and Stream Improvement

ND Not Detected

NIOSH National Institute for Occupational Safety and Health

PQL Practical Quantitation Limit

RCRA Resource Conservation and Recovery Act

SIM Selected Ion Monitoring

TPH Total Petroleum Hydrocarbons

tr Trace level is the concentration of an analyte that is less than the PQL but greater than or

equal to the MDL.

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L14-51
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	_
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
	https://deq.nc.gov/about/divisions/water-resources/water-resources-	
	data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-	
North Carolina DEQ	certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaborator	
Oregon – DEQ (NELAP)	yAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.



Case Narrative

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

ALS ENVIRONMENTAL

Client: Teck American Incorporated Service Request No.: K1709015

Project: August 2017 Sampling SAT Study/ Date Received: 08/25/17

B0095010.0005.00001

Sample Matrix: Soil

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

Sample Receipt

Twelve soil samples were received for analysis at ALS Environmental on 08/25/17. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Total Metals

No anomalies associated with the analysis of these samples were observed.

Approved by



Chain of Custody

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068



Date 8/23/17
PAGE 8 OF 15

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Cor	npany/Address: <u>189</u>]	North Co	edar Stree	<u>t</u> Phone: <u>30</u>	7-203-3510 or 810-588-1488)50B						
City	y, State, Zip: <u>Buffalo</u> ,	WY 828	834 FAX:	307-684-596	51		r of	nic 3(
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ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068



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PAGE	_6	_ OF	15

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Invoice Information			raw data)									
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5/16

Cooler Receipt and Preservation Form Honeric an Service Request K17 4125 ceived: Opened: By: Unloaded: Samples were received via? USPS Fed Ex **UPS** DHL Courier Hand Delivered Samples were received in: (circle) Cooler Box Envelope Other Were custody seals on coolers? ÑΑ N If yes, how many and where? If present, were custody seals intact? N If present, were they signed and dated? Ν Cooler/COC ID Tracking Number Corr. Thermometer Corrected. Raw Filed Factor Temp Blank Femp Stant Cooler Temp 3.6 えむ) Wet Ice Dry Ice Packing material: Inserts Baggies (Bubble Wrap) Gel Packs (Were custody papers properly filled out (ink, signed, etc.)? N Were samples received in good condition (temperature, unbroken)? Indicate in the table below. NA N If applicable, tissue samples were received: Partially Thawed Frozen Thawed Were all sample labels complete (i.e analysis, preservation, etc.)? NA N Did all sample labels and tags agree with custody papers? Indicate major discrepancies in the table on page 2. NA N Were appropriate bottles/containers and volumes received for the tests indicated? NA N Were the pH-preserved bottles (see SMO GEN SOP) received at the appropriate pH? Indicate in the table below N Were VOA vials received without headspace? Indicate in the table below. N Was C12/Res negative? N Sample ID on Bottle Sample ID on COC Identified by: Out of Head-Volume **Bottle Count** Reagent Lot **Bottle Type** Reagent bebbs Number Initials Time Sample ID Temp space Broke pH , Discrepancies, & Resolutions:

Page___of___



Total Solids

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Client: Teck American Incorporated

Service Request: K1709015 **Date Collected:** 08/22/17 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Analysis Method:

160.3 Modified Units: Percent

Prep Method: None Basis: As Received

Date Received: 08/25/17

Solids, Total

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
441-1-F01-082217	K1709015-001	94.9	-	-	1	08/31/17 16:53	
441-1-F02-082217	K1709015-002	93.6	-	-	1	08/31/17 16:53	
441-1-F03-082217	K1709015-003	94.6	-	-	1	08/31/17 16:53	
441-1-F04-082217	K1709015-004	92.4	-	-	1	08/31/17 16:53	
441-1-F05-082217	K1709015-005	90.7	-	-	1	08/31/17 16:53	
441-1-F06-082217	K1709015-006	93.9	-	-	1	08/31/17 16:53	
441-1-F07-082217	K1709015-007	94.1	-	-	1	08/31/17 16:53	
441-1-F08-082217	K1709015-008	90.9	-	-	1	08/31/17 16:53	
441-1-F09-082217	K1709015-009	92.5	-	-	1	08/31/17 16:53	
441-1-F10-082217	K1709015-010	94.5	-	-	1	08/31/17 16:53	
441-1-F06-082217-D	K1709015-011	93.0	-	-	1	08/31/17 16:53	
441-1-D10-082217-D	K1709015-012	96.2	-	-	1	08/31/17 16:53	

QA/QC Report

Client: Teck American Incorporated

Project August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Analysis Method:

160.3 Modified

Prep Method: None

Service Request: K1709015

Date Collected: 08/22/17

Date Received: 08/25/17
Units: Percent

Basis: As Received

Replicate Sample Summary Inorganic Parameters

Duplicate RPD Sample Date Sample Name: Lab Code: **MRL** Result Result **RPD** Limit Analyzed Average 441-1-F01-082217 K1709015-001DUP 94.9 95.3 20 95.1 <1 08/31/17 441-1-F06-082217-D K1709015-011DUP 93.0 93.6 93.3 <1 20 08/31/17

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Printed 09/12/17 5:06:17 PM Superset Reference:17-0000435537 rev 00



Metals

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Client: Teck American Incorporated

Service Request: K1709015 **Date Collected:** 08/22/17 17:31 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil

Date Received: 08/25/17 09:20

Sample Name: 441-1-F01-082217 Basis: Dry

Lab Code: K1709015-001

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed Date Extracted		Q
Arsenic	6010C	16.3	mg/Kg	4.0	0.8	2	09/08/17 13:01	09/06/17	
Lead	6010C	204	mg/Kg	2.0	0.4	2	09/08/17 13:01	09/06/17	

Analytical Report

Client: Teck American Incorporated

Service Request: K1709015 **Date Collected:** 08/22/17 17:33 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/25/17 09:20

Sample Name: 441-1-F02-082217 Basis: Dry

Lab Code: K1709015-002

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 24.1 mg/Kg 4.1 0.8 2 09/08/17 13:36 09/06/17 Lead 6010C 255 mg/Kg2.0 0.4 2 09/08/17 13:36 09/06/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1709015 **Date Collected:** 08/22/17 17:35 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/25/17 09:20

Sample Name: 441-1-F03-082217 Basis: Dry

Lab Code: K1709015-003

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 29.2 mg/Kg 4.1 0.8 2 09/08/17 13:38 09/06/17 Lead 6010C 434 mg/Kg2.0 0.4 2 09/08/17 13:38 09/06/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1709015 **Date Collected:** 08/22/17 17:37 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/25/17 09:20

Sample Name: 441-1-F04-082217 Basis: Dry

Lab Code: K1709015-004

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 37.6 mg/Kg 4.2 0.8 2 09/08/17 13:41 09/06/17 Lead 6010C **556** mg/Kg2.1 0.4 2 09/08/17 13:41 09/06/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1709015 **Date Collected:** 08/22/17 17:39 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/25/17 09:20

Sample Name: 441-1-F05-082217 Basis: Dry

Lab Code: K1709015-005

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 28.1 mg/Kg 4.2 0.8 2 09/08/17 13:43 09/06/17 Lead 6010C 325 mg/Kg2.1 0.4 2 09/08/17 13:43 09/06/17

Analytical Report

Service Request: K1709015

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/22/17 17:42

Sample Matrix: Soil Date Received: 08/25/17 09:20

Sample Name: 441-1-F06-082217 **Basis:** Dry

Lab Code: K1709015-006

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 35.9 6010C mg/Kg 4.1 0.8 2 09/08/17 13:46 09/06/17 Lead 6010C 269 mg/Kg2.0 0.4 2 09/08/17 13:46 09/06/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1709015 **Date Collected:** 08/22/17 17:44 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/25/17 09:20

Sample Name: 441-1-F07-082217 Basis: Dry

Lab Code: K1709015-007

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 16.3 mg/Kg 4.0 0.8 2 09/08/17 13:48 09/06/17 Lead 6010C 123 mg/Kg2.0 0.4 2 09/08/17 13:48 09/06/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1709015 **Date Collected:** 08/22/17 17:46 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/25/17 09:20

Sample Name: 441-1-F08-082217 Basis: Dry

Lab Code: K1709015-008

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 15.8 mg/Kg 4.3 0.9 2 09/08/17 13:51 09/06/17 Lead 6010C **78.2** mg/Kg2.1 0.4 2 09/08/17 13:51 09/06/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1709015 **Date Collected:** 08/22/17 17:48 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/25/17 09:20

Sample Name: 441-1-F09-082217 Basis: Dry

Lab Code: K1709015-009

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 38.7 mg/Kg 4.1 0.8 2 09/08/17 13:54 09/06/17 Lead 6010C 1060 mg/Kg2.1 0.4 2 09/08/17 13:54 09/06/17

Analytical Report

Client: Teck American Incorporated

Service Request: K1709015 **Date Collected:** 08/22/17 17:50 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix: Soil **Date Received:** 08/25/17 09:20

Sample Name: 441-1-F10-082217 Basis: Dry

Lab Code: K1709015-010

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 41.1 mg/Kg 4.1 0.8 2 09/08/17 13:56 09/06/17 Lead 6010C 613 mg/Kg2.1 0.4 2 09/08/17 13:56 09/06/17

Printed 9/11/2017 10:19:43 AM Superset Reference:

Analytical Report

Service Request: K1709015

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Collected:** 08/22/17 17:42

Sample Matrix: Soil Date Received: 08/25/17 09:20

Sample Name: 441-1-F06-082217-D **Basis:** Dry

Lab Code: K1709015-011

Total Metals

Analysis Analyte Name Method Result Units MRL MDLDil. Date Analyzed Date Extracted Q Arsenic 6010C 34.1 mg/Kg 4.0 0.8 2 09/08/17 13:59 09/06/17 Lead 6010C **280** mg/Kg2.0 0.4 2 09/08/17 13:59 09/06/17

Printed 9/11/2017 10:19:43 AM Superset Reference:

Analytical Report

Client: Teck American Incorporated

Service Request: K1709015 **Date Collected:** 08/22/17 17:01 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00001

Date Received: 08/25/17 09:20 **Sample Matrix:** Soil

Sample Name: 441-1-D10-082217-D Basis: Dry

Lab Code: K1709015-012

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	Pate Extracted	Q
Arsenic	6010C	37.2	mg/Kg	4.0	0.8	2	09/08/17 14:20	09/06/17	
Lead	6010C	343	mg/Kg	2.0	0.4	2	09/08/17 14:20	09/06/17	

Printed 9/11/2017 10:19:43 AM Superset Reference:

Analytical Report

Client: Teck American Incorporated **Service Request:** K1709015

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 Date Collected: NA

Sample Matrix:

Soil

Date Received: NA

Sample Name:

Method Blank

Basis: Dry

Lab Code: KQ1712728-02

Total Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	ate Extracted	Q
Arsenic	6010C	ND U	mg/Kg	4	0.8	2	09/08/17 12:56	09/06/17	
Lead	6010C	ND U	mg/Kg	2	0.4	2	09/08/17 12:56	09/06/17	

Printed 9/11/2017 10:19:43 AM Superset Reference:

Page 29 of 31

QA/QC Report

Client: Teck American Incorporated

August 2017 Sampling SAT Study/B0095010.0005.00001

Sample Matrix:

Soil

Date Collected: Date Received:

Service Request:

K1709015 08/22/17

08/25/17

Date Analyzed:

09/8/17

Date Extracted:

09/6/17

Duplicate Matrix Spike Summary

Total Metals

Sample Name:

441-1-F01-082217

Units: Basis: mg/Kg Dry

Lab Code:

Project:

K1709015-001

Analysis Method:

6010C

Prep Method:

EPA 3050B

Matrix Spike KQ1712728-03 **Duplicate Matrix Spike**

KQ1712728-04

	Sample		Spike			Spike		% Rec		RPD
Analyte Name	Result	Result	Amount	% Rec	Result	Amount	% Rec	Limits	RPD	Limit
Arsenic	16.3	115	102	96	114	99.4	98	75-125	<1	30
Lead	204	306	102	100	306	99.4	103	75-125	<1	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Printed 9/11/2017 10:19:43 AM Superset Reference:

QA/QC Report

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00001 **Date Analyzed:** 09/08/17

Sample Matrix: Soil

Lab Control Sample Summary Total Metals

> Units:mg/Kg Basis:Dry

Service Request: K1709015

Lab Control Sample

KQ1712728-01

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Arsenic	6010C	503	500	101	80-120
Lead	6010C	496	500	99	80-120

Printed 9/11/2017 10:19:43 AM Superset Reference:

APPENDIX G-2

PHASE IA PART 2 LABORATORY ANALYTICAL REPORTS



January 05, 2018

Spokane, WA 99202

Teck American Incorporated

501 North Riverpoint Blvd., Suite 300

ALS Environmental
ALS Group USA, Corp
1317 South 13th Avenue
Kelso, WA 98626

T:+1 360 577 7222

F: +1 360 636 1068 www.alsglobal.com

Analytical Report for Service Request No: K1711288

RE: August 2017 Sampling SAT Study / B0095010.0005.00002

Dear Dave,

Dave Enos

Enclosed are the results of the sample(s) submitted to our laboratory October 18, 2017 For your reference, these analyses have been assigned our service request number **K1711288**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3376. You may also contact me via email at Mark.Harris@alsqlobal.com.

Respectfully submitted,

noe D. Oan

ALS Group USA, Corp. dba ALS Environmental

Mark Harris

Project Manager



ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue Kelso, WA 98626

T: +1 360 577 7222 F: +1 360 636 1068 www.alsglobal.com

Table of Contents

Acronyms

Qualifiers

State Certifications, Accreditations, And Licenses

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Chain of Custody

Total Solids

General Chemistry

Metals

Acronyms

ASTM American Society for Testing and Materials

A2LA American Association for Laboratory Accreditation

CARB California Air Resources Board

CAS Number Chemical Abstract Service registry Number

CFC Chlorofluorocarbon
CFU Colony-Forming Unit

DEC Department of Environmental Conservation

DEQ Department of Environmental Quality

DHS Department of Health Services

DOE Department of Ecology
DOH Department of Health

EPA U. S. Environmental Protection Agency

ELAP Environmental Laboratory Accreditation Program

GC Gas Chromatography

GC/MS Gas Chromatography/Mass Spectrometry

LOD Limit of Detection
LOQ Limit of Quantitation

LUFT Leaking Underground Fuel Tank

M Modified

MCL Maximum Contaminant Level is the highest permissible concentration of a substance

allowed in drinking water as established by the USEPA.

MDL Method Detection Limit
MPN Most Probable Number
MRL Method Reporting Limit

NA Not Applicable
NC Not Calculated

NCASI National Council of the Paper Industry for Air and Stream Improvement

ND Not Detected

NIOSH National Institute for Occupational Safety and Health

PQL Practical Quantitation Limit

RCRA Resource Conservation and Recovery Act

SIM Selected Ion Monitoring

TPH Total Petroleum Hydrocarbons

tr Trace level is the concentration of an analyte that is less than the PQL but greater than or

equal to the MDL.

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.



Case Narrative

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com



Client: Teck American Incorporated Service Request: K1711288

Project: August 2017 Sampling SAT Study Date Received: 10/12/2017

Sample Matrix: Soil

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), Matrix/Duplicate Matrix Spike (MS/DMS), Laboratory Control Sample (LCS), and Laboratory/Duplicate Laboratory Control Sample (LCS/DLCS).

Sample Receipt:

Nineteen soil samples were received for analysis at ALS Environmental on 10/12/2017. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Metals:

No significant anomalies were noted with this analysis.

General Chemistry:

Total Sulfide by PSEP:

Samples IC-401-1A-101017, IC-401-1B-101017, IC-401-1C-101117, IC-401-1C-101117-D, IC-401-1D-101117 and IC-401-2B-101117 were analyzed past holding time due to laboratory error. The analysis was performed as soon as possible after receipt by the laboratory. The data was flagged to indicate the holding time violation.

Sample IC-441-1B-101617 was received and initially analyzed within holding time, but was reanalyzed past holding time due to MB result being over the MRL. The data was flagged to indicate the holding time violation.

Approved by — Mark Date — 12/01/2017

REVISED10:21 am, Jan 05, 2018



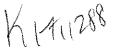
Chain of Custody

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ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068



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IC-401-1A-101017	10-10-17	1058	į	S	12	X	X	X	X	X	X	X	X			Sample weight = 10,457 =
IC-401-1B-101017			2	S	2	X	X	Х	X	X	X	X	X			Sample weight = 13,511 a
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501 N Riverpoint Blvd, Suite 300 Spok	ne, WA 9920				<u> </u>											
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ALS Environ__ntal-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068



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IC-401-1C-101117	10-11-17	1023	3	s	2	X	X	X	X	X	X	X	X			Sample weight: 11,403a
IC-401-1C-101117-D	10-11-17	1235	4	S	2									X		Samale weight: 12,555a
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IC-401-28-10117	10-11-17	1538	Ĺ,	s		X	λ	X	X	X	X	义	人			Sample weight 7,639 a
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Requested Report Date:			III. Data Validation Report (includes		İ	Sulfide (S)	M 4500-52	D), Total (arbon an	d Nitrogen ((Gremner	and Mulv	aney/Nelso	n and Som	ners), Tota	al Organic Carbon (USEPA 9060A)
Invoice Information			raw data)													
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501 N Riverpoint Blvd, Suite 300 Spok	ane, WA 9920													<u>.</u>		
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LX11288

Date 10-12-2017
PAGE 1 OF 1

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Project Name: <u>Teck American</u> -	UCR SAT	ES Projec	Number: <u>B0095010.0005.00002</u>		S			Ī		ers				<u> </u>	T ts	
Project Contact: Kady Young C	ompany: A	rcadis			Container	₹				ane) omn			L18735			
Company/Address: 189 North Co	dar Street	Phone: <u>30</u>	7-203-3510 or 307-949-0330		3	USEPA 6010/USEPA 6010B		Ì		Mulvaney and Sommers			, L18	Analytical List	Analytical List	
City, State, Zip: Buffalo, WY 828	34 FAX: 3	07-684-596	1		r of	010		0.00	S2D	Bremner and Muly 1982, Nelson and S 1982	9060A	422	NRMRL QMP I Athena	Ana	An	
Sampler's Signature:	11		_		Number	PA 6	SM 2510B	USEPA 300.0	SM 4500-S2D	ner, Net	PA 9	ASTM D422	IRE II I	Duplicate	Friplicate	
Sample I.D.	Date	Time	LAB ID	Matrix	Ž	USEP, 6010B	SM.	USE	SM 4	Bren 1982 1982	USEPA	AST	NR.V Athe	Dup	直	REMARKS
IC1-401-2A-101217	10-12-17	0920	7	s	i.	X	X	X	X	X	X	又	X			Sample wight: 6.900a
IC2-401-2A-101217	10-12-17	1	S	S	1										X	Sample weight 6,870g
IC3-401-2A-101217	10-12-17			S	T										X	Sample weight: 7.213 g
IC-401-26-101217	10-12-17		10	s	1	X	X	X	λ	X	X	X	X			Sample weight: 7,683 a
IC-401-20-101217	10-12-17			S	1	X	X	X	X	X	X	Х	X			Sumple weight: 7, 2053
				S												
																Composite samples
				S												prior to analysis
				s												
				s												
FURNAROUND REQUIREMENTS	S		REPORT REQUIREMENTS		Comi	nents/S _]	pecial In	truction	ıs:							
24 hr 48 hr 5	5 day		I. Routine Report: Results, Method Blad	nk,	Hold	Remain	der									
X Standard (10 days)			Surrogate, as required													
Provide FAX Preliminary Re Requested Report Date:	esults		II. Report Dup., MS, MSD as required III. Data Validation Report (includes		' '	•					•					y (SM 2510B), Chloride/Sulfate (USEPA 300. al Organic Carbon (USEPA 9060A)
Invoice Information			raw data)			amine (a	VI 4300-32	D), Iocai c	AI DUE AL	u Muogen	(Gremner	490 141014	апсу/дево	ii anu Som	mc13), 100	organic Carpon (CD2171 200022)
P.O. # UCR-ALS-D34-17			IV. CLP Deliverable Report		Triplie:	ate Analys	is List - To	ital TAL N	Aetals/SPI	P TAL Me	tals (USE)	PA 6010),	Bioaccessib	le Arsenic	and Lead	at pH 1.5 and pH 2.5 (USEPA 6010B)
Bill to: <u>Cristy Kessel - Teck Americ</u>	an	Х	v. EDD		_	•					-					
501 N Riverpoint Blvd, Suite 300 Spok	ane, WA 992(
RELINQUISHED BY:	//	RECEIVE	41		RELI	NQUIS	HED BY	:				RECEIV	ED BY:			
Signature: Styan 4/55/			Kollelle Bourg	1	Signat	ture:]	Signatur	e:	···		
Printed Name: Ryan Brave 4	اد	Printed Nat	ne: Rochelle Benez		Printe	d Name:						Printed N	lame:			maximum and the desirence of the second seco
Firm: Accadis		Firm: <u> </u>	S-Kelso, WA	Į.	Firm:				·····			Firm:				
Date/Time: 10 - 13-2017 100		Date/7	ime:					l	Date/Tin	ie:						

ALS Environ. .ntal-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068

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Date 10-17-17
PAGE 1 OF 1
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Project Name: <u>Teck American</u> -	UCR SATI	ES Projec	Number: <u>B0095010.0005.00002</u>	ļ	2					ers							
Project Contact: Kady Young Co	ompany: <u>A</u>	rcadis		ĺ	Container	∢		İ		r and Mulvaney Ison and Sommers			735	I List	al List		
Company/Address: 189 North Ced	lar Street	Phone: <u>30</u>	7-203-3510 or 307-949-0330		Con	USEPA 6010/USEPA 5010B		l		fully ad Se			L.18735	Analytical	Analytical		
City, State, Zip: Buffalo, WY 8283	14 EAV. 20	07 CD4 E06	:1	ļ	J 0	8	ĺ	300.0	ຊ	Bremner and Mu 1982, Nelson and 1982	9060A	77	QMP]]	
A	11	101-004-350			ber	09	2510B	30	4500-S2D	er ai	6	ASTM D422	10		ate /		
Sampler's Signature:	(U)				Number	USEPA 6010B	251	USEPA	25	2, N	USEPA	I.W	NRMRL Athena	Duplicate	Triplicate		
Sample I.D.	Date	Time	LAB ID	Matrix	, Z.,	S 199	SM	S	SM	Bren 1982 1982	SO	S.A.	AG AG	n _Q		REMARKS	
IC-258-3A-101717	10-17-17	0840	12	s	ŧ	X	IX.	X	X	X	X	X	٨			Sample weight: 9,57	79
IC-258-3B-101717	10-17-17	0915	13	s		Χ	X	X	X	X	X	X	X			Sample weight: 8,28	
IC-258-3C-101717	10-17-17	0450	14	S	_	X	X	X	X	X	X	X	X			Sample weight: 5,46.	3-,
IC258-3D-101717	10-17-17	1020	15	s		X	X	X	X	X	፞፞፞፞፞፞፞፞፞	X	X			Sample weight: 7.07	
	10-16-17	0915	ال	s	ĺ	X	X	$\sqrt{}$	X	X	Х	X	X			Sample worth 1: 7/130	
I(-441-1B-101617	10-16-17	1015	17	S	į	X	V	X	X	X	X	X	X			Smalewight: 7.53	
	10-16-17		18	S	1	Ϋ́	Ŷ	X	X	X	X	$\dot{\mathbf{x}}$	χ			Sample weight: 5,110	
	10-16-17		19	s	7	Ý	V	X	X	χ	X	X	X			Sunde weight: 5 77	₹.
		122		s						/						Ampre -gg/1 -, 17	
				s													
FURNAROUND REQUIREMENTS			REPORT REQUIREMENTS	<u> </u>	Comr	nents/S	pecial In	struction	1S:	L							
24 hr 48 hr 5			I. Routine Report: Results, Method Blan	1		Remain											
X Standard (10 days)	- 1		Surrogate, as required														
Provide FAX Preliminary Re	sults	x	II. Report Dup., MS, MSD as required	h	Duplica	ite Analys	is List - M	ehlich III	Extractabl	le Lead and	Phosphor	ous (USEI	PA 6010), E	lectrical Co	onductivity	(SM 2510B), Chloride/Sulfate (USE	PA 300.
Requested Report Date:			III. Data Validation Report (includes	1	1	Sulfide (\$	M 4500-52	D), Total (Carbon au	d Nitrogen	(Gremner	and Mulv	aney/Nelson	and Somi	mers), Toti	of Organic Carbon (USEPA 9060A)	1
Invoice Information			raw data)														1
P.O. # <u>UCR-ALS-D34-17</u>			IV. CLP Deliverable Report	12	riplie:	ate Analys	sis List - T	otal TAL N	detals/SPI	LP TAL Me	tals (USE)	PA 6010),	Bioaccessib	le Arsenic	and Lead	at pH 1.5 and pH 2.5 (USEPA 6010B) [
Bill to: <u>Cristy Kessel - Teck America</u>	ம [x	V. EDD	1													
501 N Riverpoint Blvd, Suite 300 Spoks	ne, WA 9926		1														
RELINQUISHED BY:	110	RECEIVE	р/ву:	Į.	RELI	NQUIS	HED BY	':		-		RECEIV	ED BY:				
Signature:		Signature:	MOKKO	s	Signat	ure:						Signatur	e:				
Printed Name: Ryan WBra	uchla	Printed Na	me: LIVIONKOL	F	rinte	d Name:		·	V			Printed N	lame:				ı
Firm: Arcadis		Firm: 🚹	(S)	F	îrm:							Firm:					- 1
Date/Time: 10-17-2017	i i									ne:			and the second s				



Cooler Receipt and Preservation Form Teck America Service Request K17 Opened: 10/12/ Unloaded: Received: Samples were received via? **USPS** Fed Ex-**UPS** DHL **PDX** Hand Delivered Courier Samples were received in: (circle) Cooler Box Envelope Other NA Were custody seals on coolers? Υ NA If yes, how many and where? If present, were custody seals intact? Υ Υ If present, were they signed and dated? Ν Cooler/COC ID Tracking Number Corr. Thermometer Corrected. Raw Temp Blank Factor ID NA Filed Temp Blank Cooler Temp 360 0 Wet Ice Rubble Wrap Packing material: Inserts Baggies Gel Packs (rv Ice Were custody papers properly filled out (ink, signed, etc.)? N Were samples received in good condition (temperature, unbroken)? Indicate in the table below. NA N If applicable, tissue samples were received: Frozen Partially Thawed Thawed Were all sample labels complete (i.e analysis, preservation, etc.)? NA N Did all sample labels and tags agree with custody papers? Indicate major discrepancies in the table on page 2. NA Were appropriate bottles/containers and volumes received for the tests indicated? NA N 10. Were the pH-preserved bottles (see SMO GEN SOP) received at the appropriate pH? Indicate in the table below N 11. Were VOA vials received without headspace? Indicate in the table below. NÃ 12. Was C12/Res negative? N Sample ID on Bottle Identified by: Sample ID on COC **Bottle Count** Out of Head-Volume Reagent Lot Sample ID **Bottle Type** Temp space Broke added Number Initials Time Reagent Notes, Discrepancies, & Resolutions:

Page 7/25/16

of



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Λ	(Cooler Rece	ipt and	l Pres	ervat	ion Form	,	1000		
ient Arcadis				Se	rvice	Request <i>K1</i>	7	1288		
eceived: $\frac{10/3/17}{2}$	pened:	10/13/	∐ Ву	Ł	<u>^</u>	Unloade	ed:(113/1By:	1/2	····
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Samples were received in: (circ	ole) (Co	oler Box	x E	Envelop	e	Other			NA.	
Were custody seals on coolers'	? N.	A (Y)	N	If yes	s, how	many and wl	here?/_	E+B		
If present, were custody seals i	ntact?	(\mathbf{Y})	N	If	preser	t, were they	signed and d	lated?	Y	N
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						<u></u>		122. 011) ===	
Packing material: Inserts	and Market Walter Color Street Williams			eks (M	et Ice	Dry Ice	Sleeves _	Mger. I	260 B	
5. Were custody papers properly	•	•	•					N.A	The same of the sa	N
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8. Did all sample labels and tags	-	•			r disci	renancies in i	the table on) N
9. Were appropriate bottles/conf	•	• • •		•		-	ine rable on	ραge 2		, N
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11. Were VOA vials received w	ithout headsp	sace? Indicate	e in the t	able be	low.			CN.		N
12. Was C12/Res negative?	· · · · · · · · · · · · · · · · · · ·	····			,		··	(N	A Y	N
		rengement (<u>j. 1888)</u> .	-1-15	^^^				rana at Rima Baran		
Sample ID on Bottle		Sare	ple ID or	COC				dentified by:		
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	Bottle		of Head-		The s		Volume	Reagent Lot	1	4
Sample ID	Bottle	Type Tem	p space	Broke	pri	Reagent	added	Number	Initials	Time
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Notes, Discrepancies, & Res	solutions:									
										
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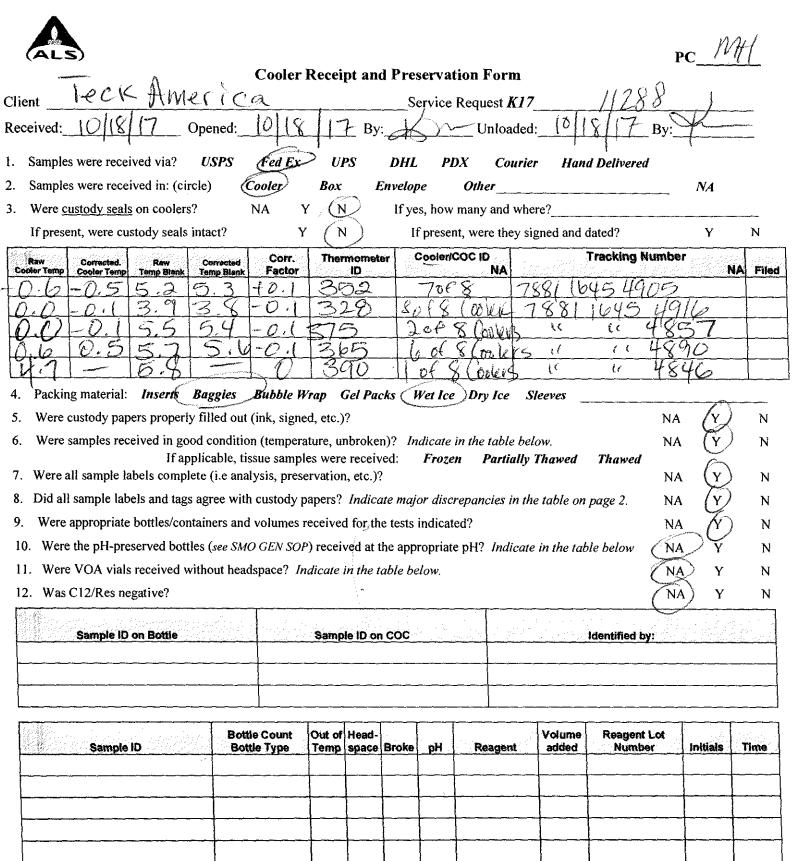
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Samples were received via? USPS Fed Ex UPS DHL PDX Courier Hand Delivered Samples were received in: (circle) Cooler Box Envelope Other NA Were custody seals on coolers? NA Y N If yes, how many and where? If present, were custody seals intact? Y N If present, were they signed and dated? Y N Raw Corrected Temp Blank Factor ID NA D.2 D.3 5.5 5.4 + D.1 3.46 809.2 DT.15 43.29 D.8 40.2 351 7880 7540 9433 D.1 - D.3 6.8 6.5 - D.2 38.7 7880 7540 9433 D.1 - D.2 6.6 6.5 - D.1 3.38 7880 7540 9442 Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves Were custody papers properly filled out (ink, signed, etc.)?		Α.			Cooler I	Recei	pt and	Pres	servat	tion F	orm					
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ent	eck	- <i>FIM</i>	LLIC	91			S	en/ice	Requ	est <i>K17</i>	, 	1/28/8	./_	
ceived:_	10/15	417	Opened:_	10/1	8/1	\mathcal{T}_{By}	4	<u>sh</u>	U	nloaded	1: 0	18 7By	R_	
Sample	s were rece	ived via?	USPS	Fed Ex	\supset_{u}	PS	DHL	P	DΧ	Courie	r Han	d Delivered		
-		eived in: (cir	(Cooler)	Box		nvelop		Othe			20170.00	NA.	
Were <u>c</u>	ustody seal	ls on coolers	5?	NA '	Y ()	1)	If ye	s, how	many	and who	ere?			
If prese	ent, were cu	ustody seals	intact?	Y	· (1	\bigcirc	H	prese	nt, wer	e they si	gned and	dated?	Y	N
Raw	Corrected.	Rew	Corrected	Corr.	The	momet	er (<u>ooler/</u>	COC ID			Tracking Num		
oder Temp	Cooler Temp	Temp Blank	Temp Blank	Factor	13	<u>no</u> 25	4	26 8	11 11	NA	7881	11,45 1	870	VA Fil
,性	0.5	2.6	2.7	70.1	-34	12	-13	of of	8/6	7	- 1001	14 (1	1868	
1.1	0.0	50	5.7	0.2	3	87	5	OP	- Carlotte	COAPS	(((1	4880	,
		ļ		 	 									
	1	<u></u>		<u> </u>		·		- Control of the last of the l						
Packin	ng material:	Inserts (Baggies	Bubble W	Vrap (Gel Pac	ks V	Vet Ice	Dry	ice S	leeves _			
Were	custody pa	pers properl	y filled out	(ink, signe	ed, etc.))?						N	IA (Y)) 1
Were	samples re	ceived in go		•	-		-	dicate				N	IA Y) N
Were a		If ap	plicable, ti	ssue sampl	les were	e receiv	ed:	Froze	n	Dantially.	True s	Orac v	-	
	atl cample l	ahels compl	eta (i e ana	lucie prec				11046	en P	urituity	Thawed	Thawed	(A)	
	=	abels compl hels and tags	•	•	ervatio	n, etc.)?	ı			·		N	IA (Ý)	•
Did all	l sample lal	bels and tag	s agree with	h custody p	ervation papers?	n, etc.)? <i>Indica</i>	ite maje	or disc	repanc	·		page 2.	NA Y) ,
Did all	l sample lal appropriate	bels and tags	s agree with	h custody p	ervation papers? receive	n, etc.)? <i>Indica</i> d for th	nte maje e tests	or disc indicat	repano :ed?	cies in th	e table on	page 2.	NA Y) ,
Did all Were D. Were	I sample lal appropriate the pH-pre	bels and tags bottles/cor eserved bott	s agree with stainers and les (see SMo	h custody p I volumes i O GEN SOP	ervation papers? receive p) recei	n, etc.)? Indica d for the ved at t	te majo e tests he appi	or disc indicat ropriat	repano :ed?	cies in th	e table on	page 2. Note that the page 2.	NA Y	1 (1 ·
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Did all Were Were Were	I sample late appropriate the pH-property VOA viale C12/Res no	bels and tagge e bottles/cor eserved bott s received w egative?	s agree with stainers and les (see SMo	h custody p I volumes i O GEN SOP	ervation papers? receive P) recei	n, etc.)? Indica d for the ved at the in the to	te majo e tests he appi able be	or disc indicat ropriat	repano :ed?	cies in th	e table on	page 2. No half the below 1	NA Y NA Y NA Y NA Y	, , , , ,
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Did all Were D. Were	I sample late appropriate the pH-property VOA viale C12/Res no	bels and tagge e bottles/cor eserved bott s received w egative?	s agree with stainers and les (see SMo	h custody p I volumes i O GEN SOP	ervation papers? receive P) recei	n, etc.)? Indica d for the ved at the in the to	te majo e tests he appi able be	or disc indicat ropriat	repano :ed?	cies in th	e table on	page 2. No half the below 1	NA Y NA Y NA Y NA Y	7 7 1 7
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Did all Were Were Were	I sample late appropriate the pH-property VOA viale C12/Res no	bels and tagge e bottles/cor eserved bott s received w egative?	s agree with stainers and les (see SMo	h custody p I volumes i O GEN SOP	ervation papers? receive p) recei ndicate Samp	Indicated for the ved at the the the the the the the the the th	te majo e tests he appi able be	or disc indicat ropriat	repano :ed?	cies in th	e table on	page 2. No half the below 1	NA Y NA Y NA Y NA Y	, , , , ,
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Did all Were 0. Were 1. Were	I sample late appropriate the pH-property VOA vial C12/Res no	bels and tags e bottles/cor eserved bott s received v egative?	s agree with ntainers and les (see SMo vithout head	h custody produced in customy produced in cust	ervation papers? receive p) recei ndicate Samp	Indicated for the ved at the the the the the the the the the th	te majo e tests he appl able be	or disc	repand ed? e pH?	ies in th	e table on	page 2. Noble below 1	NA Y NA Y NA Y NA Y	Time
Did all Were D. Were	I sample late appropriate the pH-property VOA vial C12/Res no	bels and tags e bottles/cor eserved bott s received v egative?	s agree with ntainers and les (see SMo vithout head	h custody produced in customy produced in cust	ervation papers? receive p) recei ndicate Samp	Indicated for the ved at the the the the the the the the the th	te majo e tests he appl able be	or disc	repand ed? e pH?	ies in th	e table on	page 2. Noble below 1	NA Y NA Y NA Y NA Y	
Did all Were 0. Were 1. Were	I sample late appropriate the pH-property VOA vial C12/Res no	bels and tags e bottles/cor eserved bott s received v egative?	s agree with ntainers and les (see SMo vithout head	h custody produced in customy produced in cust	ervation papers? receive p) recei ndicate Samp	Indicated for the ved at the the the the the the the the the th	te majo e tests he appl able be	or disc	repand ed? e pH?	ies in th	e table on	page 2. Noble below 1	NA Y NA Y NA Y NA Y	
Did all Were Were Were	I sample late appropriate the pH-property VOA vial C12/Res no	bels and tags e bottles/cor eserved bott s received v egative?	s agree with ntainers and les (see SMo vithout head	h custody produced in customy produced in cust	ervation papers? receive p) recei ndicate Samp	Indicated for the ved at the the the the the the the the the th	te majo e tests he appl able be	or disc	repand ed? e pH?	ies in th	e table on	page 2. Noble below 1	NA Y NA Y NA Y NA Y	



Total Solids

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00002

Sample Matrix: Soil

Analysis Method: 160.3 Modified

Prep Method: None

Service Request: K1711288

Date Collected: 10/10/17 - 10/17/17

Date Received: 10/12/17 - 10/18/17

Units: Percent

Basis: As Received

Solids, Total

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
IC-401-1A-101017	K1711288-001	95.6	-	-	1	11/03/17 14:28	
IC-401-1B-101017	K1711288-002	94.5	-	-	1	11/03/17 14:28	
IC-401-1C-101117	K1711288-003	94.5	-	-	1	11/03/17 14:28	
IC-401-1C-101117-D	K1711288-004	94.7	-	-	1	11/03/17 14:28	
IC-401-1D-101117	K1711288-005	92.5	-	-	1	11/03/17 14:28	
IC-401-2B-101117	K1711288-006	93.4	-	-	1	11/03/17 14:28	
IC1-401-2A-101217	K1711288-007	93.6	-	-	1	11/03/17 14:28	
IC2-401-2A-101217	K1711288-008	94.1	-	-	1	11/03/17 14:28	
IC3-401-2A-101217	K1711288-009	93.7	-	-	1	11/03/17 14:28	
IC-401-2C-101217	K1711288-010	94.6	-	-	1	11/03/17 14:28	
IC-401-2D-101217	K1711288-011	90.5	-	-	1	11/03/17 14:28	
IC-258-3A-101717	K1711288-012	95.3	-	-	1	11/03/17 14:28	
IC-258-3B-101717	K1711288-013	95.0	-	=	1	11/03/17 14:28	
IC-258-3C-101717	K1711288-014	91.6	-	=	1	11/03/17 14:28	
IC-258-3D-101717	K1711288-015	94.9	-	-	1	11/03/17 14:28	
IC-441-1A-101617	K1711288-016	89.2	-	=	1	11/03/17 14:28	
IC-441-1B-101617	K1711288-017	93.9	-	=	1	11/03/17 14:28	
IC-441-1C-101617	K1711288-018	91.6	-	-	1	11/03/17 14:28	
IC-441-1D-101617	K1711288-019	87.9	-	-	1	11/03/17 14:28	

QA/QC Report

Client: Teck American Incorporated

Project August 2017 Sampling SAT Study/B0095010.0005.00002

Date Collected:10/10/17 - 10/12/17 **Date Received:**10/12/17 - 10/14/17

Service Request:K1711288

Units:Percent

Sample Matrix: Soil

160.3 Modified

Analysis Method: Prep Method: None Basis: As Received

Replicate Sample Summary Inorganic Parameters

			Sample	Duplicate			RPD	Date
Sample Name:	Lab Code:	MRL	Result	Result	Average	RPD	Limit	Analyzed
IC-401-1A-101017	K1711288-001DUP	-	95.6	95.6	95.6	<1	20	11/03/17
IC-401-2D-101217	K1711288-011DUP	_	90.5	91.7	91.1	1	20	11/03/17

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Printed 11/21/2017 6:15:17 PM Superset Reference:17-0000442951 rev 00

Analytical Report

Client: Teck American Incorporated

Date Collected: 10/10/17 - 10/17/17 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00002

Sample Matrix: Soil

160.3 Modified

Analysis Method: Units: Percent **Prep Method:** Basis: Air Dried None

Solids, Total

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q	
IC-401-1A-101017	K1711288-001	97.8	-	1	11/17/17 17:16		
IC-401-1B-101017	K1711288-002	97.3	-	1	11/17/17 17:16		
IC-401-1C-101117	K1711288-003	97.2	-	1	11/17/17 17:16		
IC-401-1C-101117-D	K1711288-004	97.6	-	1	11/17/17 17:16		
IC-401-1D-101117	K1711288-005	94.8	-	1	11/17/17 17:16		
IC-401-2B-101117	K1711288-006	96.0	-	1	11/17/17 17:16		
IC1-401-2A-101217	K1711288-007	95.7	-	1	11/17/17 17:16		
IC2-401-2A-101217	K1711288-008	95.9	-	1	11/17/17 17:16		
IC3-401-2A-101217	K1711288-009	96.7	-	1	11/17/17 17:16		
IC-401-2C-101217	K1711288-010	96.1	-	1	11/17/17 17:16		
IC-401-2D-101217	K1711288-011	94.1	-	1	11/17/17 17:16		
IC-258-3A-101717	K1711288-012	98.3	-	1	11/17/17 17:16		
IC-258-3B-101717	K1711288-013	98.5	-	1	11/17/17 17:16		
IC-258-3C-101717	K1711288-014	95.5	-	1	11/17/17 17:16		
IC-258-3D-101717	K1711288-015	98.3	-	1	11/17/17 17:16		
IC-441-1A-101617	K1711288-016	95.4	-	1	11/17/17 17:16		
IC-441-1B-101617	K1711288-017	95.1	-	1	11/17/17 17:16		
IC-441-1C-101617	K1711288-018	95.8	-	1	11/17/17 17:16		
IC-441-1D-101617	K1711288-019	93.7	-	1	11/17/17 17:16		

Service Request: K1711288

Date Received: 10/12/17 - 10/18/17

QA/QC Report

Client: Teck American Incorporated

Project August 2017 Sampling SAT Study/B0095010.0005.00002 Date

Sample Matrix: Soil

Analysis Method:

160.3 Modified

Prep Method: None

Service Request:K1711288

Date Collected:10/10/17 - 10/12/17

Date Received: 10/12/17 - 10/14/17

Units:Percent
Basis: Air Dried

Replicate Sample Summary Inorganic Parameters

			Sample	Duplicate			RPD	Date
Sample Name:	Lab Code:	MRL	Result	Result	Average	RPD	Limit	Analyzed
IC-401-1A-101017	K1711288-001DUP	-	97.8	97.7	97.8	<1	10	11/17/17
IC-401-2D-101217	K1711288-011DUP	-	94.1	94.5	94.3	<1	10	11/17/17

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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General Chemistry

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Client: Teck American Incorporated

Date Collected: 10/10/17 - 10/17/17 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00002

Soil **Date Received:** 10/12/17 - 10/18/17

Sample Matrix:

Analysis Method: 9060 Units: Percent

Prep Method: Method Basis: Dry, per Method

Carbon, Total Organic (TOC)

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
IC-401-1A-101017	K1711288-001	5.97	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC-401-1B-101017	K1711288-002	4.56	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC-401-1C-101117	K1711288-003	4.73	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC-401-1C-101117-D	K1711288-004	5.00	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC-401-1D-101117	K1711288-005	6.09	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC-401-2B-101117	K1711288-006	5.73	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC1-401-2A-101217	K1711288-007	5.93	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC2-401-2A-101217	K1711288-008	4.24	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC3-401-2A-101217	K1711288-009	7.74	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC-401-2C-101217	K1711288-010	5.57	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC-401-2D-101217	K1711288-011	8.48	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC-258-3A-101717	K1711288-012	3.55	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC-258-3B-101717	K1711288-013	3.55	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC-258-3C-101717	K1711288-014	6.55	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC-258-3D-101717	K1711288-015	3.33	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC-441-1A-101617	K1711288-016	6.24	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC-441-1B-101617	K1711288-017	6.82	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC-441-1C-101617	K1711288-018	7.00	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC-441-1D-101617	K1711288-019	7.91	0.10	0.02	1	11/07/17 13:07	11/7/17	
Method Blank	K1711288-MB1	ND U	0.10	0.02	1	11/07/17 13:07	11/7/17	

Service Request: K1711288

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: Teck American Incorporated

Service Request: K1711288

Project August 2017 Sampling SAT Study/B0095010.0005.00002

Date Collected: 10/10/17 **Date Received:** 10/12/17

Sample Matrix: Soil

Date Analyzed: 11/07/17

Replicate Sample Summary General Chemistry Parameters

Sample Name: IC-401-1A-101017

Units: Percent

Lab Code: K1711288-001

Basis: Dry, per Method

Duplicate Sample

K1711288-

Analysis Sample K1711288
O01DUP

Analyte NameMethodMRLMDLResultResultAverageRPDRPD LimitCarbon, Total Organic (TOC)90600.100.025.975.985.98<1</td>20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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QA/QC Report

Client: Teck American Incorporated

August 2017 Sampling SAT Study/B0095010.0005.00002

Sample Matrix: Soil

K1711288 10/10/17

Date Collected: Date Received:

Service Request:

10/12/17

Date Analyzed: **Date Extracted:** 11/7/17 11/7/17

Duplicate Matrix Spike Summary Carbon, Total Organic (TOC)

Sample Name:

IC-401-1A-101017

Units:

Percent

Lab Code:

Project:

K1711288-001

Basis:

Dry, per Method

Analysis Method: Prep Method:

9060 Method

> **Matrix Spike** K1711288-001MS

Duplicate Matrix Spike

K1711288-001DMS

RPD Sample Spike Spike % Rec **Analyte Name** Result **Amount** % Rec Result Amount % Rec Limits **RPD** Limit Result Carbon, Total Organic (TOC) 5.97 12.0 6.00 100 11.9 5.95 100 20 70-122

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Printed 11/14/2017 10:53:30 AM Superset Reference: 17-0000442951 rev 00

QA/QC Report

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00002

~ ...

Sample Matrix: Soil

Service Request:

K1711288

Date Analyzed: Date Extracted:

11/07/17 11/07/17

Lab Control Sample Summary

Carbon, Total Organic (TOC)

Analysis Method: 9060

Prep Method:

Method

Units:

Percent

Basis:

Dry, per Method

Analysis Lot:

569162

			Spike		% Rec
Sample Name	Lab Code	Result	Amount	% Rec	Limits
Lab Control Sample	K1711288-LCS1	0.600	0.60	100	72-122

Analytical Report

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00002 **Date Collected:** 10/10/17 - 10/17/17

August 2017 Sampling SAT Study/D0093010.00003.00002

Date Received: 10/12/17 - 10/18/17

Sample Matrix: Soil

__ .

Service Request: K1711288

Analysis Method: PSEP Sulfide **Prep Method:** Method

Units: mg/Kg
Basis: Dry

Sulfide, Total

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
IC-401-1A-101017	K1711288-001	ND U	1.7	0.6	1	10/20/17 02:12	10/19/17	**
IC-401-1B-101017	K1711288-002	ND U	1.7	0.6	1	10/20/17 02:12	10/19/17	**
IC-401-1C-101117	K1711288-003	0.5 J	1.6	0.5	1	10/20/17 02:12	10/19/17	**
IC-401-1C-101117-D	K1711288-004	0.8 J	1.7	0.6	1	10/20/17 02:12	10/19/17	**
IC-401-1D-101117	K1711288-005	0.6 J	1.9	0.6	1	10/20/17 02:12	10/19/17	**
IC-401-2B-101117	K1711288-006	0.5 J	1.7	0.5	1	10/20/17 02:12	10/19/17	**
IC1-401-2A-101217	K1711288-007	ND U	1.7	0.6	1	10/20/17 02:12	10/19/17	
IC2-401-2A-101217	K1711288-008	ND U	1.7	0.6	1	10/20/17 02:12	10/19/17	
IC3-401-2A-101217	K1711288-009	ND U	1.5	0.5	1	10/20/17 02:12	10/19/17	
IC-401-2C-101217	K1711288-010	0.5 J	1.5	0.5	1	10/20/17 02:12	10/19/17	
IC-401-2D-101217	K1711288-011	ND U	1.9	0.6	1	10/20/17 02:12	10/19/17	
IC-258-3A-101717	K1711288-012	ND U	1.4	0.5	1	10/24/17 01:05	10/23/17	
IC-258-3B-101717	K1711288-013	ND U	1.5	0.5	1	10/24/17 01:05	10/23/17	
IC-258-3C-101717	K1711288-014	ND U	1.5	0.5	1	10/24/17 01:05	10/23/17	
IC-258-3D-101717	K1711288-015	ND U	1.5	0.5	1	10/24/17 01:05	10/23/17	
IC-441-1A-101617	K1711288-016	ND U	1.5	0.5	1	10/24/17 01:05	10/23/17	
IC-441-1B-101617	K1711288-017	ND U	2.1	0.7	1	11/10/17 20:56	11/10/17	**
IC-441-1C-101617	K1711288-018	ND U	1.5	0.5	1	10/24/17 01:05	10/23/17	
IC-441-1D-101617	K1711288-019	ND U	1.5	0.5	1	10/24/17 01:05	10/23/17	
Method Blank	K1711288-MB1	ND U	1.0	0.3	1	10/20/17 02:12	10/19/17	
Method Blank	K1711288-MB2	1.2	1.0	0.3	1	10/24/17 01:05	10/23/17	
Method Blank	K1711288-MB3	ND U	1.0	0.3	1	11/10/17 20:56	11/10/17	

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: Teck American Incorporated

August 2017 Sampling SAT Study/B0095010.0005.00002

Sample Matrix: Soil

Project

- ...

Date Received: 10/14/17

Date Analyzed: 10/20/17

Units: mg/Kg

Basis: Dry

Service Request: K1711288

Date Collected: 10/12/17

Triplicate Sample Summary General Chemistry Parameters

Sample Name: IC1-401-2A-101217

Lab Code: K1711288-007

Analysis Method: PSEP Sulfide

Prep Method: Method

Analyte Name	MRL	MDL	Sample Result	Duplicate K1711288- 007DUP Result	Triplicate K1711288- 007TRP Result	Average	RSD	RSD Limit
Sulfide, Total	1.7	0.6	ND	ND	ND	NC	NC	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Printed 11/14/2017 10:53:31 AM

SuperSet Reference: 17-0000442951 rev $00\,$

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: Teck American Incorporated

August 2017 Sampling SAT Study/B0095010.0005.00002

Sample Matrix: Soil

Project

Service Request: K1711288 **Date Collected:** 10/17/17

Date Received: 10/18/17

Date Analyzed: 10/24/17

Units: mg/Kg

Basis: Dry

Triplicate Sample Summary General Chemistry Parameters

Sample Name: IC-258-3A-101717

Lab Code: K1711288-012

Analysis Method: PSEP Sulfide

Prep Method: Method

Analyte Name	MRL	MDL	Sample Result	Duplicate K1711288- 012DUP Result	Triplicate K1711288- 012TRP Result	Average	RSD	RSD Limit
Sulfide, Total	1.4	0.5	ND	ND	ND	NC	NC	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Printed 11/14/2017 10:53:31 AM

SuperSet Reference: 17-0000442951 rev 00

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: Teck American Incorporated Service Request: K1711288

ProjectAugust 2017 Sampling SAT Study/B0095010.0005.00002Date Collected:NASample Matrix:SoilDate Received:NA

Date Analyzed: 11/10/17

Triplicate Sample Summary General Chemistry Parameters

Sample Name: Batch QC Units: mg/Kg

Lab Code:K1712207-001Basis:DryAnalysis Method:PSEP Sulfide

Prep Method: Method

Analyte Name	MRL	MDL	Sample Result	Duplicate K1712207- 001DUP Result	Triplicate K1712207- 001TRP Result	Average	RSD	RSD Limit
Sulfide, Total	420	130	830	890	890	872	4	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Printed 11/14/2017 10:53:31 AM

SuperSet Reference: 17-0000442951 rev $00\,$

QA/QC Report

Client: Teck American Incorporated

August 2017 Sampling SAT Study/B0095010.0005.00002

Sample Matrix: Soil

Date Collected: Date Received: K1711288 10/12/17

Service Request:

10/14/17

Date Analyzed: Date Extracted: 10/20/17 10/19/17

Duplicate Matrix Spike Summary

Sulfide, Total

Sample Name: Lab Code:

Project:

IC1-401-2A-101217

K1711288-007

Units: mg/Kg **Basis:** Dry

Analysis Method:

PSEP Sulfide

Prep Method:

Method

Matrix Spike

Duplicate Matrix Spike

K1711288-007MS

K1711288-007DMS

	Sample		Spike			Spike		% Rec		RPD
Analyte Name	Result	Result	Amount	% Rec	Result	Amount	% Rec	Limits	RPD	Limit
Sulfide, Total	ND U	480	610	78	490	620	80	28-175	3	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Printed 11/14/2017 10:53:31 AM Superset Reference: 17-0000442951 rev 00

QA/QC Report

Client: Teck American Incorporated

August 2017 Sampling SAT Study/B0095010.0005.00002

Sample Matrix:

Project:

Soil

Service Request: Date Collected:

K1711288

10/17/17 10/18/17

Date Received: Date Analyzed:

10/24/17

Date Extracted:

10/23/17

Duplicate Matrix Spike Summary

Sulfide, Total

Sample Name:

IC-258-3A-101717

Lab Code: K1711288-012 **Units:** mg/Kg **Basis:** Dry

Analysis Method:

PSEP Sulfide

Prep Method:

Method

Matrix Spike

Duplicate Matrix Spike

K1711288-012MS

K1711288-012DMS

	Sample		Spike			Spike		% Rec		RPD
Analyte Name	Result	Result	Amount	% Rec	Result	Amount	% Rec	Limits	RPD	Limit
Sulfide, Total	ND U	460	500	92	470	510	93	28-175	2	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Printed 11/14/2017 10:53:31 AM Superset Reference: 17-0000442951 rev 00

QA/QC Report

Client: Teck American Incorporated **Service Request:**

K1711288

Project:

August 2017 Sampling SAT Study/B0095010.0005.00002

Date Collected:

N/A

Sample Matrix:

Soil

Date Received:

N/A 11/10/17

Date Analyzed: Date Extracted:

11/10/17

Duplicate Matrix Spike Summary

Sulfide, Total

Sample Name: Batch QC **Units:**

mg/Kg

Lab Code:

K1712207-001

Basis:

Dry

Analysis Method: Prep Method:

PSEP Sulfide

Method

Matrix Spike K1712207-001MS **Duplicate Matrix Spike**

K1712207-001DMS

	Sample		Spike			Spike		% Rec		RPD
Analyte Name	Result	Result	Amount	% Rec	Result	Amount	% Rec	Limits	RPD	Limit
Sulfide, Total	830	2040	1190	101	1910	1190	90	28-175	6	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Printed 11/14/2017 10:53:31 AM Superset Reference: 17-0000442951 rev 00

QA/QC Report

Client: Teck American Incorporated

August 2017 Sampling SAT Study/B0095010.0005.00002

Service Request: Date Analyzed: K1711288

Sample Matrix:

Prep Method:

Project:

Soil

Date Analyzed:
Date Extracted:

10/20/17 10/19/17

Lab Control Sample Summary

Sulfide, Total

Analysis Method: PSEP Sulfide

Method

Units:

mg/Kg

Basis:

Dry

Analysis Lot:

566694

			Spike		% Rec
Sample Name	Lab Code	Result	Amount	% Rec	Limits
Lab Control Sample	K1711288-LCS1	346	360	97	39-166

QA/QC Report

Client: Teck American Incorporated

August 2017 Sampling SAT Study/B0095010.0005.00002

Service Request: Date Analyzed:

K1711288 10/24/17

Sample Matrix:

Project:

Soil

Date Extracted:

10/23/17

Lab Control Sample Summary

Sulfide, Total

Analysis Method: PSEP Sulfide

Units:

mg/Kg

Prep Method:

Method

Basis:

Dry

Analysis Lot:

567112

			Spike		% Rec
Sample Name	Lab Code	Result	Amount	% Rec	Limits
Lab Control Sample	K1711288-LCS2	349	360	98	39-166

QA/QC Report

Client: Teck American Incorporated

August 2017 Sampling SAT Study/B0095010.0005.00002

Sample Matrix: Soil

Project:

Service Request:

K1711288

Date Analyzed:

11/10/17

Date Extracted:

11/10/17

Lab Control Sample Summary

Sulfide, Total

Analysis Method: PSEP Sulfide

Prep Method: Method **Units:**

mg/Kg

Basis:

Dry

Analysis Lot:

569680

			Spike		% Rec
Sample Name	Lab Code	Result	Amount	% Rec	Limits
Lab Control Sample	K1711288-LCS3	279	330	85	39-166



Metals

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Client: Teck American Incorporated

Service Request: K1711288 **Date Collected:** 10/10/17 10:58 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00002

Sample Matrix: Soil **Date Received:** 10/12/17 09:30

Sample Name: IC-401-1A-101017 Basis: NA

Lab Code: K1711288-001

SPLP Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.		Date Extracted	Q
Aluminum	6010C	20.0	mg/L	0.010	0.003	1	11/27/17 16:09	11/21/17	
Antimony	6010C	0.045	mg/L	0.020	0.006	1	11/27/17 16:09	11/21/17	
Arsenic	6010C	0.101	mg/L	0.010	0.004	1	11/27/17 16:09	11/21/17	
Barium	6010C	0.17 J	mg/L	0.20	0.10	1	11/27/17 16:09	11/21/17	
Beryllium	6010C	ND U	mg/L	0.010	0.0002	1	11/27/17 16:09	11/21/17	
Cadmium	6010C	0.004 J	mg/L	0.010	0.0002	1	11/27/17 16:09	11/21/17	
Calcium	6010C	3.4	mg/L	2.0	0.008	1	11/27/17 16:09	11/21/17	
Chromium	6010C	0.004 J	mg/L	0.010	0.002	1	11/27/17 16:09	11/21/17	
Cobalt	6010C	0.003 J	mg/L	0.010	0.0005	1	11/27/17 16:09	11/21/17	
Copper	6010C	0.023	mg/L	0.010	0.002	1	11/27/17 16:09	11/21/17	
Iron	6010C	9.97	mg/L	0.020	0.006	1	11/27/17 16:09	11/21/17	
Lead	6010C	0.371	mg/L	0.010	0.003	1	11/27/17 16:09	11/21/17	
Magnesium	6010C	1.29	mg/L	0.50	0.002	1	11/27/17 16:09	11/21/17	
Manganese	6010C	0.539	mg/L	0.010	0.0005	1	11/27/17 16:09	11/21/17	
Nickel	6010C	0.005 J	mg/L	0.010	0.0007	1	11/27/17 16:09	11/21/17	
Potassium	6010C	2.25	mg/L	0.20	0.04	1	11/27/17 16:09	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 16:09	11/21/17	
Silver	6010C	0.004 J	mg/L	0.020	0.0008	1	11/27/17 16:09	11/21/17	
Sodium	6010C	1.9 J	mg/L	2.0	0.03	1	11/27/17 16:09	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 16:09	11/21/17	
Vanadium	6010C	0.013	mg/L	0.010	0.0008	1	11/27/17 16:09	11/21/17	
Zinc	6010C	0.380	mg/L	0.0040	0.0200	1	11/27/17 16:09	11/21/17	

Analytical Report

Date Received: 10/12/17 09:30

Client: Teck American Incorporated

Service Request: K1711288 **Date Collected:** 10/10/17 11:55 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00002

Sample Matrix:

Soil

Sample Name: IC-401-1B-101017 Basis: NA

Lab Code: K1711288-002

SPLP Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	6010C	16.2	mg/L	0.010	0.003	1	11/27/17 16:25	11/21/17	
Antimony	6010C	0.038	mg/L	0.020	0.006	1	11/27/17 16:25	11/21/17	
Arsenic	6010C	0.085	mg/L	0.010	0.004	1	11/27/17 16:25	11/21/17	
Barium	6010C	0.15 J	mg/L	0.20	0.10	1	11/27/17 16:25	11/21/17	
Beryllium	6010C	ND U	mg/L	0.010	0.0002	1	11/27/17 16:25	11/21/17	
Cadmium	6010C	0.004 J	mg/L	0.010	0.0002	1	11/27/17 16:25	11/21/17	
Calcium	6010C	3.0	mg/L	2.0	0.008	1	11/27/17 16:25	11/21/17	
Chromium	6010C	0.004 J	mg/L	0.010	0.002	1	11/27/17 16:25	11/21/17	
Cobalt	6010C	0.003 J	mg/L	0.010	0.0005	1	11/27/17 16:25	11/21/17	
Copper	6010C	0.019	mg/L	0.010	0.002	1	11/27/17 16:25	11/21/17	
Iron	6010C	7.82	mg/L	0.020	0.006	1	11/27/17 16:25	11/21/17	
Lead	6010C	0.256	mg/L	0.010	0.003	1	11/27/17 16:25	11/21/17	
Magnesium	6010C	0.97	mg/L	0.50	0.002	1	11/27/17 16:25	11/21/17	
Manganese	6010C	0.580	mg/L	0.010	0.0005	1	11/27/17 16:25	11/21/17	
Nickel	6010C	0.004 J	mg/L	0.010	0.0007	1	11/27/17 16:25	11/21/17	
Potassium	6010C	1.75	mg/L	0.20	0.04	1	11/27/17 16:25	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 16:25	11/21/17	
Silver	6010C	ND U	mg/L	0.020	0.0008	1	11/27/17 16:25	11/21/17	
Sodium	6010C	1.8 J	mg/L	2.0	0.03	1	11/27/17 16:25	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 16:25	11/21/17	
Vanadium	6010C	0.010 J	mg/L	0.010	0.0008	1	11/27/17 16:25	11/21/17	
Zinc	6010C	0.338	mg/L	0.0040	0.0200	1	11/27/17 16:25	11/21/17	

Analytical Report

Date Received: 10/13/17 09:30

Client: Teck American Incorporated

Service Request: K1711288 **Date Collected:** 10/11/17 10:23 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00002

Sample Matrix:

Soil

Sample Name: IC-401-1C-101117 Basis: NA

Lab Code: K1711288-003

SPLP Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	ate Extracted	Q
Aluminum	6010C	17.3	mg/L	0.010	0.003	1	11/27/17 16:28	11/21/17	
Antimony	6010C	0.038	mg/L	0.020	0.006	1	11/27/17 16:28	11/21/17	
Arsenic	6010C	0.099	mg/L	0.010	0.004	1	11/27/17 16:28	11/21/17	
Barium	6010C	0.16 J	mg/L	0.20	0.10	1	11/27/17 16:28	11/21/17	
Beryllium	6010C	0.0003 J	mg/L	0.010	0.0002	1	11/27/17 16:28	11/21/17	
Cadmium	6010C	0.004 J	mg/L	0.010	0.0002	1	11/27/17 16:28	11/21/17	
Calcium	6010C	3.2	mg/L	2.0	0.008	1	11/27/17 16:28	11/21/17	
Chromium	6010C	0.004 J	mg/L	0.010	0.002	1	11/27/17 16:28	11/21/17	
Cobalt	6010C	0.003 J	mg/L	0.010	0.0005	1	11/27/17 16:28	11/21/17	
Copper	6010C	0.021	mg/L	0.010	0.002	1	11/27/17 16:28	11/21/17	
Iron	6010C	8.74	mg/L	0.020	0.006	1	11/27/17 16:28	11/21/17	
Lead	6010C	0.371	mg/L	0.010	0.003	1	11/27/17 16:28	11/21/17	
Magnesium	6010C	1.09	mg/L	0.50	0.002	1	11/27/17 16:28	11/21/17	
Manganese	6010C	0.537	mg/L	0.010	0.0005	1	11/27/17 16:28	11/21/17	
Nickel	6010C	0.004 J	mg/L	0.010	0.0007	1	11/27/17 16:28	11/21/17	
Potassium	6010C	2.06	mg/L	0.20	0.04	1	11/27/17 16:28	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 16:28	11/21/17	
Silver	6010C	0.0008 J	mg/L	0.020	0.0008	1	11/27/17 16:28	11/21/17	
Sodium	6010C	1.8 J	mg/L	2.0	0.03	1	11/27/17 16:28	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 16:28	11/21/17	
Vanadium	6010C	0.011	mg/L	0.010	0.0008	1	11/27/17 16:28	11/21/17	
Zinc	6010C	0.369	mg/L	0.0040	0.0200	1	11/27/17 16:28	11/21/17	

Analytical Report

Date Received: 10/13/17 09:30

Client: Teck American Incorporated

Service Request: K1711288 **Date Collected:** 10/11/17 12:35 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00002

Sample Matrix:

Soil

Sample Name: IC-401-1C-101117-D Basis: NA

Lab Code: K1711288-004

SPLP Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	6010C	16.8	mg/L	0.010	0.003	1	11/27/17 16:44	11/21/17	
Antimony	6010C	0.042	mg/L	0.020	0.006	1	11/27/17 16:44	11/21/17	
Arsenic	6010C	0.094	mg/L	0.010	0.004	1	11/27/17 16:44	11/21/17	
Barium	6010C	0.17 J	mg/L	0.20	0.10	1	11/27/17 16:44	11/21/17	
Beryllium	6010C	0.0002 J	mg/L	0.010	0.0002	1	11/27/17 16:44	11/21/17	
Cadmium	6010C	0.004 J	mg/L	0.010	0.0002	1	11/27/17 16:44	11/21/17	
Calcium	6010C	3.2	mg/L	2.0	0.008	1	11/27/17 16:44	11/21/17	
Chromium	6010C	0.004 J	mg/L	0.010	0.002	1	11/27/17 16:44	11/21/17	
Cobalt	6010C	0.003 J	mg/L	0.010	0.0005	1	11/27/17 16:44	11/21/17	
Copper	6010C	0.020	mg/L	0.010	0.002	1	11/27/17 16:44	11/21/17	
Iron	6010C	8.81	mg/L	0.020	0.006	1	11/27/17 16:44	11/21/17	
Lead	6010C	0.361	mg/L	0.010	0.003	1	11/27/17 16:44	11/21/17	
Magnesium	6010C	1.13	mg/L	0.50	0.002	1	11/27/17 16:44	11/21/17	
Manganese	6010C	0.528	mg/L	0.010	0.0005	1	11/27/17 16:44	11/21/17	
Nickel	6010C	0.005 J	mg/L	0.010	0.0007	1	11/27/17 16:44	11/21/17	
Potassium	6010C	2.22	mg/L	0.20	0.04	1	11/27/17 16:44	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 16:44	11/21/17	
Silver	6010C	0.001 J	mg/L	0.020	0.0008	1	11/27/17 16:44	11/21/17	
Sodium	6010C	1.8 J	mg/L	2.0	0.03	1	11/27/17 16:44	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 16:44	11/21/17	
Vanadium	6010C	0.012	mg/L	0.010	0.0008	1	11/27/17 16:44	11/21/17	
Zinc	6010C	0.370	mg/L	0.0040	0.0200	1	11/27/17 16:44	11/21/17	

Analytical Report

Date Received: 10/13/17 09:30

Client: Teck American Incorporated

Service Request: K1711288 **Date Collected:** 10/11/17 14:00 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00002

Sample Matrix: Soil

Sample Name: IC-401-1D-101117 Basis: NA

Lab Code: K1711288-005

SPLP Metals

	Analysis	.		1.607	1.657	5 .11		.	
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed		Q
Aluminum	6010C	11.7	mg/L	0.010	0.003	1	11/27/17 16:46	11/21/17	
Antimony	6010C	0.041	mg/L	0.020	0.006	1	11/27/17 16:46	11/21/17	
Arsenic	6010C	0.101	mg/L	0.010	0.004	1	11/27/17 16:46	11/21/17	
Barium	6010C	0.15 J	mg/L	0.20	0.10	1	11/27/17 16:46	11/21/17	
Beryllium	6010C	ND U	mg/L	0.010	0.0002	1	11/27/17 16:46	11/21/17	
Cadmium	6010C	0.003 J	mg/L	0.010	0.0002	1	11/27/17 16:46	11/21/17	
Calcium	6010C	3.4	mg/L	2.0	0.008	1	11/27/17 16:46	11/21/17	
Chromium	6010C	0.002 J	mg/L	0.010	0.002	1	11/27/17 16:46	11/21/17	
Cobalt	6010C	0.001 J	mg/L	0.010	0.0005	1	11/27/17 16:46	11/21/17	
Copper	6010C	0.021	mg/L	0.010	0.002	1	11/27/17 16:46	11/21/17	
Iron	6010C	6.56	mg/L	0.020	0.006	1	11/27/17 16:46	11/21/17	
Lead	6010C	0.300	mg/L	0.010	0.003	1	11/27/17 16:46	11/21/17	
Magnesium	6010C	0.98	mg/L	0.50	0.002	1	11/27/17 16:46	11/21/17	
Manganese	6010C	0.343	mg/L	0.010	0.0005	1	11/27/17 16:46	11/21/17	
Nickel	6010C	0.003 J	mg/L	0.010	0.0007	1	11/27/17 16:46	11/21/17	
Potassium	6010C	3.25	mg/L	0.20	0.04	1	11/27/17 16:46	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 16:46	11/21/17	
Silver	6010C	0.001 J	mg/L	0.020	0.0008	1	11/27/17 16:46	11/21/17	
Sodium	6010C	1.9 J	mg/L	2.0	0.03	1	11/27/17 16:46	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 16:46	11/21/17	
Vanadium	6010C	0.009 J	mg/L	0.010	0.0008	1	11/27/17 16:46	11/21/17	
Zinc	6010C	0.339	mg/L	0.0040	0.0200	1	11/27/17 16:46	11/21/17	

Analytical Report

Date Received: 10/13/17 09:30

Client: Teck American Incorporated

Service Request: K1711288 **Date Collected:** 10/11/17 15:38 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00002

Sample Matrix:

Soil

Sample Name: IC-401-2B-101117 Basis: NA

Lab Code: K1711288-006

SPLP Metals

	Analysis	.	T T 1.	1.007	1.007	5 .11		D . D	_
Analyte Name	Method	Result	Units	MRL	MDL	Dil.		Date Extracted	Q
Aluminum	6010C	15.1	mg/L	0.010	0.003	1	11/27/17 16:49	11/21/17	
Antimony	6010C	0.035	mg/L	0.020	0.006	1	11/27/17 16:49	11/21/17	
Arsenic	6010C	0.085	mg/L	0.010	0.004	1	11/27/17 16:49	11/21/17	
Barium	6010C	0.16 J	mg/L	0.20	0.10	1	11/27/17 16:49	11/21/17	
Beryllium	6010C	0.0002 J	mg/L	0.010	0.0002	1	11/27/17 16:49	11/21/17	
Cadmium	6010C	0.005 J	mg/L	0.010	0.0002	1	11/27/17 16:49	11/21/17	
Calcium	6010C	3.5	mg/L	2.0	0.008	1	11/27/17 16:49	11/21/17	
Chromium	6010C	0.003 J	mg/L	0.010	0.002	1	11/27/17 16:49	11/21/17	
Cobalt	6010C	0.002 J	mg/L	0.010	0.0005	1	11/27/17 16:49	11/21/17	
Copper	6010C	0.020	mg/L	0.010	0.002	1	11/27/17 16:49	11/21/17	
Iron	6010C	6.92	mg/L	0.020	0.006	1	11/27/17 16:49	11/21/17	
Lead	6010C	0.264	mg/L	0.010	0.003	1	11/27/17 16:49	11/21/17	
Magnesium	6010C	0.98	mg/L	0.50	0.002	1	11/27/17 16:49	11/21/17	
Manganese	6010C	0.571	mg/L	0.010	0.0005	1	11/27/17 16:49	11/21/17	
Nickel	6010C	0.003 J	mg/L	0.010	0.0007	1	11/27/17 16:49	11/21/17	
Potassium	6010C	2.46	mg/L	0.20	0.04	1	11/27/17 16:49	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 16:49	11/21/17	
Silver	6010C	0.0008 J	mg/L	0.020	0.0008	1	11/27/17 16:49	11/21/17	
Sodium	6010C	1.9 J	mg/L	2.0	0.03	1	11/27/17 16:49	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 16:49	11/21/17	
Vanadium	6010C	0.008 J	mg/L	0.010	0.0008	1	11/27/17 16:49	11/21/17	
Zinc	6010C	0.383	mg/L	0.0040	0.0200	1	11/27/17 16:49	11/21/17	

Analytical Report

Client: Teck American Incorporated

Service Request: K1711288 **Date Collected:** 10/12/17 09:20 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00002

Sample Matrix:

Sample Name:

Soil

IC1-401-2A-101217

Lab Code: K1711288-007

Date Received: 10/14/17 09:30

Basis: NA

SPLP Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed I	ate Extracted	Q
Aluminum	6010C	15.1	mg/L	0.010	0.003	1	11/27/17 16:51	11/21/17	
Antimony	6010C	0.066	mg/L	0.020	0.006	1	11/27/17 16:51	11/21/17	
Arsenic	6010C	0.148	mg/L	0.010	0.004	1	11/27/17 16:51	11/21/17	
Barium	6010C	0.15 J	mg/L	0.20	0.10	1	11/27/17 16:51	11/21/17	
Beryllium	6010C	ND U	mg/L	0.010	0.0002	1	11/27/17 16:51	11/21/17	
Cadmium	6010C	0.006 J	mg/L	0.010	0.0002	1	11/27/17 16:51	11/21/17	
Calcium	6010C	3.1	mg/L	2.0	0.008	1	11/27/17 16:51	11/21/17	
Chromium	6010C	0.004 J	mg/L	0.010	0.002	1	11/27/17 16:51	11/21/17	
Cobalt	6010C	0.003 J	mg/L	0.010	0.0005	1	11/27/17 16:51	11/21/17	
Copper	6010C	0.027	mg/L	0.010	0.002	1	11/27/17 16:51	11/21/17	
Iron	6010C	7.82	mg/L	0.020	0.006	1	11/27/17 16:51	11/21/17	
Lead	6010C	0.439	mg/L	0.010	0.003	1	11/27/17 16:51	11/21/17	
Magnesium	6010C	1.08	mg/L	0.50	0.002	1	11/27/17 16:51	11/21/17	
Manganese	6010C	0.596	mg/L	0.010	0.0005	1	11/27/17 16:51	11/21/17	
Nickel	6010C	0.004 J	mg/L	0.010	0.0007	1	11/27/17 16:51	11/21/17	
Potassium	6010C	2.73	mg/L	0.20	0.04	1	11/27/17 16:51	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 16:51	11/21/17	
Silver	6010C	0.002 J	mg/L	0.020	0.0008	1	11/27/17 16:51	11/21/17	
Sodium	6010C	2.0 J	mg/L	2.0	0.03	1	11/27/17 16:51	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 16:51	11/21/17	
Vanadium	6010C	0.010	mg/L	0.010	0.0008	1	11/27/17 16:51	11/21/17	
Zinc	6010C	0.446	mg/L	0.0040	0.0200	1	11/27/17 16:51	11/21/17	

Analytical Report

Client: Teck American Incorporated

Service Request: K1711288 **Date Collected:** 10/12/17 10:15 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00002

Sample Matrix: Soil **Date Received:** 10/14/17 09:30

Sample Name: IC2-401-2A-101217 Basis: NA

Lab Code: K1711288-008

SPLP Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed I	Oate Extracted	Q
Aluminum	6010C	15.2	mg/L	0.010	0.003	1	11/27/17 16:54	11/21/17	
Antimony	6010C	0.052	mg/L	0.020	0.006	1	11/27/17 16:54	11/21/17	
Arsenic	6010C	0.148	mg/L	0.010	0.004	1	11/27/17 16:54	11/21/17	
Barium	6010C	0.16 J	mg/L	0.20	0.10	1	11/27/17 16:54	11/21/17	
Beryllium	6010C	0.0002 J	mg/L	0.010	0.0002	1	11/27/17 16:54	11/21/17	
Cadmium	6010C	0.006 J	mg/L	0.010	0.0002	1	11/27/17 16:54	11/21/17	
Calcium	6010C	3.2	mg/L	2.0	0.008	1	11/27/17 16:54	11/21/17	
Chromium	6010C	0.003 J	mg/L	0.010	0.002	1	11/27/17 16:54	11/21/17	
Cobalt	6010C	0.003 J	mg/L	0.010	0.0005	1	11/27/17 16:54	11/21/17	
Copper	6010C	0.025	mg/L	0.010	0.002	1	11/27/17 16:54	11/21/17	
Iron	6010C	7.83	mg/L	0.020	0.006	1	11/27/17 16:54	11/21/17	
Lead	6010C	0.400	mg/L	0.010	0.003	1	11/27/17 16:54	11/21/17	
Magnesium	6010C	1.04	mg/L	0.50	0.002	1	11/27/17 16:54	11/21/17	
Manganese	6010C	0.686	mg/L	0.010	0.0005	1	11/27/17 16:54	11/21/17	
Nickel	6010C	0.004 J	mg/L	0.010	0.0007	1	11/27/17 16:54	11/21/17	
Potassium	6010C	2.59	mg/L	0.20	0.04	1	11/27/17 16:54	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 16:54	11/21/17	
Silver	6010C	0.001 J	mg/L	0.020	0.0008	1	11/27/17 16:54	11/21/17	
Sodium	6010C	1.9 J	mg/L	2.0	0.03	1	11/27/17 16:54	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 16:54	11/21/17	
Vanadium	6010C	0.010	mg/L	0.010	0.0008	1	11/27/17 16:54	11/21/17	
Zinc	6010C	0.419	mg/L	0.0040	0.0200	1	11/27/17 16:54	11/21/17	

Analytical Report

Client: Teck American Incorporated

Service Request: K1711288 **Date Collected:** 10/12/17 10:55 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00002

Sample Matrix: Soil **Date Received:** 10/14/17 09:30

Sample Name: Basis: NA IC3-401-2A-101217

Lab Code: K1711288-009

SPLP Metals

A a laud a Nila ana a	Analysis	D14	TT 24	MDI	MDI	Da	D-4- All	D-4- E-44-1	0
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed		Q
Aluminum	6010C	16.3	mg/L	0.010	0.003	1	11/27/17 16:56	11/21/17	
Antimony	6010C	0.065	mg/L	0.020	0.006	1	11/27/17 16:56	11/21/17	
Arsenic	6010C	0.154	mg/L	0.010	0.004	1	11/27/17 16:56	11/21/17	
Barium	6010C	0.15 J	mg/L	0.20	0.10	1	11/27/17 16:56	11/21/17	
Beryllium	6010C	0.0003 J	mg/L	0.010	0.0002	1	11/27/17 16:56	11/21/17	
Cadmium	6010C	0.007 J	mg/L	0.010	0.0002	1	11/27/17 16:56	11/21/17	
Calcium	6010C	3.3	mg/L	2.0	0.008	1	11/27/17 16:56	11/21/17	
Chromium	6010C	0.003 J	mg/L	0.010	0.002	1	11/27/17 16:56	11/21/17	
Cobalt	6010C	0.003 J	mg/L	0.010	0.0005	1	11/27/17 16:56	11/21/17	
Copper	6010C	0.027	mg/L	0.010	0.002	1	11/27/17 16:56	11/21/17	
Iron	6010C	8.37	mg/L	0.020	0.006	1	11/27/17 16:56	11/21/17	
Lead	6010C	0.431	mg/L	0.010	0.003	1	11/27/17 16:56	11/21/17	
Magnesium	6010C	1.10	mg/L	0.50	0.002	1	11/27/17 16:56	11/21/17	
Manganese	6010C	0.672	mg/L	0.010	0.0005	1	11/27/17 16:56	11/21/17	
Nickel	6010C	0.004 J	mg/L	0.010	0.0007	1	11/27/17 16:56	11/21/17	
Potassium	6010C	2.60	mg/L	0.20	0.04	1	11/27/17 16:56	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 16:56	11/21/17	
Silver	6010C	0.001 J	mg/L	0.020	0.0008	1	11/27/17 16:56	11/21/17	
Sodium	6010C	1.9 J	mg/L	2.0	0.03	1	11/27/17 16:56	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 16:56	11/21/17	
Vanadium	6010C	0.011	mg/L	0.010	0.0008	1	11/27/17 16:56	11/21/17	
Zinc	6010C	0.482	mg/L	0.0040	0.0200	1	11/27/17 16:56	11/21/17	

Analytical Report

Client: Teck American Incorporated

Service Request: K1711288 **Date Collected:** 10/12/17 12:50 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00002

Sample Matrix: Soil

Date Received: 10/14/17 09:30

Sample Name: IC-401-2C-101217 Lab Code: K1711288-010

SPLP Metals

Basis: NA

A LAN	Analysis	D 1/	T T *4	MDI	MDI	D.II	D (A 1 1		0
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed		Q
Aluminum	6010C	15.9	mg/L	0.010	0.003	1	11/27/17 16:58	11/21/17	
Antimony	6010C	0.041	mg/L	0.020	0.006	1	11/27/17 16:58	11/21/17	
Arsenic	6010C	0.110	mg/L	0.010	0.004	1	11/27/17 16:58	11/21/17	
Barium	6010C	0.16 J	mg/L	0.20	0.10	1	11/27/17 16:58	11/21/17	
Beryllium	6010C	0.0002 J	mg/L	0.010	0.0002	1	11/27/17 16:58	11/21/17	
Cadmium	6010C	0.005 J	mg/L	0.010	0.0002	1	11/27/17 16:58	11/21/17	
Calcium	6010C	3.2	mg/L	2.0	0.008	1	11/27/17 16:58	11/21/17	
Chromium	6010C	0.003 J	mg/L	0.010	0.002	1	11/27/17 16:58	11/21/17	
Cobalt	6010C	0.002 J	mg/L	0.010	0.0005	1	11/27/17 16:58	11/21/17	
Copper	6010C	0.023	mg/L	0.010	0.002	1	11/27/17 16:58	11/21/17	
Iron	6010C	8.14	mg/L	0.020	0.006	1	11/27/17 16:58	11/21/17	
Lead	6010C	0.346	mg/L	0.010	0.003	1	11/27/17 16:58	11/21/17	
Magnesium	6010C	1.00	mg/L	0.50	0.002	1	11/27/17 16:58	11/21/17	
Manganese	6010C	0.558	mg/L	0.010	0.0005	1	11/27/17 16:58	11/21/17	
Nickel	6010C	0.004 J	mg/L	0.010	0.0007	1	11/27/17 16:58	11/21/17	
Potassium	6010C	2.08	mg/L	0.20	0.04	1	11/27/17 16:58	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 16:58	11/21/17	
Silver	6010C	0.001 J	mg/L	0.020	0.0008	1	11/27/17 16:58	11/21/17	
Sodium	6010C	1.9 J	mg/L	2.0	0.03	1	11/27/17 16:58	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 16:58	11/21/17	
Vanadium	6010C	0.010 J	mg/L	0.010	0.0008	1	11/27/17 16:58	11/21/17	
Zinc	6010C	0.404	mg/L	0.0040	0.0200	1	11/27/17 16:58	11/21/17	

Analytical Report

Client: Teck American Incorporated

Service Request: K1711288 **Date Collected:** 10/12/17 14:00 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00002

Sample Matrix:

Soil

Basis: NA

Date Received: 10/14/17 09:30

Sample Name: IC-401-2D-101217 Lab Code: K1711288-011

SPLP Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed I	Oate Extracted	Q
Aluminum	6010C	16.8	mg/L	0.010	0.003	1	11/27/17 17:01	11/21/17	
Antimony	6010C	0.038	mg/L	0.020	0.006	1	11/27/17 17:01	11/21/17	
Arsenic	6010C	0.122	mg/L	0.010	0.004	1	11/27/17 17:01	11/21/17	
Barium	6010C	0.15 J	mg/L	0.20	0.10	1	11/27/17 17:01	11/21/17	
Beryllium	6010C	ND U	mg/L	0.010	0.0002	1	11/27/17 17:01	11/21/17	
Cadmium	6010C	0.006 J	mg/L	0.010	0.0002	1	11/27/17 17:01	11/21/17	
Calcium	6010C	3.7	mg/L	2.0	0.008	1	11/27/17 17:01	11/21/17	
Chromium	6010C	0.004 J	mg/L	0.010	0.002	1	11/27/17 17:01	11/21/17	
Cobalt	6010C	0.002 J	mg/L	0.010	0.0005	1	11/27/17 17:01	11/21/17	
Copper	6010C	0.025	mg/L	0.010	0.002	1	11/27/17 17:01	11/21/17	
Iron	6010C	8.08	mg/L	0.020	0.006	1	11/27/17 17:01	11/21/17	
Lead	6010C	0.370	mg/L	0.010	0.003	1	11/27/17 17:01	11/21/17	
Magnesium	6010C	1.06	mg/L	0.50	0.002	1	11/27/17 17:01	11/21/17	
Manganese	6010C	0.549	mg/L	0.010	0.0005	1	11/27/17 17:01	11/21/17	
Nickel	6010C	0.004 J	mg/L	0.010	0.0007	1	11/27/17 17:01	11/21/17	
Potassium	6010C	4.14	mg/L	0.20	0.04	1	11/27/17 17:01	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 17:01	11/21/17	
Silver	6010C	0.001 J	mg/L	0.020	0.0008	1	11/27/17 17:01	11/21/17	
Sodium	6010C	1.8 J	mg/L	2.0	0.03	1	11/27/17 17:01	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 17:01	11/21/17	
Vanadium	6010C	0.011	mg/L	0.010	0.0008	1	11/27/17 17:01	11/21/17	
Zinc	6010C	0.448	mg/L	0.0040	0.0200	1	11/27/17 17:01	11/21/17	

Analytical Report

Client: Teck American Incorporated

Service Request: K1711288 **Date Collected:** 10/17/17 08:40 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00002

Sample Matrix: Soil **Date Received:** 10/18/17 09:30

Sample Name: IC-258-3A-101717 Basis: NA

Lab Code: K1711288-012

SPLP Metals

A I4 - NI	Analysis	D14	TT *4	MDI	MDI	Da	D-4- Al	D-4- E-44-1	0
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed		Q
Aluminum	6010C	22.0	mg/L	0.010	0.003	1	11/27/17 17:03	11/21/17	
Antimony	6010C	0.014 J	mg/L	0.020	0.006	1	11/27/17 17:03	11/21/17	
Arsenic	6010C	0.032	mg/L	0.010	0.004	1	11/27/17 17:03	11/21/17	
Barium	6010C	0.20 J	mg/L	0.20	0.10	1	11/27/17 17:03	11/21/17	
Beryllium	6010C	0.0004 J	mg/L	0.010	0.0002	1	11/27/17 17:03	11/21/17	
Cadmium	6010C	0.002 J	mg/L	0.010	0.0002	1	11/27/17 17:03	11/21/17	
Calcium	6010C	4.3	mg/L	2.0	0.008	1	11/27/17 17:03	11/21/17	
Chromium	6010C	0.003 J	mg/L	0.010	0.002	1	11/27/17 17:03	11/21/17	
Cobalt	6010C	0.003 J	mg/L	0.010	0.0005	1	11/27/17 17:03	11/21/17	
Copper	6010C	0.015	mg/L	0.010	0.002	1	11/27/17 17:03	11/21/17	
Iron	6010C	9.10	mg/L	0.020	0.006	1	11/27/17 17:03	11/21/17	
Lead	6010C	0.149	mg/L	0.010	0.003	1	11/27/17 17:03	11/21/17	
Magnesium	6010C	1.08	mg/L	0.50	0.002	1	11/27/17 17:03	11/21/17	
Manganese	6010C	0.607	mg/L	0.010	0.0005	1	11/27/17 17:03	11/21/17	
Nickel	6010C	0.003 J	mg/L	0.010	0.0007	1	11/27/17 17:03	11/21/17	
Potassium	6010C	1.86	mg/L	0.20	0.04	1	11/27/17 17:03	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 17:03	11/21/17	
Silver	6010C	0.0009 J	mg/L	0.020	0.0008	1	11/27/17 17:03	11/21/17	
Sodium	6010C	1.7 J	mg/L	2.0	0.03	1	11/27/17 17:03	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 17:03	11/21/17	
Vanadium	6010C	0.010	mg/L	0.010	0.0008	1	11/27/17 17:03	11/21/17	
Zinc	6010C	0.233	mg/L	0.0040	0.0200	1	11/27/17 17:03	11/21/17	

Analytical Report

Date Received: 10/18/17 09:30

Client: Teck American Incorporated

Service Request: K1711288 **Date Collected:** 10/17/17 09:15 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00002

Sample Matrix:

Soil

Sample Name: Basis: NA IC-258-3B-101717

Lab Code: K1711288-013

SPLP Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	6010C	17.6	mg/L	0.010	0.003	1	11/27/17 17:14	11/21/17	
Antimony	6010C	0.015 J	mg/L	0.020	0.006	1	11/27/17 17:14	11/21/17	
Arsenic	6010C	0.048	mg/L	0.010	0.004	1	11/27/17 17:14	11/21/17	
Barium	6010C	0.18 J	mg/L	0.20	0.10	1	11/27/17 17:14	11/21/17	
Beryllium	6010C	0.0002 J	mg/L	0.010	0.0002	1	11/27/17 17:14	11/21/17	
Cadmium	6010C	0.003 J	mg/L	0.010	0.0002	1	11/27/17 17:14	11/21/17	
Calcium	6010C	3.9	mg/L	2.0	0.008	1	11/27/17 17:14	11/21/17	
Chromium	6010C	0.003 J	mg/L	0.010	0.002	1	11/27/17 17:14	11/21/17	
Cobalt	6010C	0.003 J	mg/L	0.010	0.0005	1	11/27/17 17:14	11/21/17	
Copper	6010C	0.016	mg/L	0.010	0.002	1	11/27/17 17:14	11/21/17	
Iron	6010C	7.96	mg/L	0.020	0.006	1	11/27/17 17:14	11/21/17	
Lead	6010C	0.194	mg/L	0.010	0.003	1	11/27/17 17:14	11/21/17	
Magnesium	6010C	1.10	mg/L	0.50	0.002	1	11/27/17 17:14	11/21/17	
Manganese	6010C	0.587	mg/L	0.010	0.0005	1	11/27/17 17:14	11/21/17	
Nickel	6010C	0.003 J	mg/L	0.010	0.0007	1	11/27/17 17:14	11/21/17	
Potassium	6010C	2.02	mg/L	0.20	0.04	1	11/27/17 17:14	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 17:14	11/21/17	
Silver	6010C	ND U	mg/L	0.020	0.0008	1	11/27/17 17:14	11/21/17	
Sodium	6010C	1.7 J	mg/L	2.0	0.03	1	11/27/17 17:14	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 17:14	11/21/17	
Vanadium	6010C	0.009 J	mg/L	0.010	0.0008	1	11/27/17 17:14	11/21/17	
Zinc	6010C	0.292	mg/L	0.0040	0.0200	1	11/27/17 17:14	11/21/17	

Analytical Report

Client: Teck American Incorporated

Service Request: K1711288 **Date Collected:** 10/17/17 09:50 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00002

Sample Matrix:

Sample Name:

Soil

Basis: NA IC-258-3C-101717

Date Received: 10/18/17 09:30

Lab Code: K1711288-014

SPLP Metals

	Analysis	.	T T 1.	1.607	1.55	5 .0		D . D	
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed		Q
Aluminum	6010C	14.1	mg/L	0.010	0.003	1	11/27/17 17:16	11/21/17	
Antimony	6010C	0.018 J	mg/L	0.020	0.006	1	11/27/17 17:16	11/21/17	
Arsenic	6010C	0.041	mg/L	0.010	0.004	1	11/27/17 17:16	11/21/17	
Barium	6010C	0.19 J	mg/L	0.20	0.10	1	11/27/17 17:16	11/21/17	
Beryllium	6010C	ND U	mg/L	0.010	0.0002	1	11/27/17 17:16	11/21/17	
Cadmium	6010C	0.004 J	mg/L	0.010	0.0002	1	11/27/17 17:16	11/21/17	
Calcium	6010C	4.2	mg/L	2.0	0.008	1	11/27/17 17:16	11/21/17	
Chromium	6010C	0.003 J	mg/L	0.010	0.002	1	11/27/17 17:16	11/21/17	
Cobalt	6010C	0.002 J	mg/L	0.010	0.0005	1	11/27/17 17:16	11/21/17	
Copper	6010C	0.016	mg/L	0.010	0.002	1	11/27/17 17:16	11/21/17	
Iron	6010C	6.36	mg/L	0.020	0.006	1	11/27/17 17:16	11/21/17	
Lead	6010C	0.224	mg/L	0.010	0.003	1	11/27/17 17:16	11/21/17	
Magnesium	6010C	1.02	mg/L	0.50	0.002	1	11/27/17 17:16	11/21/17	
Manganese	6010C	0.442	mg/L	0.010	0.0005	1	11/27/17 17:16	11/21/17	
Nickel	6010C	0.002 J	mg/L	0.010	0.0007	1	11/27/17 17:16	11/21/17	
Potassium	6010C	2.54	mg/L	0.20	0.04	1	11/27/17 17:16	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 17:16	11/21/17	
Silver	6010C	0.0009 J	mg/L	0.020	0.0008	1	11/27/17 17:16	11/21/17	
Sodium	6010C	2.0 J	mg/L	2.0	0.03	1	11/27/17 17:16	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 17:16	11/21/17	
Vanadium	6010C	0.007 J	mg/L	0.010	0.0008	1	11/27/17 17:16	11/21/17	
Zinc	6010C	0.292	mg/L	0.0040	0.0200	1	11/27/17 17:16	11/21/17	

Analytical Report

Client: Teck American Incorporated

Service Request: K1711288 **Date Collected:** 10/17/17 10:20 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00002

Sample Matrix: Soil **Date Received:** 10/18/17 09:30

Sample Name: Basis: NA IC-258-3D-101717

Lab Code: K1711288-015

SPLP Metals

A a laud a Nilana a	Analysis	D14	TT 24	MDI	MDI	Da	D-4- AlI	D-4- E-44- J	0
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	•	Date Extracted	Q
Aluminum	6010C	13.4	mg/L	0.010	0.003	1	11/27/17 17:18	11/21/17	
Antimony	6010C	0.017 J	mg/L	0.020	0.006	I	11/27/17 17:18	11/21/17	
Arsenic	6010C	0.058	mg/L	0.010	0.004	1	11/27/17 17:18	11/21/17	
Barium	6010C	0.15 J	mg/L	0.20	0.10	1	11/27/17 17:18	11/21/17	
Beryllium	6010C	ND U	mg/L	0.010	0.0002	1	11/27/17 17:18	11/21/17	
Cadmium	6010C	0.003 J	mg/L	0.010	0.0002	1	11/27/17 17:18	11/21/17	
Calcium	6010C	4.1	mg/L	2.0	0.008	1	11/27/17 17:18	11/21/17	
Chromium	6010C	0.003 J	mg/L	0.010	0.002	1	11/27/17 17:18	11/21/17	
Cobalt	6010C	0.002 J	mg/L	0.010	0.0005	1	11/27/17 17:18	11/21/17	
Copper	6010C	0.016	mg/L	0.010	0.002	1	11/27/17 17:18	11/21/17	
Iron	6010C	6.66	mg/L	0.020	0.006	1	11/27/17 17:18	11/21/17	
Lead	6010C	0.208	mg/L	0.010	0.003	1	11/27/17 17:18	11/21/17	
Magnesium	6010C	1.04	mg/L	0.50	0.002	1	11/27/17 17:18	11/21/17	
Manganese	6010C	0.497	mg/L	0.010	0.0005	1	11/27/17 17:18	11/21/17	
Nickel	6010C	0.002 J	mg/L	0.010	0.0007	1	11/27/17 17:18	11/21/17	
Potassium	6010C	1.94	mg/L	0.20	0.04	1	11/27/17 17:18	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 17:18	11/21/17	
Silver	6010C	ND U	mg/L	0.020	0.0008	1	11/27/17 17:18	11/21/17	
Sodium	6010C	1.7 J	mg/L	2.0	0.03	1	11/27/17 17:18	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 17:18	11/21/17	
Vanadium	6010C	0.008 J	mg/L	0.010	0.0008	1	11/27/17 17:18	11/21/17	
Zinc	6010C	0.276	mg/L	0.0040	0.0200	1	11/27/17 17:18	11/21/17	

Analytical Report

Client: Teck American Incorporated

Service Request: K1711288 **Date Collected:** 10/16/17 09:15 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00002

Sample Matrix:

Sample Name:

Soil

IC-441-1A-101617 Basis: NA

Date Received: 10/18/17 09:30

Lab Code: K1711288-016

SPLP Metals

	Analysis	.	-	1.607	1.55	5. 11		.	
Analyte Name	Method	Result	Units	MRL	MDL	Dil.		Date Extracted	Q
Aluminum	6010C	18.3	mg/L	0.010	0.003	1	11/27/17 17:21	11/21/17	
Antimony	6010C	0.008 J	mg/L	0.020	0.006	1	11/27/17 17:21	11/21/17	
Arsenic	6010C	0.033	mg/L	0.010	0.004	1	11/27/17 17:21	11/21/17	
Barium	6010C	0.28	mg/L	0.20	0.10	1	11/27/17 17:21	11/21/17	
Beryllium	6010C	0.0004 J	mg/L	0.010	0.0002	1	11/27/17 17:21	11/21/17	
Cadmium	6010C	0.004 J	mg/L	0.010	0.0002	1	11/27/17 17:21	11/21/17	
Calcium	6010C	7.5	mg/L	2.0	0.008	1	11/27/17 17:21	11/21/17	
Chromium	6010C	0.009 J	mg/L	0.010	0.002	1	11/27/17 17:21	11/21/17	
Cobalt	6010C	0.006 J	mg/L	0.010	0.0005	1	11/27/17 17:21	11/21/17	
Copper	6010C	0.024	mg/L	0.010	0.002	1	11/27/17 17:21	11/21/17	
Iron	6010C	11.5	mg/L	0.020	0.006	1	11/27/17 17:21	11/21/17	
Lead	6010C	0.245	mg/L	0.010	0.003	1	11/27/17 17:21	11/21/17	
Magnesium	6010C	2.48	mg/L	0.50	0.002	1	11/27/17 17:21	11/21/17	
Manganese	6010C	0.856	mg/L	0.010	0.0005	1	11/27/17 17:21	11/21/17	
Nickel	6010C	0.011	mg/L	0.010	0.0007	1	11/27/17 17:21	11/21/17	
Potassium	6010C	6.25	mg/L	0.20	0.04	1	11/27/17 17:21	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 17:21	11/21/17	
Silver	6010C	0.001 J	mg/L	0.020	0.0008	1	11/27/17 17:21	11/21/17	
Sodium	6010C	1.8 J	mg/L	2.0	0.03	1	11/27/17 17:21	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 17:21	11/21/17	
Vanadium	6010C	0.017	mg/L	0.010	0.0008	1	11/27/17 17:21	11/21/17	
Zinc	6010C	0.329	mg/L	0.0040	0.0200	1	11/27/17 17:21	11/21/17	

Analytical Report

Client: Teck American Incorporated

Service Request: K1711288 **Date Collected:** 10/16/17 10:15 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00002

Sample Matrix:

Soil

Basis: NA

Date Received: 10/18/17 09:30

Sample Name: Lab Code:

K1711288-017

IC-441-1B-101617

SPLP Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	Oate Extracted	Q
Aluminum	6010C	13.2	mg/L	0.010	0.003	1	11/27/17 17:23	11/21/17	
Antimony	6010C	0.020 J	mg/L	0.020	0.006	1	11/27/17 17:23	11/21/17	
Arsenic	6010C	0.050	mg/L	0.010	0.004	1	11/27/17 17:23	11/21/17	
Barium	6010C	0.22	mg/L	0.20	0.10	1	11/27/17 17:23	11/21/17	
Beryllium	6010C	0.0002 J	mg/L	0.010	0.0002	1	11/27/17 17:23	11/21/17	
Cadmium	6010C	0.006 J	mg/L	0.010	0.0002	1	11/27/17 17:23	11/21/17	
Calcium	6010C	7.3	mg/L	2.0	0.008	1	11/27/17 17:23	11/21/17	
Chromium	6010C	0.006 J	mg/L	0.010	0.002	1	11/27/17 17:23	11/21/17	
Cobalt	6010C	0.004 J	mg/L	0.010	0.0005	1	11/27/17 17:23	11/21/17	
Copper	6010C	0.029	mg/L	0.010	0.002	1	11/27/17 17:23	11/21/17	
Iron	6010C	8.02	mg/L	0.020	0.006	1	11/27/17 17:23	11/21/17	
Lead	6010C	0.348	mg/L	0.010	0.003	1	11/27/17 17:23	11/21/17	
Magnesium	6010C	1.67	mg/L	0.50	0.002	1	11/27/17 17:23	11/21/17	
Manganese	6010C	0.686	mg/L	0.010	0.0005	1	11/27/17 17:23	11/21/17	
Nickel	6010C	0.006 J	mg/L	0.010	0.0007	1	11/27/17 17:23	11/21/17	
Potassium	6010C	4.96	mg/L	0.20	0.04	1	11/27/17 17:23	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 17:23	11/21/17	
Silver	6010C	0.002 J	mg/L	0.020	0.0008	1	11/27/17 17:23	11/21/17	
Sodium	6010C	1.9 J	mg/L	2.0	0.03	1	11/27/17 17:23	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 17:23	11/21/17	
Vanadium	6010C	0.012	mg/L	0.010	0.0008	1	11/27/17 17:23	11/21/17	
Zinc	6010C	0.511	mg/L	0.0040	0.0200	1	11/27/17 17:23	11/21/17	

Analytical Report

Client: Teck American Incorporated

Service Request: K1711288 **Date Collected:** 10/16/17 11:25 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00002

Sample Matrix: Soil **Date Received:** 10/18/17 09:30

Sample Name: IC-441-1C-101617 Basis: NA

Lab Code: K1711288-018

SPLP Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	ate Extracted	Q
Aluminum	6010C	13.9	mg/L	0.010	0.003	1	11/27/17 17:26	11/21/17	
Antimony	6010C	0.014 J	mg/L	0.020	0.006	1	11/27/17 17:26	11/21/17	
Arsenic	6010C	0.044	mg/L	0.010	0.004	1	11/27/17 17:26	11/21/17	
Barium	6010C	0.23	mg/L	0.20	0.10	1	11/27/17 17:26	11/21/17	
Beryllium	6010C	0.0003 J	mg/L	0.010	0.0002	1	11/27/17 17:26	11/21/17	
Cadmium	6010C	0.007 J	mg/L	0.010	0.0002	1	11/27/17 17:26	11/21/17	
Calcium	6010C	9.2	mg/L	2.0	0.008	1	11/27/17 17:26	11/21/17	
Chromium	6010C	0.005 J	mg/L	0.010	0.002	1	11/27/17 17:26	11/21/17	
Cobalt	6010C	0.004 J	mg/L	0.010	0.0005	1	11/27/17 17:26	11/21/17	
Copper	6010C	0.025	mg/L	0.010	0.002	1	11/27/17 17:26	11/21/17	
Iron	6010C	8.20	mg/L	0.020	0.006	1	11/27/17 17:26	11/21/17	
Lead	6010C	0.382	mg/L	0.010	0.003	1	11/27/17 17:26	11/21/17	
Magnesium	6010C	2.03	mg/L	0.50	0.002	1	11/27/17 17:26	11/21/17	
Manganese	6010C	0.583	mg/L	0.010	0.0005	1	11/27/17 17:26	11/21/17	
Nickel	6010C	0.007 J	mg/L	0.010	0.0007	1	11/27/17 17:26	11/21/17	
Potassium	6010C	7.18	mg/L	0.20	0.04	1	11/27/17 17:26	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 17:26	11/21/17	
Silver	6010C	0.0009 J	mg/L	0.020	0.0008	1	11/27/17 17:26	11/21/17	
Sodium	6010C	1.8 J	mg/L	2.0	0.03	1	11/27/17 17:26	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 17:26	11/21/17	
Vanadium	6010C	0.012	mg/L	0.010	0.0008	1	11/27/17 17:26	11/21/17	
Zinc	6010C	0.583	mg/L	0.0040	0.0200	1	11/27/17 17:26	11/21/17	

Analytical Report

Client: Teck American Incorporated

Service Request: K1711288 **Date Collected:** 10/16/17 12:50 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00002

Sample Matrix: Soil **Date Received:** 10/18/17 09:30

Sample Name: IC-441-1D-101617 Basis: NA

Lab Code: K1711288-019

SPLP Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	6010C	10.7	mg/L	0.010	0.003	1	11/27/17 17:28	11/21/17	
Antimony	6010C	0.011 J	mg/L	0.020	0.006	1	11/27/17 17:28	11/21/17	
Arsenic	6010C	0.035	mg/L	0.010	0.004	1	11/27/17 17:28	11/21/17	
Barium	6010C	0.20 J	mg/L	0.20	0.10	1	11/27/17 17:28	11/21/17	
Beryllium	6010C	ND U	mg/L	0.010	0.0002	1	11/27/17 17:28	11/21/17	
Cadmium	6010C	0.004 J	mg/L	0.010	0.0002	1	11/27/17 17:28	11/21/17	
Calcium	6010C	6.6	mg/L	2.0	0.008	1	11/27/17 17:28	11/21/17	
Chromium	6010C	0.004 J	mg/L	0.010	0.002	1	11/27/17 17:28	11/21/17	
Cobalt	6010C	0.003 J	mg/L	0.010	0.0005	1	11/27/17 17:28	11/21/17	
Copper	6010C	0.021	mg/L	0.010	0.002	1	11/27/17 17:28	11/21/17	
Iron	6010C	6.36	mg/L	0.020	0.006	1	11/27/17 17:28	11/21/17	
Lead	6010C	0.235	mg/L	0.010	0.003	1	11/27/17 17:28	11/21/17	
Magnesium	6010C	1.54	mg/L	0.50	0.002	1	11/27/17 17:28	11/21/17	
Manganese	6010C	0.471	mg/L	0.010	0.0005	1	11/27/17 17:28	11/21/17	
Nickel	6010C	0.004 J	mg/L	0.010	0.0007	1	11/27/17 17:28	11/21/17	
Potassium	6010C	5.69	mg/L	0.20	0.04	1	11/27/17 17:28	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 17:28	11/21/17	
Silver	6010C	0.001 J	mg/L	0.020	0.0008	1	11/27/17 17:28	11/21/17	
Sodium	6010C	1.7 J	mg/L	2.0	0.03	1	11/27/17 17:28	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 17:28	11/21/17	
Vanadium	6010C	0.009 J	mg/L	0.010	0.0008	1	11/27/17 17:28	11/21/17	
Zinc	6010C	0.314	mg/L	0.0040	0.0200	1	11/27/17 17:28	11/21/17	

Analytical Report

Client: Teck American Incorporated **Service Request:** K1711288

Project: August 2017 Sampling SAT Study/B0095010.0005.00002 Date Collected: NA

Sample Matrix: Soil Date Received: NA

Basis: NA

Method Blank **Sample Name:** Lab Code: KQ1717330-02

SPLP Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed I	Date Extracted	Q
Aluminum	6010C	0.065	mg/L	0.010	0.003	1	11/27/17 16:04	11/21/17	
Antimony	6010C	ND U	mg/L	0.020	0.006	1	11/27/17 16:04	11/21/17	
Arsenic	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 16:04	11/21/17	
Barium	6010C	ND U	mg/L	0.20	0.10	1	11/27/17 16:04	11/21/17	
Beryllium	6010C	ND U	mg/L	0.010	0.0002	1	11/27/17 16:04	11/21/17	
Cadmium	6010C	ND U	mg/L	0.010	0.0002	1	11/27/17 16:04	11/21/17	
Calcium	6010C	1.8 J	mg/L	2.0	0.008	1	11/27/17 16:04	11/21/17	
Chromium	6010C	ND U	mg/L	0.010	0.002	1	11/27/17 16:04	11/21/17	
Cobalt	6010C	ND U	mg/L	0.010	0.0005	1	11/27/17 16:04	11/21/17	
Copper	6010C	ND U	mg/L	0.010	0.002	1	11/27/17 16:04	11/21/17	
Iron	6010C	0.009 J	mg/L	0.020	0.006	1	11/27/17 16:04	11/21/17	
Lead	6010C	ND U	mg/L	0.010	0.003	1	11/27/17 16:04	11/21/17	
Magnesium	6010C	0.20 J	mg/L	0.50	0.002	1	11/27/17 16:04	11/21/17	
Manganese	6010C	ND U	mg/L	0.010	0.0005	1	11/27/17 16:04	11/21/17	
Nickel	6010C	ND U	mg/L	0.010	0.0007	1	11/27/17 16:04	11/21/17	
Potassium	6010C	0.08 J	mg/L	0.20	0.04	1	11/27/17 16:04	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 16:04	11/21/17	
Silver	6010C	ND U	mg/L	0.020	0.0008	1	11/27/17 16:04	11/21/17	
Sodium	6010C	1.2 J	mg/L	2.0	0.03	1	11/27/17 16:04	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 16:04	11/21/17	
Vanadium	6010C	ND U	mg/L	0.010	0.0008	1	11/27/17 16:04	11/21/17	
Zinc	6010C	ND U	mg/L	0.0040	0.0200	1	11/27/17 16:04	11/21/17	

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: Teck American Incorporated

August 2017 Sampling SAT Study/B0095010.0005.00002

Sample Matrix: Soil

Project

Service Request: K1711288

Date Collected: 10/10/17 **Date Received:** 10/12/17

Date Analyzed: 11/27/17

Replicate Sample Summary SPLP Metals

Duplicate

 Sample Name:
 IC-401-1A-101017
 Units: mg/L

 Lab Code:
 K1711288-001
 Basis: NA

					Duplicate			
					Sample			
	Analysis			Sample	KQ1717330-03			
Analyte Name	Method	MRL	MDL	Result	Result	Average	RPD	RPD Limit
Aluminum	6010C	0.010	0.003	20.0	20.1	20.1	<1	20
Antimony	6010C	0.020	0.006	0.045	0.044	0.045	2	20
Arsenic	6010C	0.010	0.004	0.101	0.105	0.103	4	20
Barium	6010C	0.20	0.10	0.17 J	0.18 J	0.18	6	20
Beryllium	6010C	0.010	0.0002	0.0002 J	0.0003 J	NC	NC	20
Cadmium	6010C	0.010	0.0002	0.004 J	0.004 J	0.004	<1	20
Calcium	6010C	2.0	0.008	3.4	3.4	3.4	<1	20
Chromium	6010C	0.010	0.002	0.004 J	0.004 J	0.004	<1	20
Cobalt	6010C	0.010	0.0005	0.003 J	0.003 J	0.003	<1	20
Copper	6010C	0.010	0.002	0.023	0.024	0.024	4	20
Iron	6010C	0.020	0.006	9.97	10.2	10.1	2	20
Lead	6010C	0.010	0.003	0.371	0.381	0.376	3	20
Magnesium	6010C	0.50	0.002	1.29	1.32	1.31	2	20
Manganese	6010C	0.010	0.0005	0.539	0.541	0.540	<1	20
Nickel	6010C	0.010	0.0007	0.005 J	0.005 J	0.005	<1	20
Potassium	6010C	0.20	0.04	2.25	2.27	2.26	<1	20
Selenium	6010C	0.020	0.004	ND U	ND U	ND	-	20
Silver	6010C	0.020	0.0008	0.004 J	0.001 J	0.003	120 #	20
Sodium	6010C	2.0	0.03	1.9 J	2.0 J	2.0	5	20
Thallium	6010C	0.010	0.004	ND U	ND U	ND	-	20
Vanadium	6010C	0.010	0.0008	0.013	0.013	0.013	<1	20
Zinc	6010C	0.0040	0.0200	0.380	0.391	0.386	3	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

QA/QC Report

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00002

Sample Matrix: Soil

Service Request: K1711288 **Date Collected: Date Received:**

10/10/17

Date Analyzed:

10/12/17 11/27/17

Date Extracted:

11/21/17

Matrix Spike Summary SPLP Metals

Sample Name: IC-401-1A-101017 Lab Code:

K1711288-001

Units: Basis:

mg/L NA

Analysis Method: 6010C **Prep Method:** EPA 3010A

> **Matrix Spike** KQ1717330-04

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Aluminum	20.0	20.5	2.00	25 #	75-125
Antimony	0.045	0.431	0.500	77	75-125
Arsenic	0.101	1.09	1.00	99	75-125
Barium	0.17 J	1.17	1.00	100	75-125
Beryllium	ND U	0.049	0.050	97	75-125
Cadmium	0.004 J	0.052	0.050	96	75-125
Calcium	3.4	13.2	10.0	98	75-125
Chromium	0.004 J	0.203	0.200	99	75-125
Cobalt	0.003 J	0.492	0.500	98	75-125
Copper	0.023	0.269	0.250	98	75-125
Iron	9.97	10.6	1.00	64 #	75-125
Lead	0.371	0.838	0.500	93	75-125
Magnesium	1.29	11.0	10.0	97	75-125
Manganese	0.539	1.01	0.500	95	75-125
Nickel	0.005 J	0.488	0.500	96	75-125
Potassium	2.25	12.2	10.0	99	75-125
Selenium	ND U	0.861	1.00	86	75-125
Silver	0.004 J	0.049	0.050	90	75-125
Sodium	1.9 J	11.9	10.0	99	75-125
Thallium	ND U	0.186	0.200	93	75-125
Vanadium	0.013	0.519	0.500	101	75-125
Zinc	0.380	0.856	0.500	95	75-125

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

QA/QC Report

Client: Teck American Incorporated

Service Request: K1711288 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00002 **Date Analyzed:** 11/27/17

Sample Matrix: Soil

Lab Control Sample Summary SPLP Metals

Units:mg/L Basis:NA

Lab Control Sample

KQ1717330-01

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Aluminum	6010C	5.41	5.00	108	80-120
Antimony	6010C	2.03	2.00	102	80-120
Arsenic	6010C	2.58	2.50	103	80-120
Barium	6010C	5.20	5.00	104	80-120
Beryllium	6010C	0.126	0.125	101	80-120
Cadmium	6010C	1.25	1.25	100	80-120
Calcium	6010C	14.9	12.5	119	80-120
Chromium	6010C	0.510	0.500	102	80-120
Cobalt	6010C	1.25	1.25	100	80-120
Copper	6010C	0.631	0.625	101	80-120
Iron	6010C	2.60	2.50	104	80-120
Lead	6010C	2.47	2.50	99	80-120
Magnesium	6010C	13.0	12.5	104	80-120
Manganese	6010C	1.25	1.25	100	80-120
Nickel	6010C	1.24	1.25	99	80-120
Potassium	6010C	13.1	12.5	105	80-120
Selenium	6010C	2.24	2.50	90	80-120
Silver	6010C	0.613	0.625	98	80-120
Sodium	6010C	14.2	12.5	114	80-120
Thallium	6010C	2.41	2.50	97	80-120
Vanadium	6010C	1.30	1.25	104	80-120
Zinc	6010C	1.28	1.25	102	80-120

December 1, 2017 HWA Project No. 2013-040-23 Task 500

Arcadis U.S., Inc. 1100 Olive Way, Suite 800 Seattle, Washington 98101

Attention: Ms. Rebecca Andresen, P.G.

Subject: Materials Laboratory Report

Hydraulic Conductivity and Unit Weight Testing

Teck American – UCR SATES

Client Project No. B0095010.0005.00002

Revision No. 1

Dear Ms. Andresen;

As requested, HWA GeoSciences Inc. (HWA) performed laboratory testing for the subject project. This report is Revision No. 1 which supersedes the original report dated November 28, 2017. Herein we present the results of our laboratory analyses, which are summarized on the attached Tables. The laboratory testing program was performed in general accordance with your instructions and appropriate ASTM Standards as outlined below.

SAMPLE INFORMATION: A total of 48 samples were delivered to our laboratory on October 18, 2017 by Arcadis personnel. The samples were contained in 2.8-inch diameter Shelby tubes and were designated with the sample number, sampling location, and the time of sampling. Each sample was classified for engineering purposes using visual-manual methods. The sample descriptions are included in the attached Tables.

PERMEABILITY OF GRANULAR SOILS (CONSTANT HEAD METHOD): The coefficient of permeability (also commonly referred to as hydraulic conductivity) of the samples was measured in general accordance with method ASTM D2434. The samples were left intact in their respective Shelby tubes and the tubes were cut to be flush with the top and bottom of the samples. After creating a water-tight seal between the sample tube and the permeameter equipment, each sample was saturated and testing was conducted using a flow gradient of about 0.3. The test results are summarized in Table 1.

Table 1 Summary of Constant Head Permeability Testing Results

Sample Number	Sample Description	Moisture Content (%)	Dry Density (Pcf)	Hydraulic Conductivity (cm/sec)	Hydraulic Conductivity (in/hour)
D-401-1A-100417-0-6	Brown, silty SAND with organics (SM)	16.2	69.9	6.9 x 10-3	9.8
D-401-1B-100417-0-6	Brown, silty SAND with organics (SM)	22.1	56.1	1.1 x 10 ⁻²	15.0
D-401-1C-100417-0-6	Dark brown, silty SAND with organics (SM)	17.9	85.6	4.2 x 10 ⁻³	5.9
D-401-1D-100417-0-6	Brown, silty SAND with organics (SM)	19.7	69.7	7.3 x 10 ⁻³	10.4
D-401-2A-100517-0-6	Brown, silty SAND with organics (SM)	16.5	59.9	1.3 x 10 ⁻²	18.6
D-401-2B-100517-0-6	Brown, silty SAND with organics (SM)	18.0	62.8	4.6 x 10 ⁻³	6.5
D-401-2C-100517-0-6	Brown, silty SAND with organics (SM)	8.1	79.4	3.1 x 10 ⁻³	4.4
D-401-2D-100517-0-6	Brown, silty SAND with organics (SM)	20.1	52.9	1.2 x 10 ⁻²	16.5
D-441-1A-100617-0-6	Brown, silty SAND with organics (SM)	27.0	34.7	9.4 x 10 ⁻²	132.9
D-441-1B-100617-0-6	Dark brown, silty SAND with organics (SM)	8.6	68.4	4.1 x 10 ⁻³	5.9
D-441-1C-100617-0-6	Dark brown, silty SAND with organics (SM)	16.5	68.1	1.3 x 10 ⁻³	1.9
D-441-1D-100617-0-6	Dark brown, silty SAND with organics (SM)	7.5	62.8	4.9 x 10 ⁻³	6.9
D-258-3A-100717-0-6	Dark brown, silty SAND with organics (SM)	21.5	51.6	1.4 x 10 ⁻²	20.2
D-258-3B-100717-0-6	Dark brown, silty SAND with organics (SM)	5.4	80.9	1.0 x 10 ⁻³	1.4
D-258-3C-100717-0-6	Dark brown, silty SAND with organics (SM)	9.4	71.4	4.7 x 10 ⁻³	6.6
D-258-3D-100717-0-6	Dark brown, silty SAND with organics (SM)	5.4	79.7	2.1 x 10 ⁻³	3.0

UNIT WEIGHT OF SOIL: The wet and dry density of soil for selected samples was measured in general accordance with ASTM D7263 Method B. Each sample was weighed and measurements were taken of sample lengths and diameters using calipers. The moisture content of each sample was then determined and used to calculate the dry density of the soil samples. The results are presented in Table 2.

Table 2 Summary of Unit Weight of Soil Testing Results

Sample Number	Sample Description	Moisture Content (%)	Wet Density (Pcf)	Dry Density (Pcf)
D-401-1A-100417-0-3	Brown, silty SAND with organics (SM)	8.3	37.0	34.1
D-401-1A-100417-6-9	Olive brown, silty SAND with organics (SM)	3.4	82.6	79.9
D-401-1B-100417-0-3	Brown, silty SAND with organics (SM)	11.6	29.3	26.3
D-401-1B-100417-6-9	Olive brown, silty SAND with organics (SM)	4.3	92.9	89.0
D-401-1C-100417-0-3	Brown, silty SAND with organics (SM)	8.9	70.1	64.4
D-401-1C-100417-6-9	Brown, silty SAND with organics (SM)	3.5	94.1	90.9
D-401-1D-100417-0-3	Brown, silty SAND with organics (SM)	4.3	63.1	60.5
D-401-1D-100417-6-9	Grayish brown, silty SAND with organics (SM)	4.3	92.6	88.9
D-401-2A-100517-0-3	Grayish brown, silty SAND with organics (SM)	5.2	63.7	60.5
D-401-2A-100517-6-9	Brown, silty SAND with organics (SM)	4.1	89.6	86.1
D-401-2B-100517-0-3	Grayish brown, silty SAND with organics (SM)	6.5	48.7	45.8
D-401-2B-100517-6-9	Brown, silty SAND with organics (SM)	4.2	94.5	90.7
D-401-2C-100517-0-3	Brown, silty SAND with organics (SM)	4.0	82.6	79.4
D-401-2C-100517-6-9	Brown, silty SAND with gravel and organics (SM)	3.7	101.3	97.6
D-401-2D-100517-0-3	Brown, silty SAND with organics (SM)	19.1	44.2	37.1
D-401-2D-100517-6-9	Brown, silty SAND with gravel and organics (SM)	8.0	87.2	80.8
D-441-1A-100617-0-3	Dark brown, silty SAND with organics (SM)	34.7	28.4	21.1
D-441-1A-100617-6-9	Dark brown, silty SAND with gravel and organics (SM)	6.5	81.8	76.8
D-441-1B-100617-0-3	Olive brown, silty SAND with organics (SM)	7.5	62.7	58.3
D-441-1B-100617-6-9	Olive brown, silty SAND with gravel and organics (SM)	4.2	84.9	81.5
D-441-1C-100617-0-3	Dark brown, silty SAND with organics (SM)	6.8	59.2	55.5
D-441-1C-100617-6-9	Olive brown, silty SAND with gravel and organics (SM)	6.1	81.6	76.9
D-441-1D-100617-0-3	Olive brown, silty SAND with organics (SM)	8.0	58.7	54.4
D-441-1D-100617-6-9	Olive brown, silty SAND with organics (SM)	6.7	70.6	66.2
D-258-3A-100717-0-3	Brown, silty SAND with organics (SM)	9.3	48.0	43.9
D-258-3A-100717-6-9	Olive brown, silty SAND with organics (SM)	4.6	84.2	80.5
D-258-3B-100717-0-3	Dark brown, silty SAND with organics (SM)	7.5	74.0	68.8
D-258-3B-100717-6-9	Olive brown, silty SAND with organics (SM)	3.8	88.4	85.1

Table 2 (Continued)

Sample Number	Sample Description	Moisture Content (%)	Wet Density (Pcf)	Dry Density (Pcf)
D-258-3C-100717-0-3	Brown, silty SAND with organics (SM)	6.1	50.3	47.4
D-258-3C-100717-6-9	Olive brown, silty SAND with organics (SM)	3.5	81.2	78.5
D-258-3D-100717-0-3	Dark brown, silty SAND with organics (SM)	8.4	60.2	55.5
D-258-3D-100717-6-9	Dark brown, silty SAND with organics (SM)	4.5	78.7	75.4



CLOSURE: Experience has shown that laboratory test values for aggregate and other natural materials vary with each representative sample. As such, HWA has no knowledge as to the extent and quantity of material the tested sample may represent. HWA also makes no warranty as to how representative either the sample tested or the test results obtained are to actual field conditions. It is a well-established fact that sampling methods present varying degrees of disturbance or variance that affect sample representativeness.

No copy should be made of this report except in its entirety.

We appreciate the opportunity to provide laboratory testing services on this project. Should you have any questions or comments, or if we may be of further service, please call.

Sincerely,

HWA GEOSCIENCES INC.

Daniel Walton

Materials Laboratory Supervisor

Steven E. Greene, L.G., L.E.G.

Vice President



January 31, 2018

Spokane, WA 99202

Teck American Incorporated

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Analytical Report for Service Request No: K1711288

RE: August 2017 Sampling SAT Study / B0095010.0005.00002

Dear Dave.

Dave Enos

Enclosed are the results of the sample(s) submitted to our laboratory October 18, 2017 For your reference, these analyses have been assigned our service request number **K1711288**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3376. You may also contact me via email at Mark.Harris@alsqlobal.com.

Respectfully submitted,

noe D. Oan

ALS Group USA, Corp. dba ALS Environmental

Mark Harris

Project Manager



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Table of Contents

Acronyms

Qualifiers

State Certifications, Accreditations, And Licenses

Case Narrative

Chain of Custody

Total Solids

General Chemistry

Metals

Acronyms

ASTM American Society for Testing and Materials

A2LA American Association for Laboratory Accreditation

CARB California Air Resources Board

CAS Number Chemical Abstract Service registry Number

CFC Chlorofluorocarbon
CFU Colony-Forming Unit

DEC Department of Environmental Conservation

DEQ Department of Environmental Quality

DHS Department of Health Services

DOE Department of Ecology
DOH Department of Health

EPA U. S. Environmental Protection Agency

ELAP Environmental Laboratory Accreditation Program

GC Gas Chromatography

GC/MS Gas Chromatography/Mass Spectrometry

LOD Limit of Detection
LOQ Limit of Quantitation

LUFT Leaking Underground Fuel Tank

M Modified

MCL Maximum Contaminant Level is the highest permissible concentration of a substance

allowed in drinking water as established by the USEPA.

MDL Method Detection Limit
MPN Most Probable Number
MRL Method Reporting Limit

NA Not Applicable
NC Not Calculated

NCASI National Council of the Paper Industry for Air and Stream Improvement

ND Not Detected

NIOSH National Institute for Occupational Safety and Health

PQL Practical Quantitation Limit

RCRA Resource Conservation and Recovery Act

SIM Selected Ion Monitoring

TPH Total Petroleum Hydrocarbons

tr Trace level is the concentration of an analyte that is less than the PQL but greater than or

equal to the MDL.

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
 DOD-QSM 4.2 definition: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.



Case Narrative

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com



Client: Teck American Incorporated Service Request: K1711288

Project: August 2017 Sampling SAT Study Date Received: 10/12/2017

Sample Matrix: Soil

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), Matrix/Duplicate Matrix Spike (MS/DMS), Laboratory Control Sample (LCS), and Laboratory/Duplicate Laboratory Control Sample (LCS/DLCS).

General Notes - Sample Preparation:

Sample aliquots for sulfide and Total Organic Carbon (TOC) were removed prior to starting the Incremental Sampling Method (ISM). The samples were then prepared using the ISM as prescribed in the Quality Assurance Project Plan (QAPP). SPLP Metals extractions were performed using 100g of air dried and sieved sample and were performed on the 2 mm fraction. A total solids determination was performed on the air dried material to allow reporting of analytical results on the oven dried basis (105 C).

Sample Receipt:

Nineteen soil samples were received for analysis at ALS Environmental on 10/12/2017. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Metals:

No significant anomalies were noted with this analysis.

General Chemistry:

Total Sulfide by PSEP:

Samples IC-401-1A-101017, IC-401-1B-101017, IC-401-1C-101117, IC-401-1C-101117-D, IC-401-1D-101117 and IC-401-2B-101117 were analyzed past holding time due to laboratory error. The analysis was performed as soon as possible after receipt by the laboratory. The data was flagged to indicate the holding time violation.

Sample IC-441-1B-101617 was received and initially analyzed within holding time, but was reanalyzed past holding time due to MB result being over the MRL. The data was flagged to indicate the holding time violation.

Approved by — M are O. Oax Date 12/01/2017

REVISED10:21 am, Jan 05, 2018



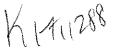
Chain of Custody

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

ALS Environmental-Kelso

1317 South 13th, Kelso, WA 98626

(360) 577-7222 FAX (360) 636-1068



												Analys	is Reque	sted:		
Project Name: Teck American -	UCR SAT	ES Projec	et Number: <u>B0095010.0005.00002</u>		22					ers	Ī	T			T	
Project Contact: <u>Kady Young</u> C	ompany: A	Arcadis			aine	<				ulvaney d Somm			735	Fis	Ë	
Company/Address: <u>189 North Ce</u>	dar Street	Phone: <u>30</u>	07-203-3510 or 307-949-0330		f Contain	USEPA 6010/USEPA 6010B		_		Bremner and Mulva 1982, Nelson and Soi 1982	4		NRMRL QMP L18735 Athena	Analytical List	Triplicate Analytical List	
City, State, Zip: Buffalo, WY 828	34 FAX: 3	307-684-59	61 /		er of	010		0.00	-S2D	and son	7090	422	δ		e An	
Sampler's Signature:	~ CV	45L			Number	PA (2510B	USEPA 300.0	SM 4500-S2D	nner, Ne	USEPA 9060A	ASTM D422	AR.	Duplicate	ica	
Sample I.D.	Date	Time	LAB ID	Matri	Z	USEP/ 6010B	SM	USE	SM	Bren 1982 1982	USE	ASI	NR. Ath	υmα	Ë	REMARKS
IC-401-1A-101017	10-10-17	1058		s	12	X	IX	X	X	X	X	X	X			Sample weight = 10,457 =
IC-401-1B-101017			2	S	12	X	X	Х	X	X	X	X	X			Sample weight = 13:511 a
				s												
				s												COMPOSITE
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24 hr 48 hr 5	day		I. Routine Report: Results, Method B	lank,	Hold	Remain	der									
X Standard (10 days)			Surrogate, as required													
Provide FAX Preliminary Re	sults		II. Report Dup., MS, MSD as require		1	-					_					y (SM 2510B), Chloride/Sulfate (USEPA 300.
Requested Report Date:			III. Data Validation Report (includes			Sulfide (S	M 4500-52	D), Total (Carbon an	nd Nitrogen	(Gremne	r and Mulv	aney/Nelso	n and Som	mers), Tot	tal Organic Carbon (USEPA 9060A)
Invoice Information			raw data)		L											
P.O. # <u>UCR-ALS-D34-17</u> Bill to: Cristy Kessel - Teck Americ	an		IV. CLP Deliverable Report V. EDD		Ттірис	ate Analys	sis List - T	otal TAL N	/letais/SPI	LP TAL M	etals (USE	PA 6010),	Bioaccessit	ole Arsenic	and Lead	at pH 1.5 and pH 2.5 (USEPA 6010B)
501 N Riverpoint Blvd, Suite 300 Spoke			, V.EDD													
RELINQUISHED BY:	4	RECEIVE	D BY		RELI	INQUISI	HED BY	·				RECEI	ED BY:			
Signature: Hall		Signature:	DIM.		Signa	ture:						Signatur	e:			
Printed Name: Rycan W Brau	chla	Printed Na	me KMORROW	_												
Firm: Areads		Firm:	US,		l											
Date/Time: 10-11-17 100	20	Date/Time:	10/12/17 1936	7	Date/							Date/Tin				

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Project Name: Teck American	- UCR SAT	ES Project	t Number: <u>B0095010.0005.00002</u>		2	222.33				S.					1 .	
Project Contact: Kady Young C	Company: <u>A</u>	readis			Containers	P.A				Mulvaney and Somme			L18735	Duplicate Analytical List	Triplicate Analytical List	
Company/Address: 189 North Co	edar Street	Phone: <u>30</u>	7-203-3510 or 307-949-0330		ت رق	USEPA 6010/USEPA 6010B				ner and Muh Nelson and S	A		P L1	alytic	a jyti	
City, State, Zip: Buffalo, WY 828	834 FAX: 3	97-684-596	1 1		er 0	9010	8	300.0	SM 4500-S2D	lson	9060A	9422	QMP	e An	E AI	
Sampler's Signature:	~ <i>(</i>	(5			Number	PA B	SM 2510B	PA.	4500	nner, Ne	USEPA	ASTM D422	NRMRL Athena	licat	lica	
Sample I.D.	Date	Time	LAB ID	Matrix	Z	USEP. 6010B	SM	USEPA	SM	Bremi 1982, 1982	USE	AST	NR	Dup	Trip	REMARKS
IC-401-1C-101117	10-11-17	1023	3	s	2	X	X	X	X	X	X	X	X			Sample weight: 11,403a
IC-401-1C-101117-D	10-11-17	1235	4	S	2									X		Samale weight: 12,555a
IC-401-1D-101/17	10-11-17	1400	5	S	1	X	X	Х	X	X	X	X	又			Sample weight: 5,453a
IC-401-28-10117	10-11-17	1538	Ĺ,	s		X	λ	X	X	X	X	义	人			Sample weight: 7,639a
		_		s												
				s												Composite 2 bucket
				S												samples at the
				s												lab, prior to any
				S												analysis
				s												7
TURNAROUND REQUIREMENT	S		REPORT REQUIREMENTS		Com	nents/S	oecial In	struction	s:				<u> </u>			
24 hr 48 hr :	5 day		I. Routine Report: Results, Method Bla	nk,	Hold	Remain	der									
X Standard (10 days)			Surrogate, as required		i											
Provide FAX Preliminary Re	esults	X	II. Report Dup., MS, MSD as required		Duplica	ite Analys	is List - M	ehlich III I	xtractabl	e Lead and	Phosphor	ous (USEI	PA 6010), E	lectrical C	onđuctivity	(SM 2510B), Chloride/Sulfate (USEPA 300.
Requested Report Date:			III. Data Validation Report (includes		İ	Sulfide (S)	M 4500-52	D), Total (arbon an	d Nitrogen ((Gremner	and Mulv	aney/Nelso	n and Som	ners), Tota	al Organic Carbon (USEPA 9060A)
Invoice Information			raw data)													
P.O. # <u>UCR-ALS-D34-17</u>			IV. CLP Deliverable Report		Triplica	ate Analys	is List - To	tal TAL M	letals/SPL	.P TAL Me	tals (USE)	PA 6010),	Bioaccessib	ole Arseniç	and Lead	at pH 1.5 and pH 2.5 (USEPA 6010B)
Bill to: <u>Cristy Kessel - Teck Americ</u>		<u>X</u> _	V. EDD													
501 N Riverpoint Blvd, Suite 300 Spok	ane, WA 9920													<u>.</u>		
RELINQUISHED BY:		RECEIVE				-	HED BY					RECEIV	ÆD BY:			
Signature: Thyan W. Bell		Signature;	2011, 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	***	Signat	ure:						Signatur	ð:			
Printed Name: Ryan W Bra	wehla	Printed Nat	ne: KMSD //OKK	9	Printe	d Name:					l	Printed N	lame:			
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Date/Time: 10-12-17 []	00	Date/Time:	100 01/3/11	JOI	Date/T	ime: _					Į.	Date/Tin	ne:			

ALS Environ__ntal-Kelso

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(360) 577-7222 FAX (360) 636-1068

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Date 10-12-2017
PAGE 1 OF 1

									100			Analys	is Reque	ited	A-48-18	
Project Name: <u>Teck American</u> -	UCR SAT	ES Projec	Number: <u>B0095010.0005.00002</u>		S			Ī		ers				<u> </u>	T ts	
Project Contact: Kady Young C	ompany: A	rcadis			Container	₹				ane) omn			L18735			
Company/Address: 189 North Co	dar Street	Phone: <u>30</u>	7-203-3510 or 307-949-0330		3	USEPA 6010/USEPA 6010B		Ì		Mulvaney and Sommers			, L18	Analytical List	Analytical List	
City, State, Zip: Buffalo, WY 828	34 FAX: 3	07-684-596	1		r of	010		0.00	S2D	Bremner and Muly 1982, Nelson and S 1982	9060A	422	NRMRL QMP 1 Athena	Ana	An	
Sampler's Signature:	11		_		Number	PA 6	SM 2510B	USEPA 300.0	SM 4500-S2D	ner, Net	PA 9	ASTM D422	IRE II I	Duplicate	Friplicate	
Sample I.D.	Date	Time	LAB ID	Matrix	Ž	USEP, 6010B	SM.	USE	SM 4	Bren 1982 1982	USEPA	AST	NR.V Athe	Dup	直	REMARKS
IC1-401-2A-101217	10-12-17	0920	7	s	i.	X	X	X	X	X	X	X	X			Sample wight: 6.900a
IC2-401-2A-101217	10-12-17	1	S	S	1										X	Sample weight 6,870g
IC3-401-2A-101217	10-12-17			S	T										X	Sample weight: 7.213 g
IC-401-26-101217	10-12-17		10	s	1	X	X	X	λ	X	X	X	X			Sample weight: 7,683 a
IC-401-20-101217	10-12-17			S	1	X	X	X	X	X	X	Х	X			Sumple weight: 7, 2053
				S												
				s												Composite samples
				S												prior to analysis
				s												
				s												
FURNAROUND REQUIREMENTS	S		REPORT REQUIREMENTS		Comi	nents/S _]	pecial In	truction	ıs:							
24 hr 48 hr 5	5 day		I. Routine Report: Results, Method Blad	nk,	Hold	Remain	der									
X Standard (10 days)			Surrogate, as required													
Provide FAX Preliminary Re Requested Report Date:	esults		II. Report Dup., MS, MSD as required III. Data Validation Report (includes		' '	•					•					y (SM 2510B), Chloride/Sulfate (USEPA 300. al Organic Carbon (USEPA 9060A)
Invoice Information			raw data)			amine (a	VI 4300-32	D), Iocai c	AI DUE AL	u Muogen	(Gremner	490 141014	апсу/дево	ii anu Som	mc13), 100	organic Carpon (CD2171 200022)
P.O. # UCR-ALS-D34-17			IV. CLP Deliverable Report		Triplie:	ate Analys	is List - To	ital TAL N	Aetals/SPI	P TAL Me	tals (USE)	PA 6010),	Bioaccessib	le Arsenic	and Lead	at pH 1.5 and pH 2.5 (USEPA 6010B)
Bill to: <u>Cristy Kessel - Teck Americ</u>	an	Х	v. EDD		_	•					-					
501 N Riverpoint Blvd, Suite 300 Spok	ane, WA 992(
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Signature: Styan 4/55/			Kollelle Bourg	1	Signat	ture:]	Signatur	e:	···		
Printed Name: Ryan Brave 4	اد	Printed Nat	ne: Rochelle Benez		Printe	d Name:						Printed N	lame:			maximum and the desirence of the second seco
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Date 10-17-17
PAGE 1 OF 1
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Project Name: <u>Teck American</u> -	UCR SATI	ES Projec	Number: <u>B0095010.0005.00002</u>	ļ	2					ers							
Project Contact: Kady Young Co	ompany: <u>A</u>	rcadis		ĺ	Container	∢		İ		r and Mulvaney Ison and Sommers			735	I List	al List		
Company/Address: 189 North Ced	lar Street	Phone: <u>30</u>	7-203-3510 or 307-949-0330		Con	USEPA 6010/USEPA 5010B		l		fully ad Se			L.18735	Analytical	Analytical		
City, State, Zip: Buffalo, WY 8283	14 EAV. 20	07 CD4 E06	:1	ļ	J 0	8	ĺ	300.0	ຊ	Bremner and Mu 1982, Nelson and 1982	9060A	77	QMP]]	
A	11	101-004-350			ber	09	2510B	30	4500-S2D	er ai	6	ASTM D422	10		ate /		
Sampler's Signature:	(U)				Number	USEPA 6010B	251	USEPA	25	2, N	USEPA	I.W	NRMRL Athena	Duplicate	Triplicate		
Sample I.D.	Date	Time	LAB ID	Matrix	, Z.,	S 199	SM	S	SM	Bren 1982 1982	SO	SV	AG AG	n _Q		REMARKS	
IC-258-3A-101717	10-17-17	0840	12	s	ŧ	X	IX.	X	X	X	X	X	٨			Sample weight: 9,57	79
IC-258-3B-101717	10-17-17	0915	13	s		Χ	X	X	X	X	X	X	X			Sample weight: 8,28	
IC-258-3C-101717	10-17-17	0450	14	S	_	X	X	X	X	X	X	X	X			Sample weight: 5,46.	3,
IC258-3D-101717	10-17-17	1020	15	s		X	X	X	X	X	፞፞፞፞፞፞፞፞፞	X	X			Sample weight: 7.07	
	10-16-17	0915	16	s	ĺ	X	X	$\sqrt{}$	X	X	Х	X	X			Sample worth 1: 7/130	
I(-441-1B-101617	10-16-17	1015	17	S	į	X	V	X	X	X	X	X	X			Smalewight: 7.53	
And the state of t	10-16-17		18	S	1	Ϋ́	Ŷ	X	X	X	X	$\dot{\mathbf{x}}$	χ			Sample weight: 5,110	
	10-16-17		19	s	7	Ý	V	X	X	χ	X	X	X			Sunde weight: 5 77	₹.
		122		s						/						Ampre -gg/1 -, 17	
				s													
FURNAROUND REQUIREMENTS			REPORT REQUIREMENTS	<u> </u>	Comr	nents/S	pecial In	struction	1S:	L							
24 hr 48 hr 5			I. Routine Report: Results, Method Blan	1		Remain											
X Standard (10 days)	- 1		Surrogate, as required														
Provide FAX Preliminary Re	sults	x	II. Report Dup., MS, MSD as required	h	Duplica	ite Analys	is List - M	ehlich III	Extractabl	le Lead and	Phosphor	ous (USEI	PA 6010), E	lectrical Co	onductivity	(SM 2510B), Chloride/Sulfate (USE	PA 300.
Requested Report Date:			III. Data Validation Report (includes	1	1	Sulfide (\$	M 4500-52	D), Total (Carbon au	d Nitrogen	(Gremner	and Mulv	aney/Nelson	and Somi	mers), Toti	of Organic Carbon (USEPA 9060A)	1
Invoice Information			raw data)														1
P.O. # <u>UCR-ALS-D34-17</u>			IV. CLP Deliverable Report	12	riplie:	ate Analys	sis List - T	otal TAL N	detals/SPI	LP TAL Me	tals (USE)	PA 6010),	Bioaccessib	le Arsenic	and Lead	at pH 1.5 and pH 2.5 (USEPA 6010B) [
Bill to: <u>Cristy Kessel - Teck America</u>	ம [x	V. EDD	1													
501 N Riverpoint Blvd, Suite 300 Spoka	ne, WA 9926																
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Signature:		Signature:	MOKKO	s	Signat	ure:						Signatur	e:				
Printed Name: Ryan WBra	uchla	Printed Na	me: LIVIONKOL	F	rinte	d Name:		·	V			Printed N	lame:				ı
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Date/Time: 10-17-2017	1600	Date/Time:	10/18/17/0940	i i									ne:			and the second s	



Cooler Receipt and Preservation Form Teck America Service Request K17 Opened: 10/12/ Unloaded: Received: Samples were received via? **USPS** Fed Ex-**UPS** DHL **PDX** Hand Delivered Courier Samples were received in: (circle) Cooler Box Envelope Other NA Were custody seals on coolers? Υ NA If yes, how many and where? If present, were custody seals intact? Υ Υ If present, were they signed and dated? Ν Cooler/COC ID Tracking Number Corr. Thermometer Corrected. Raw Temp Blank Factor ID NA Filed Temp Blank Cooler Temp 360 0 Wet Ice Rubble Wrap Packing material: Inserts Baggies Gel Packs (rv Ice Were custody papers properly filled out (ink, signed, etc.)? N Were samples received in good condition (temperature, unbroken)? Indicate in the table below. NA N If applicable, tissue samples were received: Frozen Partially Thawed Thawed Were all sample labels complete (i.e analysis, preservation, etc.)? NA N Did all sample labels and tags agree with custody papers? Indicate major discrepancies in the table on page 2. NA Were appropriate bottles/containers and volumes received for the tests indicated? NA N 10. Were the pH-preserved bottles (see SMO GEN SOP) received at the appropriate pH? Indicate in the table below N 11. Were VOA vials received without headspace? Indicate in the table below. NÃ 12. Was C12/Res negative? N Sample ID on Bottle Identified by: Sample ID on COC **Bottle Count** Out of Head-Volume Reagent Lot Sample ID **Bottle Type** Temp space Broke added Number Initials Time Reagent Notes, Discrepancies, & Resolutions:

Page 7/25/16

of



7/25/16

ALS]	PC_M	H
Λ	(Cooler Rece	ipt and	l Pres	ervat	ion Form	,	1000		
ient Arcadis				Se	rvice	Request <i>K1</i>	7	1288		
eceived: $\frac{10/3/17}{2}$	pened:	10/13/	∐ Ву	Ł	<u>^</u>	Unloade	ed:(113/1By:	1/2	····
Samples were received via?	USPS (Fed Ex U	/PS	DHL	PL	X Cour	ier Hand	l Delivered		
Samples were received in: (circ	ole) (Co	oler Box	x E	Envelop	e	Other			NA.	
Were custody seals on coolers'	? N.	A (Y)	N	If yes	s, how	many and wl	here?/_	E+B		
If present, were custody seals i	ntact?	(\mathbf{Y})	N	If	preser	t, were they	signed and d	lated?	Y	N
Raw Corrected Raw Cooler Temp Cooler Temp Blank	Corrected Temp Blank	Corr. The	rmomet	er C	ooler/(OC ID		Tracking Numb		IA Filed
-0.20.04.2	4,9 t	0.2 =	351				8082	796103	41	
-0.9-0.6 2.3	3.3-	0,1	35.	}				11 0	330	
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-0.3-0.110.X	0.7 H	0.7	578	}			((10.7	262	
						<u></u>		122.011) ===	
Packing material: Inserts	and delinated by the state of t			eks (M	et Ice	Dry Ice	Sleeves _	Mger. I	260 B	
5. Were custody papers properly	•	•	•					N.A	The same of the sa	N
 Were samples received in good 								N/	ICY	N
n app 7. Were ail sample labeis comple		ie samples we sis, preservatio			Froze	r Parnau	y Thawed	Thawed N	\mathbf{v}	\rangle_{N}
8. Did all sample labels and tags	-	•			r disci	renancies in i	the table on) N
9. Were appropriate bottles/conf	•	• • •		•		-	ine rable on	ραge 2		, N
								· mariana		
				• •	-	pri <i>t inaica</i>	ue in ine iao		and the same	N
11. Were VOA vials received w	ithout headsp	sace? Indicate	e in the t	able be	low.			CN.		N
12. Was C12/Res negative?	· · · · · · · · · · · · · · · · · · ·	····			,		··	(N	A Y	N
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Sample ID	Bottle	Type Tem	p space	Broke	pri	Reagent	added	Number	Initials	Time
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Notes, Discrepancies, & Res	solutions:									
										
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Page 14 of 61

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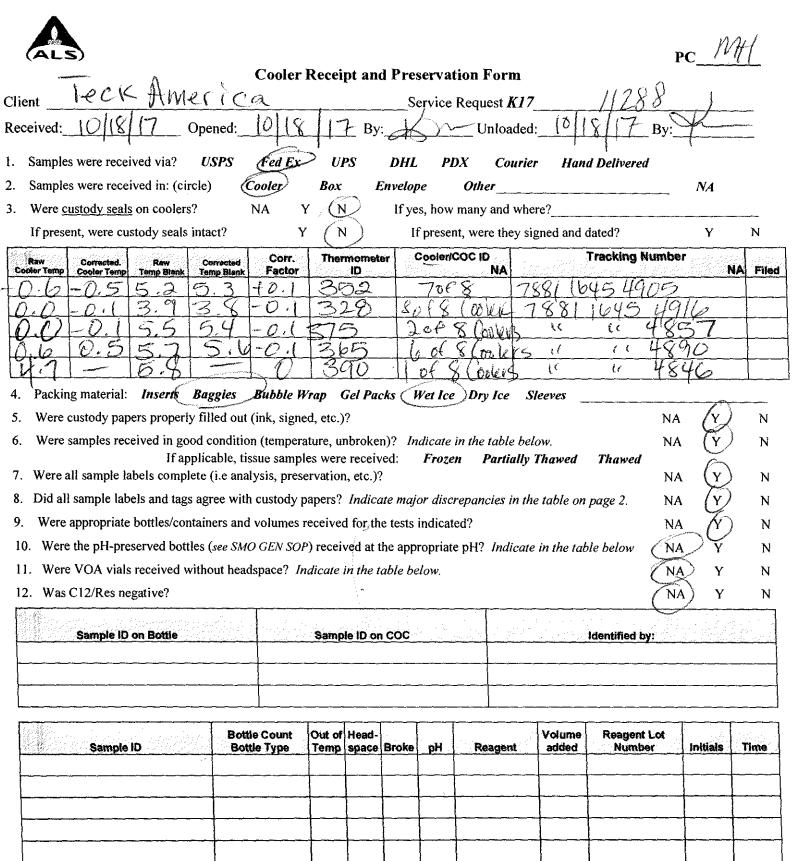
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of

Samples were received via? USPS Fed Ex UPS DHL PDX Courier Hand Delivered Samples were received in: (circle) Cooler Box Envelope Other NA Were custody seals on coolers? NA Y N If yes, how many and where? If present, were custody seals intact? Y N If present, were they signed and dated? Y N Raw Corrected Temp Blank Factor ID NA D.2 D.3 5.5 5.4 + D.1 3.46 809.2 DT.15 43.29 D.8 40.2 351 7880 7540 9433 D.1 - D.3 6.8 6.5 - D.2 38.7 7880 7540 9433 D.1 - D.2 6.6 6.5 - D.1 3.38 7880 7540 9442 Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves Were custody papers properly filled out (ink, signed, etc.)?		Α.			Cooler I	Recei	pt and	Pres	servat	tion F	orm					
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If prese	ent, were cu	ustody seals	intact?	Y	· (1	\bigcirc	H	prese	nt, wer	e they s	igned and	dated?	Y	N
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Total Solids

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00002

Sample Matrix: Soil

Analysis Method: 160.3 Modified

Prep Method: None

Service Request: K1711288

Date Collected: 10/10/17 - 10/17/17

Date Received: 10/12/17 - 10/18/17

Units: Percent

Basis: As Received

Solids, Total

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
IC-401-1A-101017	K1711288-001	95.6	-	-	1	11/03/17 14:28	
IC-401-1B-101017	K1711288-002	94.5	-	-	1	11/03/17 14:28	
IC-401-1C-101117	K1711288-003	94.5	-	-	1	11/03/17 14:28	
IC-401-1C-101117-D	K1711288-004	94.7	-	-	1	11/03/17 14:28	
IC-401-1D-101117	K1711288-005	92.5	-	-	1	11/03/17 14:28	
IC-401-2B-101117	K1711288-006	93.4	-	-	1	11/03/17 14:28	
IC1-401-2A-101217	K1711288-007	93.6	-	-	1	11/03/17 14:28	
IC2-401-2A-101217	K1711288-008	94.1	-	-	1	11/03/17 14:28	
IC3-401-2A-101217	K1711288-009	93.7	-	-	1	11/03/17 14:28	
IC-401-2C-101217	K1711288-010	94.6	-	-	1	11/03/17 14:28	
IC-401-2D-101217	K1711288-011	90.5	-	-	1	11/03/17 14:28	
IC-258-3A-101717	K1711288-012	95.3	-	-	1	11/03/17 14:28	
IC-258-3B-101717	K1711288-013	95.0	-	=	1	11/03/17 14:28	
IC-258-3C-101717	K1711288-014	91.6	-	=	1	11/03/17 14:28	
IC-258-3D-101717	K1711288-015	94.9	-	-	1	11/03/17 14:28	
IC-441-1A-101617	K1711288-016	89.2	-	=	1	11/03/17 14:28	
IC-441-1B-101617	K1711288-017	93.9	-	=	1	11/03/17 14:28	
IC-441-1C-101617	K1711288-018	91.6	-	-	1	11/03/17 14:28	
IC-441-1D-101617	K1711288-019	87.9	-	-	1	11/03/17 14:28	

QA/QC Report

Client: Teck American Incorporated

Project August 2017 Sampling SAT Study/B0095010.0005.00002

Date Collected:10/10/17 - 10/12/17 **Date Received:**10/12/17 - 10/14/17

Service Request:K1711288

Units:Percent

Sample Matrix: Soil

160.3 Modified

Analysis Method: Prep Method: None Basis: As Received

Replicate Sample Summary Inorganic Parameters

			Sample	Duplicate			RPD	Date
Sample Name:	Lab Code:	MRL	Result	Result	Average	RPD	Limit	Analyzed
IC-401-1A-101017	K1711288-001DUP	-	95.6	95.6	95.6	<1	20	11/03/17
IC-401-2D-101217	K1711288-011DUP	_	90.5	91.7	91.1	1	20	11/03/17

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Printed 11/21/2017 6:15:17 PM Superset Reference:17-0000442951 rev 00

Analytical Report

Client: Teck American Incorporated

Date Collected: 10/10/17 - 10/17/17 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00002

Sample Matrix: Soil

160.3 Modified

Analysis Method: Units: Percent **Prep Method:** Basis: Air Dried None

Solids, Total

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
IC-401-1A-101017	K1711288-001	97.8	-	1	11/17/17 17:16	
IC-401-1B-101017	K1711288-002	97.3	-	1	11/17/17 17:16	
IC-401-1C-101117	K1711288-003	97.2	-	1	11/17/17 17:16	
IC-401-1C-101117-D	K1711288-004	97.6	-	1	11/17/17 17:16	
IC-401-1D-101117	K1711288-005	94.8	-	1	11/17/17 17:16	
IC-401-2B-101117	K1711288-006	96.0	-	1	11/17/17 17:16	
IC1-401-2A-101217	K1711288-007	95.7	-	1	11/17/17 17:16	
IC2-401-2A-101217	K1711288-008	95.9	-	1	11/17/17 17:16	
IC3-401-2A-101217	K1711288-009	96.7	-	1	11/17/17 17:16	
IC-401-2C-101217	K1711288-010	96.1	-	1	11/17/17 17:16	
IC-401-2D-101217	K1711288-011	94.1	-	1	11/17/17 17:16	
IC-258-3A-101717	K1711288-012	98.3	-	1	11/17/17 17:16	
IC-258-3B-101717	K1711288-013	98.5	-	1	11/17/17 17:16	
IC-258-3C-101717	K1711288-014	95.5	-	1	11/17/17 17:16	
IC-258-3D-101717	K1711288-015	98.3	-	1	11/17/17 17:16	
IC-441-1A-101617	K1711288-016	95.4	-	1	11/17/17 17:16	
IC-441-1B-101617	K1711288-017	95.1	-	1	11/17/17 17:16	
IC-441-1C-101617	K1711288-018	95.8	-	1	11/17/17 17:16	
IC-441-1D-101617	K1711288-019	93.7	-	1	11/17/17 17:16	

Service Request: K1711288

Date Received: 10/12/17 - 10/18/17

QA/QC Report

Client: Teck American Incorporated

Project August 2017 Sampling SAT Study/B0095010.0005.00002 Date

Sample Matrix: Soil

Analysis Method:

160.3 Modified

Prep Method: None

Service Request:K1711288

Date Collected:10/10/17 - 10/12/17

Date Received: 10/12/17 - 10/14/17

Units:Percent
Basis: Air Dried

Replicate Sample Summary Inorganic Parameters

			Sample	Duplicate			RPD	Date
Sample Name:	Lab Code:	MRL	Result	Result	Average	RPD	Limit	Analyzed
IC-401-1A-101017	K1711288-001DUP	-	97.8	97.7	97.8	<1	10	11/17/17
IC-401-2D-101217	K1711288-011DUP	-	94.1	94.5	94.3	<1	10	11/17/17

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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General Chemistry

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Client: Teck American Incorporated

Date Collected: 10/10/17 - 10/17/17 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00002

Soil **Date Received:** 10/12/17 - 10/18/17

Sample Matrix:

Analysis Method: 9060 Units: Percent

Prep Method: Method Basis: Dry, per Method

Carbon, Total Organic (TOC)

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
IC-401-1A-101017	K1711288-001	5.97	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC-401-1B-101017	K1711288-002	4.56	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC-401-1C-101117	K1711288-003	4.73	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC-401-1C-101117-D	K1711288-004	5.00	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC-401-1D-101117	K1711288-005	6.09	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC-401-2B-101117	K1711288-006	5.73	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC1-401-2A-101217	K1711288-007	5.93	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC2-401-2A-101217	K1711288-008	4.24	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC3-401-2A-101217	K1711288-009	7.74	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC-401-2C-101217	K1711288-010	5.57	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC-401-2D-101217	K1711288-011	8.48	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC-258-3A-101717	K1711288-012	3.55	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC-258-3B-101717	K1711288-013	3.55	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC-258-3C-101717	K1711288-014	6.55	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC-258-3D-101717	K1711288-015	3.33	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC-441-1A-101617	K1711288-016	6.24	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC-441-1B-101617	K1711288-017	6.82	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC-441-1C-101617	K1711288-018	7.00	0.10	0.02	1	11/07/17 13:07	11/7/17	
IC-441-1D-101617	K1711288-019	7.91	0.10	0.02	1	11/07/17 13:07	11/7/17	
Method Blank	K1711288-MB1	ND U	0.10	0.02	1	11/07/17 13:07	11/7/17	

Service Request: K1711288

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QA/QC Report

Client: Teck American Incorporated

Service Request: K1711288

Project August 2017 Sampling SAT Study/B0095010.0005.00002

Date Collected: 10/10/17 **Date Received:** 10/12/17

Sample Matrix: Soil

Date Analyzed: 11/07/17

Replicate Sample Summary General Chemistry Parameters

Sample Name: IC-401-1A-101017

Units: Percent

Lab Code: K1711288-001

Basis: Dry, per Method

Duplicate Sample

K1711288-

Analysis Sample K1711288
O01DUP

Analyte NameMethodMRLMDLResultResultAverageRPDRPD LimitCarbon, Total Organic (TOC)90600.100.025.975.985.98<1</td>20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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QA/QC Report

Client: Teck American Incorporated

August 2017 Sampling SAT Study/B0095010.0005.00002

Sample Matrix: Soil

K1711288 10/10/17

Date Collected: Date Received:

Service Request:

10/12/17

Date Analyzed: **Date Extracted:** 11/7/17 11/7/17

Duplicate Matrix Spike Summary Carbon, Total Organic (TOC)

Sample Name:

IC-401-1A-101017

Units:

Percent

Lab Code:

Project:

K1711288-001

Basis:

Dry, per Method

Analysis Method: Prep Method:

9060 Method

> **Matrix Spike** K1711288-001MS

Duplicate Matrix Spike

K1711288-001DMS

RPD Sample Spike Spike % Rec **Analyte Name** Result **Amount** % Rec Result Amount % Rec Limits **RPD** Limit Result Carbon, Total Organic (TOC) 5.97 12.0 6.00 100 11.9 5.95 100 20 70-122

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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QA/QC Report

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00002

~ ...

Sample Matrix: Soil

Service Request:

K1711288

Date Analyzed: Date Extracted:

11/07/17 11/07/17

Lab Control Sample Summary

Carbon, Total Organic (TOC)

Analysis Method: 9060

Prep Method:

Method

Units:

Percent

Basis:

Dry, per Method

Analysis Lot:

569162

			Spike		% Rec
Sample Name	Lab Code	Result	Amount	% Rec	Limits
Lab Control Sample	K1711288-LCS1	0.600	0.60	100	72-122

Analytical Report

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00002 **Date Collected:** 10/10/17 - 10/17/17

August 2017 Sampling SAT Study/D0093010.00003.00002

Date Received: 10/12/17 - 10/18/17

Sample Matrix: Soil

__ .

Service Request: K1711288

Analysis Method: PSEP Sulfide **Prep Method:** Method

Units: mg/Kg
Basis: Dry

Sulfide, Total

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
IC-401-1A-101017	K1711288-001	ND U	1.7	0.6	1	10/20/17 02:12	10/19/17	**
IC-401-1B-101017	K1711288-002	ND U	1.7	0.6	1	10/20/17 02:12	10/19/17	**
IC-401-1C-101117	K1711288-003	0.5 J	1.6	0.5	1	10/20/17 02:12	10/19/17	**
IC-401-1C-101117-D	K1711288-004	0.8 J	1.7	0.6	1	10/20/17 02:12	10/19/17	**
IC-401-1D-101117	K1711288-005	0.6 J	1.9	0.6	1	10/20/17 02:12	10/19/17	**
IC-401-2B-101117	K1711288-006	0.5 J	1.7	0.5	1	10/20/17 02:12	10/19/17	**
IC1-401-2A-101217	K1711288-007	ND U	1.7	0.6	1	10/20/17 02:12	10/19/17	
IC2-401-2A-101217	K1711288-008	ND U	1.7	0.6	1	10/20/17 02:12	10/19/17	
IC3-401-2A-101217	K1711288-009	ND U	1.5	0.5	1	10/20/17 02:12	10/19/17	
IC-401-2C-101217	K1711288-010	0.5 J	1.5	0.5	1	10/20/17 02:12	10/19/17	
IC-401-2D-101217	K1711288-011	ND U	1.9	0.6	1	10/20/17 02:12	10/19/17	
IC-258-3A-101717	K1711288-012	ND U	1.4	0.5	1	10/24/17 01:05	10/23/17	
IC-258-3B-101717	K1711288-013	ND U	1.5	0.5	1	10/24/17 01:05	10/23/17	
IC-258-3C-101717	K1711288-014	ND U	1.5	0.5	1	10/24/17 01:05	10/23/17	
IC-258-3D-101717	K1711288-015	ND U	1.5	0.5	1	10/24/17 01:05	10/23/17	
IC-441-1A-101617	K1711288-016	ND U	1.5	0.5	1	10/24/17 01:05	10/23/17	
IC-441-1B-101617	K1711288-017	ND U	2.1	0.7	1	11/10/17 20:56	11/10/17	**
IC-441-1C-101617	K1711288-018	ND U	1.5	0.5	1	10/24/17 01:05	10/23/17	
IC-441-1D-101617	K1711288-019	ND U	1.5	0.5	1	10/24/17 01:05	10/23/17	
Method Blank	K1711288-MB1	ND U	1.0	0.3	1	10/20/17 02:12	10/19/17	
Method Blank	K1711288-MB2	1.2	1.0	0.3	1	10/24/17 01:05	10/23/17	
Method Blank	K1711288-MB3	ND U	1.0	0.3	1	11/10/17 20:56	11/10/17	

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QA/QC Report

Client: Teck American Incorporated

August 2017 Sampling SAT Study/B0095010.0005.00002

Sample Matrix: Soil

Project

- ...

Date Received: 10/14/17

Date Analyzed: 10/20/17

Units: mg/Kg

Basis: Dry

Service Request: K1711288

Date Collected: 10/12/17

Triplicate Sample Summary General Chemistry Parameters

Sample Name: IC1-401-2A-101217

Lab Code: K1711288-007

Analysis Method: PSEP Sulfide

Prep Method: Method

Analyte Name	MRL	MDL	Sample Result	Duplicate K1711288- 007DUP Result	Triplicate K1711288- 007TRP Result	Average	RSD	RSD Limit
Sulfide, Total	1.7	0.6	ND	ND	ND	NC	NC	20

Results flagged with an asterisk (*) indicate values outside control criteria.

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Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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QA/QC Report

Client: Teck American Incorporated

August 2017 Sampling SAT Study/B0095010.0005.00002

Sample Matrix: Soil

Project

Service Request: K1711288 **Date Collected:** 10/17/17

Date Received: 10/18/17

Date Analyzed: 10/24/17

Units: mg/Kg

Basis: Dry

Triplicate Sample Summary General Chemistry Parameters

Sample Name: IC-258-3A-101717

Lab Code: K1711288-012

Analysis Method: PSEP Sulfide

Prep Method: Method

Analyte Name	MRL	MDL	Sample Result	Duplicate K1711288- 012DUP Result	Triplicate K1711288- 012TRP Result	Average	RSD	RSD Limit
Sulfide, Total	1.4	0.5	ND	ND	ND	NC	NC	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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SuperSet Reference: 17-0000442951 rev 00

dba ALS Environmental

QA/QC Report

Client: Teck American Incorporated Service Request: K1711288

ProjectAugust 2017 Sampling SAT Study/B0095010.0005.00002Date Collected:NASample Matrix:SoilDate Received:NA

Date Analyzed: 11/10/17

Triplicate Sample Summary General Chemistry Parameters

Sample Name: Batch QC Units: mg/Kg

Lab Code:K1712207-001Basis:DryAnalysis Method:PSEP Sulfide

Prep Method: Method

Analyte Name	MRL	MDL	Sample Result	Duplicate K1712207- 001DUP Result	Triplicate K1712207- 001TRP Result	Average	RSD	RSD Limit
Sulfide, Total	420	130	830	890	890	872	4	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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SuperSet Reference: 17-0000442951 rev $00\,$

QA/QC Report

Client: Teck American Incorporated

August 2017 Sampling SAT Study/B0095010.0005.00002

Sample Matrix: Soil

Date Collected: Date Received: K1711288 10/12/17

Service Request:

10/14/17

Date Analyzed: Date Extracted: 10/20/17 10/19/17

Duplicate Matrix Spike Summary

Sulfide, Total

Sample Name: Lab Code:

Project:

IC1-401-2A-101217

K1711288-007

Units: mg/Kg **Basis:** Dry

Analysis Method:

PSEP Sulfide

Prep Method:

Method

Matrix Spike

Duplicate Matrix Spike

K1711288-007MS

K1711288-007DMS

	Sample		Spike			Spike		% Rec		RPD
Analyte Name	Result	Result	Amount	% Rec	Result	Amount	% Rec	Limits	RPD	Limit
Sulfide, Total	ND U	480	610	78	490	620	80	28-175	3	20

Results flagged with an asterisk (*) indicate values outside control criteria.

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Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Printed 11/14/2017 10:53:31 AM Superset Reference: 17-0000442951 rev 00

QA/QC Report

Client: Teck American Incorporated

August 2017 Sampling SAT Study/B0095010.0005.00002

Sample Matrix:

Project:

Soil

Service Request: Date Collected:

K1711288

10/17/17 10/18/17

Date Received: Date Analyzed:

10/24/17

Date Extracted:

10/23/17

Duplicate Matrix Spike Summary

Sulfide, Total

Sample Name:

IC-258-3A-101717

Lab Code: K1711288-012 **Units:** mg/Kg **Basis:** Dry

Analysis Method:

PSEP Sulfide

Prep Method:

Method

Matrix Spike

Duplicate Matrix Spike

K1711288-012MS

K1711288-012DMS

	Sample		Spike			Spike		% Rec		RPD
Analyte Name	Result	Result	Amount	% Rec	Result	Amount	% Rec	Limits	RPD	Limit
Sulfide, Total	ND U	460	500	92	470	510	93	28-175	2	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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QA/QC Report

Client: Teck American Incorporated **Service Request:**

K1711288

Project:

August 2017 Sampling SAT Study/B0095010.0005.00002

Date Collected:

N/A

Sample Matrix:

Soil

Date Received:

N/A 11/10/17

Date Analyzed: Date Extracted:

11/10/17

Duplicate Matrix Spike Summary

Sulfide, Total

Sample Name: Batch QC **Units:**

mg/Kg

Lab Code:

K1712207-001

Basis:

Dry

Analysis Method: Prep Method:

PSEP Sulfide

Method

Matrix Spike K1712207-001MS **Duplicate Matrix Spike**

K1712207-001DMS

	Sample		Spike			Spike		% Rec		RPD
Analyte Name	Result	Result	Amount	% Rec	Result	Amount	% Rec	Limits	RPD	Limit
Sulfide, Total	830	2040	1190	101	1910	1190	90	28-175	6	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Printed 11/14/2017 10:53:31 AM Superset Reference: 17-0000442951 rev 00

QA/QC Report

Client: Teck American Incorporated

August 2017 Sampling SAT Study/B0095010.0005.00002

Service Request: Date Analyzed: K1711288

Sample Matrix:

Prep Method:

Project:

Soil

Date Analyzed:
Date Extracted:

10/20/17 10/19/17

Lab Control Sample Summary

Sulfide, Total

Analysis Method: PSEP Sulfide

Method

Units:

mg/Kg

Basis:

Dry

Analysis Lot:

566694

			Spike		% Rec
Sample Name	Lab Code	Result	Amount	% Rec	Limits
Lab Control Sample	K1711288-LCS1	346	360	97	39-166

QA/QC Report

Client: Teck American Incorporated

August 2017 Sampling SAT Study/B0095010.0005.00002

Service Request: Date Analyzed: K1711288

Sample Matrix:

Project:

Soil

Date Extracted:

10/24/17 10/23/17

Lab Control Sample Summary

Sulfide, Total

Analysis Method: PSEP Sulfide

Prep Method: Method

Units:

mg/Kg

Basis:

Dry

Analysis Lot:

567112

			Spike		% Rec
Sample Name	Lab Code	Result	Amount	% Rec	Limits
Lab Control Sample	K1711288-LCS2	349	360	98	39-166

QA/QC Report

Client: Teck American Incorporated

August 2017 Sampling SAT Study/B0095010.0005.00002

Sample Matrix: Soil

Project:

Service Request:

K1711288

Date Analyzed:

11/10/17

Date Extracted:

11/10/17

Lab Control Sample Summary

Sulfide, Total

Analysis Method: PSEP Sulfide

Prep Method: Method **Units:**

mg/Kg

Basis:

Dry

Analysis Lot:

569680

			Spike		% Rec
Sample Name	Lab Code	Result	Amount	% Rec	Limits
Lab Control Sample	K1711288-LCS3	279	330	85	39-166



Metals

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

Analytical Report

Client: Teck American Incorporated

Service Request: K1711288 **Date Collected:** 10/10/17 10:58 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00002

Sample Matrix: Soil **Date Received:** 10/12/17 09:30

Sample Name: IC-401-1A-101017 Basis: NA

Lab Code: K1711288-001

SPLP Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.		Date Extracted	Q
Aluminum	6010C	20.0	mg/L	0.010	0.003	1	11/27/17 16:09	11/21/17	
Antimony	6010C	0.045	mg/L	0.020	0.006	1	11/27/17 16:09	11/21/17	
Arsenic	6010C	0.101	mg/L	0.010	0.004	1	11/27/17 16:09	11/21/17	
Barium	6010C	0.17 J	mg/L	0.20	0.10	1	11/27/17 16:09	11/21/17	
Beryllium	6010C	ND U	mg/L	0.010	0.0002	1	11/27/17 16:09	11/21/17	
Cadmium	6010C	0.004 J	mg/L	0.010	0.0002	1	11/27/17 16:09	11/21/17	
Calcium	6010C	3.4	mg/L	2.0	0.008	1	11/27/17 16:09	11/21/17	
Chromium	6010C	0.004 J	mg/L	0.010	0.002	1	11/27/17 16:09	11/21/17	
Cobalt	6010C	0.003 J	mg/L	0.010	0.0005	1	11/27/17 16:09	11/21/17	
Copper	6010C	0.023	mg/L	0.010	0.002	1	11/27/17 16:09	11/21/17	
Iron	6010C	9.97	mg/L	0.020	0.006	1	11/27/17 16:09	11/21/17	
Lead	6010C	0.371	mg/L	0.010	0.003	1	11/27/17 16:09	11/21/17	
Magnesium	6010C	1.29	mg/L	0.50	0.002	1	11/27/17 16:09	11/21/17	
Manganese	6010C	0.539	mg/L	0.010	0.0005	1	11/27/17 16:09	11/21/17	
Nickel	6010C	0.005 J	mg/L	0.010	0.0007	1	11/27/17 16:09	11/21/17	
Potassium	6010C	2.25	mg/L	0.20	0.04	1	11/27/17 16:09	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 16:09	11/21/17	
Silver	6010C	0.004 J	mg/L	0.020	0.0008	1	11/27/17 16:09	11/21/17	
Sodium	6010C	1.9 J	mg/L	2.0	0.03	1	11/27/17 16:09	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 16:09	11/21/17	
Vanadium	6010C	0.013	mg/L	0.010	0.0008	1	11/27/17 16:09	11/21/17	
Zinc	6010C	0.380	mg/L	0.0040	0.0200	1	11/27/17 16:09	11/21/17	

Analytical Report

Date Received: 10/12/17 09:30

Client: Teck American Incorporated

Service Request: K1711288 **Date Collected:** 10/10/17 11:55 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00002

Sample Matrix:

Soil

Sample Name: IC-401-1B-101017 Basis: NA

Lab Code: K1711288-002

SPLP Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	6010C	16.2	mg/L	0.010	0.003	1	11/27/17 16:25	11/21/17	
Antimony	6010C	0.038	mg/L	0.020	0.006	1	11/27/17 16:25	11/21/17	
Arsenic	6010C	0.085	mg/L	0.010	0.004	1	11/27/17 16:25	11/21/17	
Barium	6010C	0.15 J	mg/L	0.20	0.10	1	11/27/17 16:25	11/21/17	
Beryllium	6010C	ND U	mg/L	0.010	0.0002	1	11/27/17 16:25	11/21/17	
Cadmium	6010C	0.004 J	mg/L	0.010	0.0002	1	11/27/17 16:25	11/21/17	
Calcium	6010C	3.0	mg/L	2.0	0.008	1	11/27/17 16:25	11/21/17	
Chromium	6010C	0.004 J	mg/L	0.010	0.002	1	11/27/17 16:25	11/21/17	
Cobalt	6010C	0.003 J	mg/L	0.010	0.0005	1	11/27/17 16:25	11/21/17	
Copper	6010C	0.019	mg/L	0.010	0.002	1	11/27/17 16:25	11/21/17	
Iron	6010C	7.82	mg/L	0.020	0.006	1	11/27/17 16:25	11/21/17	
Lead	6010C	0.256	mg/L	0.010	0.003	1	11/27/17 16:25	11/21/17	
Magnesium	6010C	0.97	mg/L	0.50	0.002	1	11/27/17 16:25	11/21/17	
Manganese	6010C	0.580	mg/L	0.010	0.0005	1	11/27/17 16:25	11/21/17	
Nickel	6010C	0.004 J	mg/L	0.010	0.0007	1	11/27/17 16:25	11/21/17	
Potassium	6010C	1.75	mg/L	0.20	0.04	1	11/27/17 16:25	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 16:25	11/21/17	
Silver	6010C	ND U	mg/L	0.020	0.0008	1	11/27/17 16:25	11/21/17	
Sodium	6010C	1.8 J	mg/L	2.0	0.03	1	11/27/17 16:25	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 16:25	11/21/17	
Vanadium	6010C	0.010 J	mg/L	0.010	0.0008	1	11/27/17 16:25	11/21/17	
Zinc	6010C	0.338	mg/L	0.0040	0.0200	1	11/27/17 16:25	11/21/17	

Analytical Report

Date Received: 10/13/17 09:30

Client: Teck American Incorporated

Service Request: K1711288 **Date Collected:** 10/11/17 10:23 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00002

Sample Matrix:

Soil

Sample Name: IC-401-1C-101117 Basis: NA

Lab Code: K1711288-003

SPLP Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	ate Extracted	Q
Aluminum	6010C	17.3	mg/L	0.010	0.003	1	11/27/17 16:28	11/21/17	
Antimony	6010C	0.038	mg/L	0.020	0.006	1	11/27/17 16:28	11/21/17	
Arsenic	6010C	0.099	mg/L	0.010	0.004	1	11/27/17 16:28	11/21/17	
Barium	6010C	0.16 J	mg/L	0.20	0.10	1	11/27/17 16:28	11/21/17	
Beryllium	6010C	0.0003 J	mg/L	0.010	0.0002	1	11/27/17 16:28	11/21/17	
Cadmium	6010C	0.004 J	mg/L	0.010	0.0002	1	11/27/17 16:28	11/21/17	
Calcium	6010C	3.2	mg/L	2.0	0.008	1	11/27/17 16:28	11/21/17	
Chromium	6010C	0.004 J	mg/L	0.010	0.002	1	11/27/17 16:28	11/21/17	
Cobalt	6010C	0.003 J	mg/L	0.010	0.0005	1	11/27/17 16:28	11/21/17	
Copper	6010C	0.021	mg/L	0.010	0.002	1	11/27/17 16:28	11/21/17	
Iron	6010C	8.74	mg/L	0.020	0.006	1	11/27/17 16:28	11/21/17	
Lead	6010C	0.371	mg/L	0.010	0.003	1	11/27/17 16:28	11/21/17	
Magnesium	6010C	1.09	mg/L	0.50	0.002	1	11/27/17 16:28	11/21/17	
Manganese	6010C	0.537	mg/L	0.010	0.0005	1	11/27/17 16:28	11/21/17	
Nickel	6010C	0.004 J	mg/L	0.010	0.0007	1	11/27/17 16:28	11/21/17	
Potassium	6010C	2.06	mg/L	0.20	0.04	1	11/27/17 16:28	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 16:28	11/21/17	
Silver	6010C	0.0008 J	mg/L	0.020	0.0008	1	11/27/17 16:28	11/21/17	
Sodium	6010C	1.8 J	mg/L	2.0	0.03	1	11/27/17 16:28	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 16:28	11/21/17	
Vanadium	6010C	0.011	mg/L	0.010	0.0008	1	11/27/17 16:28	11/21/17	
Zinc	6010C	0.369	mg/L	0.0040	0.0200	1	11/27/17 16:28	11/21/17	

Analytical Report

Date Received: 10/13/17 09:30

Client: Teck American Incorporated

Service Request: K1711288 **Date Collected:** 10/11/17 12:35 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00002

Sample Matrix:

Soil

Sample Name: IC-401-1C-101117-D Basis: NA

Lab Code: K1711288-004

SPLP Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	6010C	16.8	mg/L	0.010	0.003	1	11/27/17 16:44	11/21/17	
Antimony	6010C	0.042	mg/L	0.020	0.006	1	11/27/17 16:44	11/21/17	
Arsenic	6010C	0.094	mg/L	0.010	0.004	1	11/27/17 16:44	11/21/17	
Barium	6010C	0.17 J	mg/L	0.20	0.10	1	11/27/17 16:44	11/21/17	
Beryllium	6010C	0.0002 J	mg/L	0.010	0.0002	1	11/27/17 16:44	11/21/17	
Cadmium	6010C	0.004 J	mg/L	0.010	0.0002	1	11/27/17 16:44	11/21/17	
Calcium	6010C	3.2	mg/L	2.0	0.008	1	11/27/17 16:44	11/21/17	
Chromium	6010C	0.004 J	mg/L	0.010	0.002	1	11/27/17 16:44	11/21/17	
Cobalt	6010C	0.003 J	mg/L	0.010	0.0005	1	11/27/17 16:44	11/21/17	
Copper	6010C	0.020	mg/L	0.010	0.002	1	11/27/17 16:44	11/21/17	
Iron	6010C	8.81	mg/L	0.020	0.006	1	11/27/17 16:44	11/21/17	
Lead	6010C	0.361	mg/L	0.010	0.003	1	11/27/17 16:44	11/21/17	
Magnesium	6010C	1.13	mg/L	0.50	0.002	1	11/27/17 16:44	11/21/17	
Manganese	6010C	0.528	mg/L	0.010	0.0005	1	11/27/17 16:44	11/21/17	
Nickel	6010C	0.005 J	mg/L	0.010	0.0007	1	11/27/17 16:44	11/21/17	
Potassium	6010C	2.22	mg/L	0.20	0.04	1	11/27/17 16:44	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 16:44	11/21/17	
Silver	6010C	0.001 J	mg/L	0.020	0.0008	1	11/27/17 16:44	11/21/17	
Sodium	6010C	1.8 J	mg/L	2.0	0.03	1	11/27/17 16:44	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 16:44	11/21/17	
Vanadium	6010C	0.012	mg/L	0.010	0.0008	1	11/27/17 16:44	11/21/17	
Zinc	6010C	0.370	mg/L	0.0040	0.0200	1	11/27/17 16:44	11/21/17	

Analytical Report

Date Received: 10/13/17 09:30

Client: Teck American Incorporated

Service Request: K1711288 **Date Collected:** 10/11/17 14:00 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00002

Sample Matrix: Soil

Sample Name: IC-401-1D-101117 Basis: NA

Lab Code: K1711288-005

SPLP Metals

	Analysis	.		1.607	1.007	5 .11		.	
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed		Q
Aluminum	6010C	11.7	mg/L	0.010	0.003	1	11/27/17 16:46	11/21/17	
Antimony	6010C	0.041	mg/L	0.020	0.006	1	11/27/17 16:46	11/21/17	
Arsenic	6010C	0.101	mg/L	0.010	0.004	1	11/27/17 16:46	11/21/17	
Barium	6010C	0.15 J	mg/L	0.20	0.10	1	11/27/17 16:46	11/21/17	
Beryllium	6010C	ND U	mg/L	0.010	0.0002	1	11/27/17 16:46	11/21/17	
Cadmium	6010C	0.003 J	mg/L	0.010	0.0002	1	11/27/17 16:46	11/21/17	
Calcium	6010C	3.4	mg/L	2.0	0.008	1	11/27/17 16:46	11/21/17	
Chromium	6010C	0.002 J	mg/L	0.010	0.002	1	11/27/17 16:46	11/21/17	
Cobalt	6010C	0.001 J	mg/L	0.010	0.0005	1	11/27/17 16:46	11/21/17	
Copper	6010C	0.021	mg/L	0.010	0.002	1	11/27/17 16:46	11/21/17	
Iron	6010C	6.56	mg/L	0.020	0.006	1	11/27/17 16:46	11/21/17	
Lead	6010C	0.300	mg/L	0.010	0.003	1	11/27/17 16:46	11/21/17	
Magnesium	6010C	0.98	mg/L	0.50	0.002	1	11/27/17 16:46	11/21/17	
Manganese	6010C	0.343	mg/L	0.010	0.0005	1	11/27/17 16:46	11/21/17	
Nickel	6010C	0.003 J	mg/L	0.010	0.0007	1	11/27/17 16:46	11/21/17	
Potassium	6010C	3.25	mg/L	0.20	0.04	1	11/27/17 16:46	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 16:46	11/21/17	
Silver	6010C	0.001 J	mg/L	0.020	0.0008	1	11/27/17 16:46	11/21/17	
Sodium	6010C	1.9 J	mg/L	2.0	0.03	1	11/27/17 16:46	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 16:46	11/21/17	
Vanadium	6010C	0.009 J	mg/L	0.010	0.0008	1	11/27/17 16:46	11/21/17	
Zinc	6010C	0.339	mg/L	0.0040	0.0200	1	11/27/17 16:46	11/21/17	

Analytical Report

Date Received: 10/13/17 09:30

Client: Teck American Incorporated

Service Request: K1711288 **Date Collected:** 10/11/17 15:38 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00002

Sample Matrix:

Soil

Sample Name: IC-401-2B-101117 Basis: NA

Lab Code: K1711288-006

SPLP Metals

	Analysis	.	T T 1.	1.007	1.007	5 .11		D . D	_
Analyte Name	Method	Result	Units	MRL	MDL	Dil.		Date Extracted	Q
Aluminum	6010C	15.1	mg/L	0.010	0.003	1	11/27/17 16:49	11/21/17	
Antimony	6010C	0.035	mg/L	0.020	0.006	1	11/27/17 16:49	11/21/17	
Arsenic	6010C	0.085	mg/L	0.010	0.004	1	11/27/17 16:49	11/21/17	
Barium	6010C	0.16 J	mg/L	0.20	0.10	1	11/27/17 16:49	11/21/17	
Beryllium	6010C	0.0002 J	mg/L	0.010	0.0002	1	11/27/17 16:49	11/21/17	
Cadmium	6010C	0.005 J	mg/L	0.010	0.0002	1	11/27/17 16:49	11/21/17	
Calcium	6010C	3.5	mg/L	2.0	0.008	1	11/27/17 16:49	11/21/17	
Chromium	6010C	0.003 J	mg/L	0.010	0.002	1	11/27/17 16:49	11/21/17	
Cobalt	6010C	0.002 J	mg/L	0.010	0.0005	1	11/27/17 16:49	11/21/17	
Copper	6010C	0.020	mg/L	0.010	0.002	1	11/27/17 16:49	11/21/17	
Iron	6010C	6.92	mg/L	0.020	0.006	1	11/27/17 16:49	11/21/17	
Lead	6010C	0.264	mg/L	0.010	0.003	1	11/27/17 16:49	11/21/17	
Magnesium	6010C	0.98	mg/L	0.50	0.002	1	11/27/17 16:49	11/21/17	
Manganese	6010C	0.571	mg/L	0.010	0.0005	1	11/27/17 16:49	11/21/17	
Nickel	6010C	0.003 J	mg/L	0.010	0.0007	1	11/27/17 16:49	11/21/17	
Potassium	6010C	2.46	mg/L	0.20	0.04	1	11/27/17 16:49	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 16:49	11/21/17	
Silver	6010C	0.0008 J	mg/L	0.020	0.0008	1	11/27/17 16:49	11/21/17	
Sodium	6010C	1.9 J	mg/L	2.0	0.03	1	11/27/17 16:49	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 16:49	11/21/17	
Vanadium	6010C	0.008 J	mg/L	0.010	0.0008	1	11/27/17 16:49	11/21/17	
Zinc	6010C	0.383	mg/L	0.0040	0.0200	1	11/27/17 16:49	11/21/17	

Analytical Report

Client: Teck American Incorporated

Service Request: K1711288 **Date Collected:** 10/12/17 09:20 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00002

Sample Matrix:

Sample Name:

Soil

IC1-401-2A-101217

Lab Code: K1711288-007

Date Received: 10/14/17 09:30

Basis: NA

SPLP Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed I	ate Extracted	Q
Aluminum	6010C	15.1	mg/L	0.010	0.003	1	11/27/17 16:51	11/21/17	
Antimony	6010C	0.066	mg/L	0.020	0.006	1	11/27/17 16:51	11/21/17	
Arsenic	6010C	0.148	mg/L	0.010	0.004	1	11/27/17 16:51	11/21/17	
Barium	6010C	0.15 J	mg/L	0.20	0.10	1	11/27/17 16:51	11/21/17	
Beryllium	6010C	ND U	mg/L	0.010	0.0002	1	11/27/17 16:51	11/21/17	
Cadmium	6010C	0.006 J	mg/L	0.010	0.0002	1	11/27/17 16:51	11/21/17	
Calcium	6010C	3.1	mg/L	2.0	0.008	1	11/27/17 16:51	11/21/17	
Chromium	6010C	0.004 J	mg/L	0.010	0.002	1	11/27/17 16:51	11/21/17	
Cobalt	6010C	0.003 J	mg/L	0.010	0.0005	1	11/27/17 16:51	11/21/17	
Copper	6010C	0.027	mg/L	0.010	0.002	1	11/27/17 16:51	11/21/17	
Iron	6010C	7.82	mg/L	0.020	0.006	1	11/27/17 16:51	11/21/17	
Lead	6010C	0.439	mg/L	0.010	0.003	1	11/27/17 16:51	11/21/17	
Magnesium	6010C	1.08	mg/L	0.50	0.002	1	11/27/17 16:51	11/21/17	
Manganese	6010C	0.596	mg/L	0.010	0.0005	1	11/27/17 16:51	11/21/17	
Nickel	6010C	0.004 J	mg/L	0.010	0.0007	1	11/27/17 16:51	11/21/17	
Potassium	6010C	2.73	mg/L	0.20	0.04	1	11/27/17 16:51	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 16:51	11/21/17	
Silver	6010C	0.002 J	mg/L	0.020	0.0008	1	11/27/17 16:51	11/21/17	
Sodium	6010C	2.0 J	mg/L	2.0	0.03	1	11/27/17 16:51	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 16:51	11/21/17	
Vanadium	6010C	0.010	mg/L	0.010	0.0008	1	11/27/17 16:51	11/21/17	
Zinc	6010C	0.446	mg/L	0.0040	0.0200	1	11/27/17 16:51	11/21/17	

Analytical Report

Client: Teck American Incorporated

Service Request: K1711288 **Date Collected:** 10/12/17 10:15 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00002

Sample Matrix: Soil **Date Received:** 10/14/17 09:30

Sample Name: IC2-401-2A-101217 Basis: NA

Lab Code: K1711288-008

SPLP Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Data Extracted	0
Aluminum	6010C	15.2	mg/L	0.010	0.003	1 1	11/27/17 16:54	11/21/17	Q
Antimony	6010C	0.052	mg/L	0.020	0.006	1	11/27/17 16:54	11/21/17	
Arsenic	6010C	0.148	mg/L	0.010	0.004	1	11/27/17 16:54	11/21/17	
Barium	6010C	0.16 J	mg/L	0.20	0.10	1	11/27/17 16:54	11/21/17	
Beryllium	6010C	0.0002 J	mg/L	0.010	0.0002	1	11/27/17 16:54	11/21/17	
Cadmium	6010C	0.006 J	mg/L	0.010	0.0002	1	11/27/17 16:54	11/21/17	
Calcium	6010C	3.2	mg/L	2.0	0.008	1	11/27/17 16:54	11/21/17	
Chromium	6010C	0.003 J	mg/L	0.010	0.002	1	11/27/17 16:54	11/21/17	
Cobalt	6010C	0.003 J	mg/L	0.010	0.0005	1	11/27/17 16:54	11/21/17	
Copper	6010C	0.025	mg/L	0.010	0.002	1	11/27/17 16:54	11/21/17	
Iron	6010C	7.83	mg/L	0.020	0.006	1	11/27/17 16:54	11/21/17	
Lead	6010C	0.400	mg/L	0.010	0.003	1	11/27/17 16:54	11/21/17	
Magnesium	6010C	1.04	mg/L	0.50	0.002	1	11/27/17 16:54	11/21/17	
Manganese	6010C	0.686	mg/L	0.010	0.0005	1	11/27/17 16:54	11/21/17	
Nickel	6010C	0.004 J	mg/L	0.010	0.0007	1	11/27/17 16:54	11/21/17	
Potassium	6010C	2.59	mg/L	0.20	0.04	1	11/27/17 16:54	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 16:54	11/21/17	
Silver	6010C	0.001 J	mg/L	0.020	0.0008	1	11/27/17 16:54	11/21/17	
Sodium	6010C	1.9 J	mg/L	2.0	0.03	1	11/27/17 16:54	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 16:54	11/21/17	
Vanadium	6010C	0.010	mg/L	0.010	0.0008	1	11/27/17 16:54	11/21/17	
Zinc	6010C	0.419	mg/L	0.0040	0.0200	1	11/27/17 16:54	11/21/17	

Analytical Report

Client: Teck American Incorporated

Service Request: K1711288 **Date Collected:** 10/12/17 10:55 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00002

Sample Matrix: Soil **Date Received:** 10/14/17 09:30

Sample Name: Basis: NA IC3-401-2A-101217

Lab Code: K1711288-009

SPLP Metals

A a laud a Nila ana a	Analysis	D14	TT 24	MDI	MDI	Da	D-4- All	D-4- E-44-1	0
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed		Q
Aluminum	6010C	16.3	mg/L	0.010	0.003	1	11/27/17 16:56	11/21/17	
Antimony	6010C	0.065	mg/L	0.020	0.006	1	11/27/17 16:56	11/21/17	
Arsenic	6010C	0.154	mg/L	0.010	0.004	1	11/27/17 16:56	11/21/17	
Barium	6010C	0.15 J	mg/L	0.20	0.10	1	11/27/17 16:56	11/21/17	
Beryllium	6010C	0.0003 J	mg/L	0.010	0.0002	1	11/27/17 16:56	11/21/17	
Cadmium	6010C	0.007 J	mg/L	0.010	0.0002	1	11/27/17 16:56	11/21/17	
Calcium	6010C	3.3	mg/L	2.0	0.008	1	11/27/17 16:56	11/21/17	
Chromium	6010C	0.003 J	mg/L	0.010	0.002	1	11/27/17 16:56	11/21/17	
Cobalt	6010C	0.003 J	mg/L	0.010	0.0005	1	11/27/17 16:56	11/21/17	
Copper	6010C	0.027	mg/L	0.010	0.002	1	11/27/17 16:56	11/21/17	
Iron	6010C	8.37	mg/L	0.020	0.006	1	11/27/17 16:56	11/21/17	
Lead	6010C	0.431	mg/L	0.010	0.003	1	11/27/17 16:56	11/21/17	
Magnesium	6010C	1.10	mg/L	0.50	0.002	1	11/27/17 16:56	11/21/17	
Manganese	6010C	0.672	mg/L	0.010	0.0005	1	11/27/17 16:56	11/21/17	
Nickel	6010C	0.004 J	mg/L	0.010	0.0007	1	11/27/17 16:56	11/21/17	
Potassium	6010C	2.60	mg/L	0.20	0.04	1	11/27/17 16:56	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 16:56	11/21/17	
Silver	6010C	0.001 J	mg/L	0.020	0.0008	1	11/27/17 16:56	11/21/17	
Sodium	6010C	1.9 J	mg/L	2.0	0.03	1	11/27/17 16:56	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 16:56	11/21/17	
Vanadium	6010C	0.011	mg/L	0.010	0.0008	1	11/27/17 16:56	11/21/17	
Zinc	6010C	0.482	mg/L	0.0040	0.0200	1	11/27/17 16:56	11/21/17	

Analytical Report

Client: Teck American Incorporated

Service Request: K1711288 **Date Collected:** 10/12/17 12:50 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00002

Sample Matrix: Soil

Date Received: 10/14/17 09:30

Sample Name: IC-401-2C-101217 Lab Code: K1711288-010

SPLP Metals

Basis: NA

A LAN	Analysis	D 1/	T T *4	MDI	MDI	ъч	D (A 1 1		0
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed		Q
Aluminum	6010C	15.9	mg/L	0.010	0.003	1	11/27/17 16:58	11/21/17	
Antimony	6010C	0.041	mg/L	0.020	0.006	1	11/27/17 16:58	11/21/17	
Arsenic	6010C	0.110	mg/L	0.010	0.004	1	11/27/17 16:58	11/21/17	
Barium	6010C	0.16 J	mg/L	0.20	0.10	1	11/27/17 16:58	11/21/17	
Beryllium	6010C	0.0002 J	mg/L	0.010	0.0002	1	11/27/17 16:58	11/21/17	
Cadmium	6010C	0.005 J	mg/L	0.010	0.0002	1	11/27/17 16:58	11/21/17	
Calcium	6010C	3.2	mg/L	2.0	0.008	1	11/27/17 16:58	11/21/17	
Chromium	6010C	0.003 J	mg/L	0.010	0.002	1	11/27/17 16:58	11/21/17	
Cobalt	6010C	0.002 J	mg/L	0.010	0.0005	1	11/27/17 16:58	11/21/17	
Copper	6010C	0.023	mg/L	0.010	0.002	1	11/27/17 16:58	11/21/17	
Iron	6010C	8.14	mg/L	0.020	0.006	1	11/27/17 16:58	11/21/17	
Lead	6010C	0.346	mg/L	0.010	0.003	1	11/27/17 16:58	11/21/17	
Magnesium	6010C	1.00	mg/L	0.50	0.002	1	11/27/17 16:58	11/21/17	
Manganese	6010C	0.558	mg/L	0.010	0.0005	1	11/27/17 16:58	11/21/17	
Nickel	6010C	0.004 J	mg/L	0.010	0.0007	1	11/27/17 16:58	11/21/17	
Potassium	6010C	2.08	mg/L	0.20	0.04	1	11/27/17 16:58	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 16:58	11/21/17	
Silver	6010C	0.001 J	mg/L	0.020	0.0008	1	11/27/17 16:58	11/21/17	
Sodium	6010C	1.9 J	mg/L	2.0	0.03	1	11/27/17 16:58	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 16:58	11/21/17	
Vanadium	6010C	0.010 J	mg/L	0.010	0.0008	1	11/27/17 16:58	11/21/17	
Zinc	6010C	0.404	mg/L	0.0040	0.0200	1	11/27/17 16:58	11/21/17	

Analytical Report

Client: Teck American Incorporated

Service Request: K1711288 **Date Collected:** 10/12/17 14:00 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00002

Sample Matrix:

Soil

Basis: NA

Date Received: 10/14/17 09:30

Sample Name: IC-401-2D-101217 Lab Code: K1711288-011

SPLP Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed I	Oate Extracted	Q
Aluminum	6010C	16.8	mg/L	0.010	0.003	1	11/27/17 17:01	11/21/17	
Antimony	6010C	0.038	mg/L	0.020	0.006	1	11/27/17 17:01	11/21/17	
Arsenic	6010C	0.122	mg/L	0.010	0.004	1	11/27/17 17:01	11/21/17	
Barium	6010C	0.15 J	mg/L	0.20	0.10	1	11/27/17 17:01	11/21/17	
Beryllium	6010C	ND U	mg/L	0.010	0.0002	1	11/27/17 17:01	11/21/17	
Cadmium	6010C	0.006 J	mg/L	0.010	0.0002	1	11/27/17 17:01	11/21/17	
Calcium	6010C	3.7	mg/L	2.0	0.008	1	11/27/17 17:01	11/21/17	
Chromium	6010C	0.004 J	mg/L	0.010	0.002	1	11/27/17 17:01	11/21/17	
Cobalt	6010C	0.002 J	mg/L	0.010	0.0005	1	11/27/17 17:01	11/21/17	
Copper	6010C	0.025	mg/L	0.010	0.002	1	11/27/17 17:01	11/21/17	
Iron	6010C	8.08	mg/L	0.020	0.006	1	11/27/17 17:01	11/21/17	
Lead	6010C	0.370	mg/L	0.010	0.003	1	11/27/17 17:01	11/21/17	
Magnesium	6010C	1.06	mg/L	0.50	0.002	1	11/27/17 17:01	11/21/17	
Manganese	6010C	0.549	mg/L	0.010	0.0005	1	11/27/17 17:01	11/21/17	
Nickel	6010C	0.004 J	mg/L	0.010	0.0007	1	11/27/17 17:01	11/21/17	
Potassium	6010C	4.14	mg/L	0.20	0.04	1	11/27/17 17:01	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 17:01	11/21/17	
Silver	6010C	0.001 J	mg/L	0.020	0.0008	1	11/27/17 17:01	11/21/17	
Sodium	6010C	1.8 J	mg/L	2.0	0.03	1	11/27/17 17:01	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 17:01	11/21/17	
Vanadium	6010C	0.011	mg/L	0.010	0.0008	1	11/27/17 17:01	11/21/17	
Zinc	6010C	0.448	mg/L	0.0040	0.0200	1	11/27/17 17:01	11/21/17	

Analytical Report

Client: Teck American Incorporated

Service Request: K1711288 **Date Collected:** 10/17/17 08:40 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00002

Sample Matrix: Soil **Date Received:** 10/18/17 09:30

Sample Name: IC-258-3A-101717 Basis: NA

Lab Code: K1711288-012

SPLP Metals

A I4 - NI	Analysis	D14	TT *4	MDI	MDI	Da	D-4- Al	D-4- E-44-1	0
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed		Q
Aluminum	6010C	22.0	mg/L	0.010	0.003	1	11/27/17 17:03	11/21/17	
Antimony	6010C	0.014 J	mg/L	0.020	0.006	1	11/27/17 17:03	11/21/17	
Arsenic	6010C	0.032	mg/L	0.010	0.004	1	11/27/17 17:03	11/21/17	
Barium	6010C	0.20 J	mg/L	0.20	0.10	1	11/27/17 17:03	11/21/17	
Beryllium	6010C	0.0004 J	mg/L	0.010	0.0002	1	11/27/17 17:03	11/21/17	
Cadmium	6010C	0.002 J	mg/L	0.010	0.0002	1	11/27/17 17:03	11/21/17	
Calcium	6010C	4.3	mg/L	2.0	0.008	1	11/27/17 17:03	11/21/17	
Chromium	6010C	0.003 J	mg/L	0.010	0.002	1	11/27/17 17:03	11/21/17	
Cobalt	6010C	0.003 J	mg/L	0.010	0.0005	1	11/27/17 17:03	11/21/17	
Copper	6010C	0.015	mg/L	0.010	0.002	1	11/27/17 17:03	11/21/17	
Iron	6010C	9.10	mg/L	0.020	0.006	1	11/27/17 17:03	11/21/17	
Lead	6010C	0.149	mg/L	0.010	0.003	1	11/27/17 17:03	11/21/17	
Magnesium	6010C	1.08	mg/L	0.50	0.002	1	11/27/17 17:03	11/21/17	
Manganese	6010C	0.607	mg/L	0.010	0.0005	1	11/27/17 17:03	11/21/17	
Nickel	6010C	0.003 J	mg/L	0.010	0.0007	1	11/27/17 17:03	11/21/17	
Potassium	6010C	1.86	mg/L	0.20	0.04	1	11/27/17 17:03	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 17:03	11/21/17	
Silver	6010C	0.0009 J	mg/L	0.020	0.0008	1	11/27/17 17:03	11/21/17	
Sodium	6010C	1.7 J	mg/L	2.0	0.03	1	11/27/17 17:03	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 17:03	11/21/17	
Vanadium	6010C	0.010	mg/L	0.010	0.0008	1	11/27/17 17:03	11/21/17	
Zinc	6010C	0.233	mg/L	0.0040	0.0200	1	11/27/17 17:03	11/21/17	

Analytical Report

Date Received: 10/18/17 09:30

Client: Teck American Incorporated

Service Request: K1711288 **Date Collected:** 10/17/17 09:15 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00002

Sample Matrix:

Soil

Sample Name: Basis: NA IC-258-3B-101717

Lab Code: K1711288-013

SPLP Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	6010C	17.6	mg/L	0.010	0.003	1	11/27/17 17:14	11/21/17	
Antimony	6010C	0.015 J	mg/L	0.020	0.006	1	11/27/17 17:14	11/21/17	
Arsenic	6010C	0.048	mg/L	0.010	0.004	1	11/27/17 17:14	11/21/17	
Barium	6010C	0.18 J	mg/L	0.20	0.10	1	11/27/17 17:14	11/21/17	
Beryllium	6010C	0.0002 J	mg/L	0.010	0.0002	1	11/27/17 17:14	11/21/17	
Cadmium	6010C	0.003 J	mg/L	0.010	0.0002	1	11/27/17 17:14	11/21/17	
Calcium	6010C	3.9	mg/L	2.0	0.008	1	11/27/17 17:14	11/21/17	
Chromium	6010C	0.003 J	mg/L	0.010	0.002	1	11/27/17 17:14	11/21/17	
Cobalt	6010C	0.003 J	mg/L	0.010	0.0005	1	11/27/17 17:14	11/21/17	
Copper	6010C	0.016	mg/L	0.010	0.002	1	11/27/17 17:14	11/21/17	
Iron	6010C	7.96	mg/L	0.020	0.006	1	11/27/17 17:14	11/21/17	
Lead	6010C	0.194	mg/L	0.010	0.003	1	11/27/17 17:14	11/21/17	
Magnesium	6010C	1.10	mg/L	0.50	0.002	1	11/27/17 17:14	11/21/17	
Manganese	6010C	0.587	mg/L	0.010	0.0005	1	11/27/17 17:14	11/21/17	
Nickel	6010C	0.003 J	mg/L	0.010	0.0007	1	11/27/17 17:14	11/21/17	
Potassium	6010C	2.02	mg/L	0.20	0.04	1	11/27/17 17:14	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 17:14	11/21/17	
Silver	6010C	ND U	mg/L	0.020	0.0008	1	11/27/17 17:14	11/21/17	
Sodium	6010C	1.7 J	mg/L	2.0	0.03	1	11/27/17 17:14	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 17:14	11/21/17	
Vanadium	6010C	0.009 J	mg/L	0.010	0.0008	1	11/27/17 17:14	11/21/17	
Zinc	6010C	0.292	mg/L	0.0040	0.0200	1	11/27/17 17:14	11/21/17	

Analytical Report

Client: Teck American Incorporated

Service Request: K1711288 **Date Collected:** 10/17/17 09:50 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00002

Sample Matrix:

Sample Name:

Soil

Basis: NA IC-258-3C-101717

Date Received: 10/18/17 09:30

Lab Code: K1711288-014

SPLP Metals

	Analysis	.	T T 1.	1.607	1.55	5 .0		D . D	
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed		Q
Aluminum	6010C	14.1	mg/L	0.010	0.003	1	11/27/17 17:16	11/21/17	
Antimony	6010C	0.018 J	mg/L	0.020	0.006	1	11/27/17 17:16	11/21/17	
Arsenic	6010C	0.041	mg/L	0.010	0.004	1	11/27/17 17:16	11/21/17	
Barium	6010C	0.19 J	mg/L	0.20	0.10	1	11/27/17 17:16	11/21/17	
Beryllium	6010C	ND U	mg/L	0.010	0.0002	1	11/27/17 17:16	11/21/17	
Cadmium	6010C	0.004 J	mg/L	0.010	0.0002	1	11/27/17 17:16	11/21/17	
Calcium	6010C	4.2	mg/L	2.0	0.008	1	11/27/17 17:16	11/21/17	
Chromium	6010C	0.003 J	mg/L	0.010	0.002	1	11/27/17 17:16	11/21/17	
Cobalt	6010C	0.002 J	mg/L	0.010	0.0005	1	11/27/17 17:16	11/21/17	
Copper	6010C	0.016	mg/L	0.010	0.002	1	11/27/17 17:16	11/21/17	
Iron	6010C	6.36	mg/L	0.020	0.006	1	11/27/17 17:16	11/21/17	
Lead	6010C	0.224	mg/L	0.010	0.003	1	11/27/17 17:16	11/21/17	
Magnesium	6010C	1.02	mg/L	0.50	0.002	1	11/27/17 17:16	11/21/17	
Manganese	6010C	0.442	mg/L	0.010	0.0005	1	11/27/17 17:16	11/21/17	
Nickel	6010C	0.002 J	mg/L	0.010	0.0007	1	11/27/17 17:16	11/21/17	
Potassium	6010C	2.54	mg/L	0.20	0.04	1	11/27/17 17:16	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 17:16	11/21/17	
Silver	6010C	0.0009 J	mg/L	0.020	0.0008	1	11/27/17 17:16	11/21/17	
Sodium	6010C	2.0 J	mg/L	2.0	0.03	1	11/27/17 17:16	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 17:16	11/21/17	
Vanadium	6010C	0.007 J	mg/L	0.010	0.0008	1	11/27/17 17:16	11/21/17	
Zinc	6010C	0.292	mg/L	0.0040	0.0200	1	11/27/17 17:16	11/21/17	

Analytical Report

Client: Teck American Incorporated

Service Request: K1711288 **Date Collected:** 10/17/17 10:20 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00002

Sample Matrix: Soil **Date Received:** 10/18/17 09:30

Sample Name: Basis: NA IC-258-3D-101717

Lab Code: K1711288-015

SPLP Metals

A a laud a Nilana a	Analysis	D14	TT 24	MDI	MDI	Da	D-4- AlI	D-4- E-44- J	0
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	•	Date Extracted	Q
Aluminum	6010C	13.4	mg/L	0.010	0.003	1	11/27/17 17:18	11/21/17	
Antimony	6010C	0.017 J	mg/L	0.020	0.006	I	11/27/17 17:18	11/21/17	
Arsenic	6010C	0.058	mg/L	0.010	0.004	1	11/27/17 17:18	11/21/17	
Barium	6010C	0.15 J	mg/L	0.20	0.10	1	11/27/17 17:18	11/21/17	
Beryllium	6010C	ND U	mg/L	0.010	0.0002	1	11/27/17 17:18	11/21/17	
Cadmium	6010C	0.003 J	mg/L	0.010	0.0002	1	11/27/17 17:18	11/21/17	
Calcium	6010C	4.1	mg/L	2.0	0.008	1	11/27/17 17:18	11/21/17	
Chromium	6010C	0.003 J	mg/L	0.010	0.002	1	11/27/17 17:18	11/21/17	
Cobalt	6010C	0.002 J	mg/L	0.010	0.0005	1	11/27/17 17:18	11/21/17	
Copper	6010C	0.016	mg/L	0.010	0.002	1	11/27/17 17:18	11/21/17	
Iron	6010C	6.66	mg/L	0.020	0.006	1	11/27/17 17:18	11/21/17	
Lead	6010C	0.208	mg/L	0.010	0.003	1	11/27/17 17:18	11/21/17	
Magnesium	6010C	1.04	mg/L	0.50	0.002	1	11/27/17 17:18	11/21/17	
Manganese	6010C	0.497	mg/L	0.010	0.0005	1	11/27/17 17:18	11/21/17	
Nickel	6010C	0.002 J	mg/L	0.010	0.0007	1	11/27/17 17:18	11/21/17	
Potassium	6010C	1.94	mg/L	0.20	0.04	1	11/27/17 17:18	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 17:18	11/21/17	
Silver	6010C	ND U	mg/L	0.020	0.0008	1	11/27/17 17:18	11/21/17	
Sodium	6010C	1.7 J	mg/L	2.0	0.03	1	11/27/17 17:18	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 17:18	11/21/17	
Vanadium	6010C	0.008 J	mg/L	0.010	0.0008	1	11/27/17 17:18	11/21/17	
Zinc	6010C	0.276	mg/L	0.0040	0.0200	1	11/27/17 17:18	11/21/17	

Analytical Report

Client: Teck American Incorporated

Service Request: K1711288 **Date Collected:** 10/16/17 09:15 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00002

Sample Matrix: Soil **Date Received:** 10/18/17 09:30

Sample Name: IC-441-1A-101617 Basis: NA

Lab Code: K1711288-016

SPLP Metals

A 1 4 N	Analysis	D 1/	T T *4	MDI	MDI	D.II	D (4 15 4 4 1	0
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D		Q
Aluminum	6010C	18.3	mg/L	0.010	0.003	1	11/27/17 17:21	11/21/17	
Antimony	6010C	0.008 J	mg/L	0.020	0.006	1	11/27/17 17:21	11/21/17	
Arsenic	6010C	0.033	mg/L	0.010	0.004	1	11/27/17 17:21	11/21/17	
Barium	6010C	0.28	mg/L	0.20	0.10	1	11/27/17 17:21	11/21/17	
Beryllium	6010C	0.0004 J	mg/L	0.010	0.0002	1	11/27/17 17:21	11/21/17	
Cadmium	6010C	0.004 J	mg/L	0.010	0.0002	1	11/27/17 17:21	11/21/17	
Calcium	6010C	7.5	mg/L	2.0	0.008	1	11/27/17 17:21	11/21/17	
Chromium	6010C	0.009 J	mg/L	0.010	0.002	1	11/27/17 17:21	11/21/17	
Cobalt	6010C	0.006 J	mg/L	0.010	0.0005	1	11/27/17 17:21	11/21/17	
Copper	6010C	0.024	mg/L	0.010	0.002	1	11/27/17 17:21	11/21/17	
Iron	6010C	11.5	mg/L	0.020	0.006	1	11/27/17 17:21	11/21/17	
Lead	6010C	0.245	mg/L	0.010	0.003	1	11/27/17 17:21	11/21/17	
Magnesium	6010C	2.48	mg/L	0.50	0.002	1	11/27/17 17:21	11/21/17	
Manganese	6010C	0.856	mg/L	0.010	0.0005	1	11/27/17 17:21	11/21/17	
Nickel	6010C	0.011	mg/L	0.010	0.0007	1	11/27/17 17:21	11/21/17	
Potassium	6010C	6.25	mg/L	0.20	0.04	1	11/27/17 17:21	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 17:21	11/21/17	
Silver	6010C	0.001 J	mg/L	0.020	0.0008	1	11/27/17 17:21	11/21/17	
Sodium	6010C	1.8 J	mg/L	2.0	0.03	1	11/27/17 17:21	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 17:21	11/21/17	
Vanadium	6010C	0.017	mg/L	0.010	0.0008	1	11/27/17 17:21	11/21/17	
Zinc	6010C	0.329	mg/L	0.0040	0.0200	1	11/27/17 17:21	11/21/17	

Analytical Report

Client: Teck American Incorporated

Service Request: K1711288 **Date Collected:** 10/16/17 10:15 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00002

Sample Matrix:

Soil

Basis: NA

Date Received: 10/18/17 09:30

Sample Name: Lab Code:

K1711288-017

IC-441-1B-101617

SPLP Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	Oate Extracted	Q
Aluminum	6010C	13.2	mg/L	0.010	0.003	1	11/27/17 17:23	11/21/17	
Antimony	6010C	0.020 J	mg/L	0.020	0.006	1	11/27/17 17:23	11/21/17	
Arsenic	6010C	0.050	mg/L	0.010	0.004	1	11/27/17 17:23	11/21/17	
Barium	6010C	0.22	mg/L	0.20	0.10	1	11/27/17 17:23	11/21/17	
Beryllium	6010C	0.0002 J	mg/L	0.010	0.0002	1	11/27/17 17:23	11/21/17	
Cadmium	6010C	0.006 J	mg/L	0.010	0.0002	1	11/27/17 17:23	11/21/17	
Calcium	6010C	7.3	mg/L	2.0	0.008	1	11/27/17 17:23	11/21/17	
Chromium	6010C	0.006 J	mg/L	0.010	0.002	1	11/27/17 17:23	11/21/17	
Cobalt	6010C	0.004 J	mg/L	0.010	0.0005	1	11/27/17 17:23	11/21/17	
Copper	6010C	0.029	mg/L	0.010	0.002	1	11/27/17 17:23	11/21/17	
Iron	6010C	8.02	mg/L	0.020	0.006	1	11/27/17 17:23	11/21/17	
Lead	6010C	0.348	mg/L	0.010	0.003	1	11/27/17 17:23	11/21/17	
Magnesium	6010C	1.67	mg/L	0.50	0.002	1	11/27/17 17:23	11/21/17	
Manganese	6010C	0.686	mg/L	0.010	0.0005	1	11/27/17 17:23	11/21/17	
Nickel	6010C	0.006 J	mg/L	0.010	0.0007	1	11/27/17 17:23	11/21/17	
Potassium	6010C	4.96	mg/L	0.20	0.04	1	11/27/17 17:23	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 17:23	11/21/17	
Silver	6010C	0.002 J	mg/L	0.020	0.0008	1	11/27/17 17:23	11/21/17	
Sodium	6010C	1.9 J	mg/L	2.0	0.03	1	11/27/17 17:23	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 17:23	11/21/17	
Vanadium	6010C	0.012	mg/L	0.010	0.0008	1	11/27/17 17:23	11/21/17	
Zinc	6010C	0.511	mg/L	0.0040	0.0200	1	11/27/17 17:23	11/21/17	

Analytical Report

Client: Teck American Incorporated

Service Request: K1711288 **Date Collected:** 10/16/17 11:25 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00002

Sample Matrix: Soil **Date Received:** 10/18/17 09:30

Sample Name: IC-441-1C-101617 Basis: NA

Lab Code: K1711288-018

SPLP Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed D	ate Extracted	Q
Aluminum	6010C	13.9	mg/L	0.010	0.003	1	11/27/17 17:26	11/21/17	
Antimony	6010C	0.014 J	mg/L	0.020	0.006	1	11/27/17 17:26	11/21/17	
Arsenic	6010C	0.044	mg/L	0.010	0.004	1	11/27/17 17:26	11/21/17	
Barium	6010C	0.23	mg/L	0.20	0.10	1	11/27/17 17:26	11/21/17	
Beryllium	6010C	0.0003 J	mg/L	0.010	0.0002	1	11/27/17 17:26	11/21/17	
Cadmium	6010C	0.007 J	mg/L	0.010	0.0002	1	11/27/17 17:26	11/21/17	
Calcium	6010C	9.2	mg/L	2.0	0.008	1	11/27/17 17:26	11/21/17	
Chromium	6010C	0.005 J	mg/L	0.010	0.002	1	11/27/17 17:26	11/21/17	
Cobalt	6010C	0.004 J	mg/L	0.010	0.0005	1	11/27/17 17:26	11/21/17	
Copper	6010C	0.025	mg/L	0.010	0.002	1	11/27/17 17:26	11/21/17	
Iron	6010C	8.20	mg/L	0.020	0.006	1	11/27/17 17:26	11/21/17	
Lead	6010C	0.382	mg/L	0.010	0.003	1	11/27/17 17:26	11/21/17	
Magnesium	6010C	2.03	mg/L	0.50	0.002	1	11/27/17 17:26	11/21/17	
Manganese	6010C	0.583	mg/L	0.010	0.0005	1	11/27/17 17:26	11/21/17	
Nickel	6010C	0.007 J	mg/L	0.010	0.0007	1	11/27/17 17:26	11/21/17	
Potassium	6010C	7.18	mg/L	0.20	0.04	1	11/27/17 17:26	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 17:26	11/21/17	
Silver	6010C	0.0009 J	mg/L	0.020	0.0008	1	11/27/17 17:26	11/21/17	
Sodium	6010C	1.8 J	mg/L	2.0	0.03	1	11/27/17 17:26	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 17:26	11/21/17	
Vanadium	6010C	0.012	mg/L	0.010	0.0008	1	11/27/17 17:26	11/21/17	
Zinc	6010C	0.583	mg/L	0.0040	0.0200	1	11/27/17 17:26	11/21/17	

Analytical Report

Client: Teck American Incorporated

Service Request: K1711288 **Date Collected:** 10/16/17 12:50 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00002

Sample Matrix:

Soil

Basis: NA

Date Received: 10/18/17 09:30

Sample Name: IC-441-1D-101617 Lab Code: K1711288-019

SPLP Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	6010C	10.7	mg/L	0.010	0.003	1	11/27/17 17:28	11/21/17	
Antimony	6010C	0.011 J	mg/L	0.020	0.006	1	11/27/17 17:28	11/21/17	
Arsenic	6010C	0.035	mg/L	0.010	0.004	1	11/27/17 17:28	11/21/17	
Barium	6010C	0.20 J	mg/L	0.20	0.10	1	11/27/17 17:28	11/21/17	
Beryllium	6010C	ND U	mg/L	0.010	0.0002	1	11/27/17 17:28	11/21/17	
Cadmium	6010C	0.004 J	mg/L	0.010	0.0002	1	11/27/17 17:28	11/21/17	
Calcium	6010C	6.6	mg/L	2.0	0.008	1	11/27/17 17:28	11/21/17	
Chromium	6010C	0.004 J	mg/L	0.010	0.002	1	11/27/17 17:28	11/21/17	
Cobalt	6010C	0.003 J	mg/L	0.010	0.0005	1	11/27/17 17:28	11/21/17	
Copper	6010C	0.021	mg/L	0.010	0.002	1	11/27/17 17:28	11/21/17	
Iron	6010C	6.36	mg/L	0.020	0.006	1	11/27/17 17:28	11/21/17	
Lead	6010C	0.235	mg/L	0.010	0.003	1	11/27/17 17:28	11/21/17	
Magnesium	6010C	1.54	mg/L	0.50	0.002	1	11/27/17 17:28	11/21/17	
Manganese	6010C	0.471	mg/L	0.010	0.0005	1	11/27/17 17:28	11/21/17	
Nickel	6010C	0.004 J	mg/L	0.010	0.0007	1	11/27/17 17:28	11/21/17	
Potassium	6010C	5.69	mg/L	0.20	0.04	1	11/27/17 17:28	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 17:28	11/21/17	
Silver	6010C	0.001 J	mg/L	0.020	0.0008	1	11/27/17 17:28	11/21/17	
Sodium	6010C	1.7 J	mg/L	2.0	0.03	1	11/27/17 17:28	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 17:28	11/21/17	
Vanadium	6010C	0.009 J	mg/L	0.010	0.0008	1	11/27/17 17:28	11/21/17	
Zinc	6010C	0.314	mg/L	0.0040	0.0200	1	11/27/17 17:28	11/21/17	

Analytical Report

Client: Teck American Incorporated **Service Request:** K1711288

Project: August 2017 Sampling SAT Study/B0095010.0005.00002 Date Collected: NA

Sample Matrix: Soil Date Received: NA

Basis: NA

Method Blank **Sample Name:** Lab Code: KQ1717330-02

SPLP Metals

	Analysis								
Analyte Name	Method	Result	Units	MRL	MDL	Dil.	Date Analyzed I	Date Extracted	Q
Aluminum	6010C	0.065	mg/L	0.010	0.003	1	11/27/17 16:04	11/21/17	
Antimony	6010C	ND U	mg/L	0.020	0.006	1	11/27/17 16:04	11/21/17	
Arsenic	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 16:04	11/21/17	
Barium	6010C	ND U	mg/L	0.20	0.10	1	11/27/17 16:04	11/21/17	
Beryllium	6010C	ND U	mg/L	0.010	0.0002	1	11/27/17 16:04	11/21/17	
Cadmium	6010C	ND U	mg/L	0.010	0.0002	1	11/27/17 16:04	11/21/17	
Calcium	6010C	1.8 J	mg/L	2.0	0.008	1	11/27/17 16:04	11/21/17	
Chromium	6010C	ND U	mg/L	0.010	0.002	1	11/27/17 16:04	11/21/17	
Cobalt	6010C	ND U	mg/L	0.010	0.0005	1	11/27/17 16:04	11/21/17	
Copper	6010C	ND U	mg/L	0.010	0.002	1	11/27/17 16:04	11/21/17	
Iron	6010C	0.009 J	mg/L	0.020	0.006	1	11/27/17 16:04	11/21/17	
Lead	6010C	ND U	mg/L	0.010	0.003	1	11/27/17 16:04	11/21/17	
Magnesium	6010C	0.20 J	mg/L	0.50	0.002	1	11/27/17 16:04	11/21/17	
Manganese	6010C	ND U	mg/L	0.010	0.0005	1	11/27/17 16:04	11/21/17	
Nickel	6010C	ND U	mg/L	0.010	0.0007	1	11/27/17 16:04	11/21/17	
Potassium	6010C	0.08 J	mg/L	0.20	0.04	1	11/27/17 16:04	11/21/17	
Selenium	6010C	ND U	mg/L	0.020	0.004	1	11/27/17 16:04	11/21/17	
Silver	6010C	ND U	mg/L	0.020	0.0008	1	11/27/17 16:04	11/21/17	
Sodium	6010C	1.2 J	mg/L	2.0	0.03	1	11/27/17 16:04	11/21/17	
Thallium	6010C	ND U	mg/L	0.010	0.004	1	11/27/17 16:04	11/21/17	
Vanadium	6010C	ND U	mg/L	0.010	0.0008	1	11/27/17 16:04	11/21/17	
Zinc	6010C	ND U	mg/L	0.0040	0.0200	1	11/27/17 16:04	11/21/17	

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: Teck American Incorporated

August 2017 Sampling SAT Study/B0095010.0005.00002

Project Sample Matrix: Soil

Date Received: 10/12/17 **Date Analyzed:** 11/27/17

Service Request: K1711288

Date Collected: 10/10/17

Replicate Sample Summary SPLP Metals

Duplicate

Sample Name: Units: mg/L IC-401-1A-101017 Lab Code: Basis: NA K1711288-001

					Dupiicate			
					Sample			
	Analysis			Sample	KQ1717330-03			
Analyte Name	Method	MRL	MDL	Result	Result	Average	RPD	RPD Limit
Aluminum	6010C	0.010	0.003	20.0	20.1	20.1	<1	20
Antimony	6010C	0.020	0.006	0.045	0.044	0.045	2	20
Arsenic	6010C	0.010	0.004	0.101	0.105	0.103	4	20
Barium	6010C	0.20	0.10	$0.17 \; J$	0.18 J	0.18	6	20
Beryllium	6010C	0.010	0.0002	0.0002 J	0.0003 J	NC	NC	20
Cadmium	6010C	0.010	0.0002	0.004 J	0.004 J	0.004	<1	20
Calcium	6010C	2.0	0.008	3.4	3.4	3.4	<1	20
Chromium	6010C	0.010	0.002	0.004 J	0.004 J	0.004	<1	20
Cobalt	6010C	0.010	0.0005	0.003 J	0.003 J	0.003	<1	20
Copper	6010C	0.010	0.002	0.023	0.024	0.024	4	20
Iron	6010C	0.020	0.006	9.97	10.2	10.1	2	20
Lead	6010C	0.010	0.003	0.371	0.381	0.376	3	20
Magnesium	6010C	0.50	0.002	1.29	1.32	1.31	2	20
Manganese	6010C	0.010	0.0005	0.539	0.541	0.540	<1	20
Nickel	6010C	0.010	0.0007	0.005 J	0.005 J	0.005	<1	20
Potassium	6010C	0.20	0.04	2.25	2.27	2.26	<1	20
Selenium	6010C	0.020	0.004	ND U	ND U	ND	-	20
Silver	6010C	0.020	0.0008	0.004 J	0.001 J	0.003	120 #	20
Sodium	6010C	2.0	0.03	1.9 J	2.0 J	2.0	5	20
Thallium	6010C	0.010	0.004	ND U	ND U	ND	=	20
Vanadium	6010C	0.010	0.0008	0.013	0.013	0.013	<1	20
Zinc	6010C	0.0040	0.0200	0.380	0.391	0.386	3	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

QA/QC Report

Client: Teck American Incorporated

Project: August 2017 Sampling SAT Study/B0095010.0005.00002

Sample Matrix: Soil

Service Request: K1711288 **Date Collected: Date Received:**

10/10/17

Date Analyzed:

10/12/17 11/27/17

Date Extracted:

11/21/17

Matrix Spike Summary SPLP Metals

Sample Name: IC-401-1A-101017 Lab Code:

K1711288-001

Units: Basis:

mg/L NA

Analysis Method: 6010C **Prep Method:** EPA 3010A

> **Matrix Spike** KQ1717330-04

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Aluminum	20.0	20.5	2.00	25 #	75-125
Antimony	0.045	0.431	0.500	77	75-125
Arsenic	0.101	1.09	1.00	99	75-125
Barium	0.17 J	1.17	1.00	100	75-125
Beryllium	ND U	0.049	0.050	97	75-125
Cadmium	0.004 J	0.052	0.050	96	75-125
Calcium	3.4	13.2	10.0	98	75-125
Chromium	0.004 J	0.203	0.200	99	75-125
Cobalt	0.003 J	0.492	0.500	98	75-125
Copper	0.023	0.269	0.250	98	75-125
Iron	9.97	10.6	1.00	64 #	75-125
Lead	0.371	0.838	0.500	93	75-125
Magnesium	1.29	11.0	10.0	97	75-125
Manganese	0.539	1.01	0.500	95	75-125
Nickel	0.005 J	0.488	0.500	96	75-125
Potassium	2.25	12.2	10.0	99	75-125
Selenium	ND U	0.861	1.00	86	75-125
Silver	0.004 J	0.049	0.050	90	75-125
Sodium	1.9 J	11.9	10.0	99	75-125
Thallium	ND U	0.186	0.200	93	75-125
Vanadium	0.013	0.519	0.500	101	75-125
Zinc	0.380	0.856	0.500	95	75-125

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

QA/QC Report

Client: Teck American Incorporated

Service Request: K1711288 **Project:** August 2017 Sampling SAT Study/B0095010.0005.00002 **Date Analyzed:** 11/27/17

Sample Matrix: Soil

Lab Control Sample Summary SPLP Metals

Units:mg/L Basis:NA

Lab Control Sample

KQ1717330-01

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Aluminum	6010C	5.41	5.00	108	80-120
Antimony	6010C	2.03	2.00	102	80-120
Arsenic	6010C	2.58	2.50	103	80-120
Barium	6010C	5.20	5.00	104	80-120
Beryllium	6010C	0.126	0.125	101	80-120
Cadmium	6010C	1.25	1.25	100	80-120
Calcium	6010C	14.9	12.5	119	80-120
Chromium	6010C	0.510	0.500	102	80-120
Cobalt	6010C	1.25	1.25	100	80-120
Copper	6010C	0.631	0.625	101	80-120
Iron	6010C	2.60	2.50	104	80-120
Lead	6010C	2.47	2.50	99	80-120
Magnesium	6010C	13.0	12.5	104	80-120
Manganese	6010C	1.25	1.25	100	80-120
Nickel	6010C	1.24	1.25	99	80-120
Potassium	6010C	13.1	12.5	105	80-120
Selenium	6010C	2.24	2.50	90	80-120
Silver	6010C	0.613	0.625	98	80-120
Sodium	6010C	14.2	12.5	114	80-120
Thallium	6010C	2.41	2.50	97	80-120
Vanadium	6010C	1.30	1.25	104	80-120
Zinc	6010C	1.28	1.25	102	80-120

Soil Amendment Technology Evaluation Study

Phase IA: Test Plot Characterization

Nicholas Basta Professor of Soil and Environmental Chemistry

> Shane Whitacre Research Associate

Soil Water Environmental Laboratory School of Environment and Natural Resources

FACILITY

The Ohio State University (OSU) Soil Water Environmental Laboratory is located at 2021 Coffey Rd., Columbus OH, 43210 in the School of Environment and Natural Resources. The facility exists to meet the needs of research grants, individuals, companies, state and federal agencies in regard to physical and chemical analysis of soil, water, plant, and other environmental samples. Professor Nick Basta, Director

SCOPE OF WORK

As part of Phase 1A of the Soil Amendment Technology Evaluation Study (SATES), OSU performed analysis required to characterize soils on the test plots according to Table 3 of the Phase 1 Work Plan (Ramboll Environ, 2017). Test plots were subject to two initial field characterization efforts: an initial screening effort and a second detailed characterization effort. The initial effort utilized discrete samples collected from near-surface soils and included non-bulk samples as well as intact cores. The second detailed characterization effort utilized incremental composite (IC) bulk samples from near-surface soils.

METHODS

Sample collection was conducted according to the Phase I Work Plan (Ramboll Environ, 2017). A summary of samples provided to OSU is provided in Appendix A.

Discrete Samples

Bulk soil samples and intact soil cores were collected and sent by Arcadis U.S., Inc. directly to The Ohio State University. Bulk soil samples were processed to < 2mm and analyzed for total elemental content by acid digestion using USEPA Method 3051a (USEPA, 2007a) followed by Inductively couple plasma-atomic emission spectrometry according to USEPA Method 6010C (USEPA, 2007b). Intact soil cores were analyzed for moisture holding capacity according to Cassel and Nielsen (1986).

Incremental Composite Samples

Incremental composite samples were collected by Arcadis U.S., Inc. and shipped to ALS Laboratories for homogenization and sieving prior shipping to OSU. The samples were received in three size fractions; bulk, <2mm, and, 150μm. Bulk samples were analyzed for pH according to Thomas (1996), electrical conductivity/salinity according to Rhoades (1996) which is consistent with APHA method 2510, and particle size according to Gee and Bauder (1986) which is consistent with ASTM method D422. Samples sieved to < 2mm were analyzed for total elemental content by acid digestion using USEPA Method 3051a (USEPA, 2007a) followed by USEPA Method 6010C (USEPA, 2007b), chloride and sulfate according to USEPA Method 300.0 (Pfaff, 1993), total carbon according to Neslon and Sommers (1996), and total nitrogen according to Bremner (1996). Samples sieved to <150μm were analyzed for total elemental content by acid digestion using USEPA Method 3051a (USEPA, 2007a) followed by USEPA Method 6010C (USEPA, 2007b), bioaccessible arsenic and lead according USEPA Method 9200

(2008) at pH 1.5 as well as at pH 2.5 followed by USEPA Method 6010C (USEPA, 2007b), and Mehlich 3 extractable phosphorus and lead (Mehlich, 1984) by USEPA Method 6010C (USEPA, 2007b).

QUALITY CONTROL

Quality Control Measures

Control Soils: A certified reference material or laboratory reference material that goes through the same extraction/preparation procedure as the samples. The analyte composition of the laboratory control sample is known included in each sample preparation batch.

Matrix Spike: A duplicate sample is spiked with a known analyte concentration prior to extraction and run through the complete procedure in order to provide information about the effect of the sample matrix on the measurement methodology.

Reagent Blank: The Reagent Blank is a sample that contains only the reagents used in the extraction procedure. The preparation blank is processed through the same preparation procedures as the samples and therefore gives an indication of any contamination picked up during the sample preparation process.

Duplicate sample: A duplicate of one sample per batch is processed through the same preparation procedures as the samples to determine reproducibility within each batch.

Reporting Limit: Reporting limit (RL) is set at the lowest concentration in a calibration curve with an independently calculated accuracy of +/- 15%.

Method Detection Limit: Method detection limits (MDL) are calculated for specific methods and consequent conditions of that method developed for analysis on ICP. The method detection limit is determined as three times the standard deviation of the signal of 10 blanks solutions.

Hold Time: Hold times (days) are determined as date of analysis – collection date.

Quality Control Limits and Flags

Control Soils

- Recovery: +/- 20% or within prediction interval of certified value
- Flag: crm
- Frequency: 1/batch

Matrix Spike

- Recovery: +/- 25%
- Flag: spk
- Frequency: 1/batch

Reagent Blank

- Method blank <RL or <10X sample concentration
- Flag: blk

• Frequency: 1/batch

Duplicate Sample

- Duplicate relative percent difference +/- 20%
- Flag: dup
- Frequency: 1/batch

Reporting Limit

- Analyte concentration > RL
- Flag: RL
- Frequency: Every Sample

Method Detection Limit

- Analyte concentration >MDL
- Flag: MDL
- Frequency: Every Sample

Between MDL and RL

- If an analyte concentration is between >MDL and <RL, a flag will be assigned to denote this occurance
- Flag: rl
- Frequency: Every Sample

Hold Time

- Hold times were established in Phase I Work Plan (Ramboll Environ, 2017). The only analysis under this scope of work that has USEPA Contract Laboratory Program (CLP) designated hold times is for metals (USEPA, 2014). The hold times in the Phase I work plan are more conservative than the 180 days designated for metal analysis under the USEPA CLP. As a result, while hold times may be exceeded for some analysis under the current statement of work, the results are valid and in no way impact the Soil Amendment Technology Evaluation Study data quality objectives.
- Flag: ht

SAMPLE RESULTS

Discrete Sample

Detailed bulk and core sample results for total elemental content are provided in Appendix B and associated Reporting Limts (RL) and Method Detection Limits (MDL) by method/analyte in appendix D. Summary statistics for total elemental content (samples SA_1 to SA_100) are provided in Table 1 and moisture holding capacity (samples SA_101 to SA_12) in Table 2.

Table 1. Summary of	total elemen	ntal content	in discrete s	amples
d_labresult.analyte	Unit	Min	Mean	Max
Aluminum	mg/kg	4766	16664	25867
Antimony	mg/kg	1.15	7.85	47.6
Arsenic	mg/kg	1.72	14.98	75.7
Barium	mg/kg	47.6	152	369
Beryllium	mg/kg	0.12	0.54	0.83
Cadmium	mg/kg	0.24	4.09	27.0
Calcium	mg/kg	1655	4016	16525
Chromium	mg/kg	11.7	27.5	46.7
Cobalt	mg/kg	1.99	6.53	11.6
Copper	mg/kg	6.80	22.9	94.0
Iron	mg/kg	8764	21219	31675
Lead	mg/kg	2.90	146	1161
Magnesium	mg/kg	1120	3246	8032
Manganese	mg/kg	188	539	1568
Nickel	mg/kg	5.00	14.8	28.3
Phosphorus	mg/kg	569	1313	3202
Potassium	mg/kg	667	1461	3431
Selenium	mg/kg	1.24	3.12	5.44
Silver	mg/kg	0.20^{a}	0.20^{a}	0.20^{a}
Sodium	mg/kg	87.0	214	510
Thallium	mg/kg	0.262 ^a	0.64	1.37
Vanadium	mg/kg	20.0	52.6	84.1
Zinc	mg/kg	26.5	237	1222

^aAnalyte< MDL, value of MDL reported

Table 2. Summary of water storage capacity of intact core samples											
d_labresult.analyte	Unit	Min	Mean	Max							
WatStorCap	%	29.7	42.3	58.4							

Incremental Composite Samples

Detailed sample results for pH, electrical conductivity/salinity, particle size, total elemental content, chloride, sulfate, total carbon, total nitrogen, and bioaccessible arsenic and lead, and Mehlich 3 extractable phosphorus and lead are provided in Appendix C and RLs add MDLs by method/analyte in Appendix D. Summary statistics for IC samples are provided in Table 3.

Table 3. Summary statistics						
d_labresult.method_code	d_labresult.analyte	Size	Unit	Min	Mean	max
SM2510B	Conductivity	Bulk	mS/m	4.5	8.3	15.0
рН	рН	Bulk		4.6	5.1	6.2
D422	Fines	Bulk	%	2.5	3.5	4.5
D422	Gravel	Bulk	%	1.3	25.5	44.3
D422	Sand	Bulk	%	57.6	75.0	84.7
D422	Silt	Bulk	%	12.8	21.5	39.3
EPA 6010	Aluminum	2mm	mg/kg	10649.4	15906.5	25983.4
EPA 6010	Antimony	2mm	mg/kg	4.9	18.1	41.7
EPA 6010	Arsenic	2mm	mg/kg	12.6	34.0	58.0
EPA 6010	Barium	2mm	mg/kg	77.5	130.5	222.0
EPA 6010	Beryllium	2mm	mg/kg	0.0	0.0	0.2
EPA 6010	Cadmium	2mm	mg/kg	3.6	9.3	13.6
EPA 6010	Calcium	2mm	mg/kg	2860.4	4700.1	9720.8
EPA 6010	Chromium	2mm	mg/kg	15.4	33.6	53.2
EPA 6010	Cobalt	2mm	mg/kg	4.0	6.5	11.0
EPA 6010	Copper	2mm	mg/kg	15.0	32.5	59.4
EPA 6010	Iron	2mm	mg/kg	11358.6	20790.6	26556.5
EPA 6010	Lead	2mm	mg/kg	132.7	514.5	1087.3
EPA 6010	Magnesium	2mm	mg/kg	2303.0	3332.0	6122.6
EPA 6010	Manganese	2mm	mg/kg	322.4	543.9	870.5
EPA 6010	Nickel	2mm	mg/kg	8.3	13.8	24.3
EPA 6010	Phosphorus	2mm	mg/kg	893.2	1390.1	2950.9
EPA 6010	Potassium	2mm	mg/kg	1126.5	1778.8	3790.1
EPA 6010	Selenium	2mm	mg/kg	0.7	1.1	1.9
EPA 6010	Silver	2mm	mg/kg	0.2^{a}	0.2^{a}	0.2^{a}
EPA 6010	Sodium	2mm	mg/kg	154.7	262.3	541.0
EPA 6010	Thallium	2mm	mg/kg	0.3^{a}	0.6	0.9
EPA 6010	Vanadium	2mm	mg/kg	25.4	52.0	68.0
EPA 6010	Zinc	2mm	mg/kg	173.6	389.1	719.4
NELSON82	Carbon_total	2mm	%	2.3	5.6	10.5
BREMNER82	Nitrogen_total	2mm	%	0.1	0.3	0.5
EPA_300.0	Chloride	2mm	mg/kg	15.9	18.4	29.1
EPA_300.0	Sulfate	2mm	mg/kg	30.0	57.8	100.2

Table 3 Cont. Summary sta	tistics from incrementa	l compos	ite (IC) s	samples.			
d_labresult.method_code	d_labresult.analyte	Size	Unit	Min	Mean	max	
EPA 6010	Aluminum	150um	mg/kg	19802.8	24005.4	26893.4	
EPA 6010	Antimony	150um	mg/kg	8.6	28.0	54.0	
EPA 6010	Arsenic	150um	mg/kg	33.3	69.8	117.1	
EPA 6010	Barium	150um	mg/kg	204.0	259.6	337.9	
EPA 6010	Beryllium	150um	mg/kg	0.7	0.8	0.9	
EPA 6010	Cadmium	150um	mg/kg	10.4	18.8	29.6	
EPA 6010	Calcium	150um	mg/kg	3587.2	5975.8	10586.4	
EPA 6010	Chromium	150um	mg/kg	19.1	34.5	54.3	
EPA 6010	Cobalt	150um	mg/kg	7.0	8.9	11.1	
EPA 6010	Copper	150um	mg/kg	47.4	67.0	86.5	
EPA 6010	Iron	150um	mg/kg	17126.1	25950.1	39862.3	
EPA 6010	Lead	150um	mg/kg	419.4	1011.0	1787.5	
EPA 6010	Magnesium	150um	mg/kg	2501.7	3164.4	4239.5	
EPA 6010	Manganese	150um	mg/kg	748.4	976.1	1243.9	
EPA 6010	Nickel	150um	mg/kg	12.3	17.1	23.3	
EPA 6010	Phosphorus	150um	mg/kg	1849.8	2353.6	3373.0	
EPA 6010	Potassium	150um	mg/kg	1837.9	2245.1	3474.8	
EPA 6010	Selenium	150um	mg/kg	2.7	3.6	4.9	
EPA 6010	Silver	150um	mg/kg	0.2^{a}	0.2ª	0.2^{a}	
EPA 6010	Sodium	150um	mg/kg	428.9	539.1	752.8	
EPA 6010	Thallium	150um	mg/kg	0.5	1.0	1.6	
EPA 6010	Vanadium	150um	mg/kg	39.7	64.9	106.6	
EPA 6010	Zinc	150um	mg/kg	474.3	714.0	882.4	
EPA 6010_9200Bio1.5	Arsenic	150um	mg/kg	3.2	12.8	25.0	
EPA 6010_9200Bio1.5	Lead	150um	mg/kg	289.9	758.6	1399.6	
EPA 6010_9200Bio2.5	Arsenic	150um	mg/kg	0.7	5.0	11.4	
EPA 6010_9200Bio2.5	Lead	150um	mg/kg	111.0	361.4	689.9	
EPA 6010_MEHLICH3	Lead	150um	mg/kg	106.4	255.5	453.9	
EPA 6010_MEHLICH3	Phosphorus	150um	mg/kg	28.7	104.2	205.9	
Bioaccess1.5	Arsenic	150um	%	8.6	18.0	24.7	
Bioaccess1.5	Lead	150um	%	63.2	74.8	82.2	
Bioaccess2.5	Arsenic	150um	%	2.0	6.8	10.9	
Bioaccess2.5	Lead	150um	%	24.5	34.2	41.6	

^aAnalyte< MDL, value of MDL reported

SWEL - Soil Water Environmental Lab

QUALITY CONTROL RESULTS

EPA6010

Quality control results for EPA6010 are presented in Table 4.

	SA_36	SA_36			SA_72	SA_72			SA_10	SA_10			SA_13	SA_13			SA_13			
ab ID	dup	spk	CRM	blk	dup	spk	CRM	blk	0 dup	0 spk	CRM	blk	5	5	CRM	blk	5	<2mm	CRM	blan
atch	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5
QC	RPD	rec %	rec %	Sample 43	RPD	rec %	rec %	Sample 83	RPD	rec %	rec %	Sample 114	RPD	rec %	rec %	Sample 138	RPD	rec %	rec %	Sam 29
.g	1	90	142	-0.01	5	86	138	-0.01	3	71	137	-0.01	1	69	135	-0.01	22	63	117	0.0
Al .	9		134	0.05	5		152	0.10	2		179	0.17	0		278	0.14	5		246	0.1
AS	27	113	117	0.00	6	111	116	0.00	5	108	113	0.00	2	106	113	0.00	11	112	115	0.0
Ba	13	119	122	0.00	11	111	121	0.00	6	110	122	0.00	1	106	127	0.00	7	97	105	0.0
3e	11		140	0.00	10		140	0.00	1		137	0.00	1		137	0.00	6		129	0.0
Ca	7		114	-0.05	17		113	-0.02	4		111	-0.05	0		110	0.00	6		113	0.0
Cd	7		116	0.00	11		105	0.00	7		106	0.00	0		112	0.00	7		113	0.0
Со	13	101	106	0.00	8	100	105	0.00	2	97	103	0.00	3	95	104	0.00	4	104	109	0.0
Cr	7	118	123	-0.01	28	105	126	0.00	1	128	125	0.00	0	102	135	0.00	48	79	135	0.0
Cu	7	119	112	0.00	6	108	110	0.00	3	108	108	0.00	1	101	109	0.00	5	106	108	0.0
₹e	7		109	0.16	11		109	0.12	2		107	0.14	2		109	0.11	4		106	0.1
ζ	11		150	-0.03	10		150	-0.08	18		158	-0.12	0		176	-0.12	1		182	-0.1
Иg	5		105	0.01	0		104	0.01			105	0.03	0		109	0.01			96	0.0
Лn	7		126	0.00	0		121	0.00	3		120	0.00	0		121	0.00	4		116	0.0
Na	6		118	-0.12	13		117	-0.13	2		117	-0.15	1		116	-0.14	16			0.0
Ni	20	109	110	0.00	2	107	111	0.00	3	105	110	0.00	1	101	113	0.00	7	108	113	0.0
)	11			0.01	13			0.00	4			0.01	0			0.00	4			0.0
Pb	21	108	110	0.00	12	104	102	0.00	11	102	105	0.00	0	83	113	0.00	8	102	111	0.0
Sb	7	97	181	0.00	8	101	213	0.01	1	96	161	0.01	14	95	131	0.00	10	107	185	0.0
Se	22	120	121	0.02	10	117	120	0.02	23	113	118	0.03	40	112	118	0.02	42	114	112	0.0
Π	6	104	105	0.01	51	104	102	0.00	61	99	101	0.00	20	98	99	0.01	35	99	98	0.0
V	1	107		0.00	15	99		0.00	2	105		0.00	4	103		0.00	2	101		0.0
Zn	12	118	112	0.00	13	97	111	0.00	3	109	109	0.00	1	78	110	0.01	6	109	116	0.0

EPA 6010_9200Bio1.5 and EPA 6010_9200Bio2.5

Quality control results for EPA 6010_9200Bio1.5 and EPA 6010_9200Bio2.5 are presented in Table 5.

Table5. EPA 6010_9200Bio1	.5 and EPA 6010	0_9200Bio2.5		
d_labresult.method_code	Batch	Element	As	Pb
EPA 6010_9200Bio1.5	1	dup RPD	3	0
EPA 6010_9200Bio1.5	2	dup RPD	3	3
EPA 6010_9200Bio1.5	3	dup RPD	2	1
EPA 6010_9200Bio1.5	1	Dup SPK % rec	98	89
EPA 6010_9200Bio1.5	2	Dup SPK % rec	100	94
EPA 6010_9200Bio1.5	3	Dup SPK % rec		96
EPA 6010_9200Bio1.5	1	Blk	0.01	0.03
EPA 6010_9200Bio1.5	2	Blk	0.00	0.04
EPA 6010_9200Bio1.5	3	Blk	0.04	0.01
EPA 6010_9200Bio1.5	1	Blk	0.01	0.03
EPA 6010_9200Bio1.5	1	Blk SPK % rec	115	105
EPA 6010_9200Bio1.5	2	Blk SPK % rec	114	104
EPA 6010_9200Bio1.5	3	Blk SPK % rec		107
EPA 6010_9200Bio1.5	1	SRM 2711a %	32.94	64.86
EPA 6010_9200Bio1.5	2	SRM 2711a %	31.95	61.86
EPA 6010_9200Bio1.5	3	SRM 2711a %	32.73	62.91
EPA 6010_9200Bio2.5	1	dup RPD	3	1
EPA 6010_9200Bio2.5	2	dup RPD	35	2
EPA 6010_9200Bio2.5	3	dup RPD	7	1
EPA 6010_9200Bio2.5	1	Dup SPK % rec	93	78
EPA 6010_9200Bio2.5	2	Dup SPK % rec	96	60
EPA 6010_9200Bio2.5	3	Dup SPK % rec	92	64
EPA 6010_9200Bio2.5	1	Blk	0.00	0.03
EPA 6010_9200Bio2.5	2	Blk	0.00	0.01
EPA 6010_9200Bio2.5	3	Blk	0.00	0.01
EPA 6010_9200Bio2.5	1	Blk	0.00	0.03
EPA 6010_9200Bio2.5	1	Blk SPK % rec	114	98
EPA 6010_9200Bio2.5	2	Blk SPK % rec	113	101
EPA 6010_9200Bio2.5	3	Blk SPK % rec	114	102
EPA 6010_9200Bio2.5	1	SRM 2711a %	9.03	52.12
EPA 6010_9200Bio2.5	2	SRM 2711a %	9.35	52.72
EPA 6010_9200Bio2.5	3	SRM 2711a %	9.40	53.20

EPA6010_MEHLICH3, D422, PH, SM2510B, EPA300.0, NELSON82, and BREMNER82

Quality control results for EPA6010_MEHLICH3, D422, PH, SM2510B, EPA300.0, NELSON82, and BREMNER82 are presented in Table 6.

Table 6. Method QC summary for EPA610_MEHLICH3, D422, PH/SM2	2510B, E	PA300.0, NELS	ON82, a	nd BRE	MNER8	2							
d_labresult.method_code	Batch	QC	P	Pb	Sand	Silt	Clay	pН	EC	Cl	SO4	N	C
EPA 6010_MEHLICH3	8	dup RPD	6	1									
EPA 6010_MEHLICH3	10	dup RPD	1	3									
EPA 6010_MEHLICH3	12	dup RPD	1	0									
EPA 6010_MEHLICH3	8	chk std % rec	105	106									
EPA 6010_MEHLICH3	9	chk std % rec	106	106									
EPA 6010_MEHLICH3	10	chk std % rec	105	102									
EPA 6010_MEHLICH3	11	chk std % rec	106	101									
EPA 6010_MEHLICH3	12	chk std % rec	107	100									
EPA 6010_MEHLICH3	1	Blk	0.060	0.004									
EPA 6010_MEHLICH3	3	Blk	0.028	0.006									
EPA 6010_MEHLICH3	5	Blk	0.030	0.006									
EPA 6010_MEHLICH3	7	Blk	0.025	0.004									
EPA 6010_MEHLICH3	9	Blk	0.032	0.016									
EPA 6010_MEHLICH3	11	Blk	0.028	0.008									
EPA 6010_MEHLICH3	13	Blk	0.014	0.002									
D422	1	RPD			0	3	20						
D422	1	chk std % rec			96	105	96						
pH/SM2510B	1	dup RPD						0.2	1.3				
pH/SM2510B	1	chk std % rec						93.3	93.0				
EPA300.0	1	dup RPD								6	5		
EPA300.0	1	spk Rec %								93	104		
EPA300.0	1	Blk								0.0	0.0		<u> </u>
NELSON82/BREMNER82	1	Blk										0.0	0.0
NELSON82/BREMNER82	1	chk std % rec										102	98
NELSON82/BREMNER82	1	chk std % rec										95	102
NELSON82/BREMNER82	1	chk std % rec										97	101
NELSON82/BREMNER82	1	chk std % rec										102	98
NELSON82/BREMNER82	1	chk std % rec										95	101
NELSON82/BREMNER82	1	chk std % rec										101	101

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	Discrete/	Collection	Collection	Received	OSU Lab
Sample ID	Discrete Core/IC	Date	Time	Date	ID
D-401-1C-101317-0-2	Discrete	10/13/2017	1059	10/17/2017	SA_1
D-401-1A-101317-0-2	Discrete	10/13/2017	1040	10/17/2017	SA_2
D-401-1B-101317-0-2	Discrete	10/13/2017	1051	10/17/2017	SA_3
D-401-2B-101317-10-12	Discrete	10/13/2017	1016	10/17/2017	SA_4
D-401-2D-101317-10-12	Discrete	10/13/2017	1010	10/17/2017	SA_5
D-401-1A-101317-2-4	Discrete	10/13/2017	1041	10/17/2017	SA_6
D-401-1B-101317-2-4	Discrete	10/13/2017	1052	10/17/2017	SA_7
D-401-1D-101317-0-2	Discrete	10/13/2017	1116	10/17/2017	SA_8
D-401-1D-101317-2-4	Discrete	10/13/2017	1117	10/17/2017	SA_9
D-401-1C-101317-2-4	Discrete	10/13/2017	1100	10/17/2017	SA_10
D-401-1D-101317-6-8	Discrete	10/13/2017	1119	10/17/2017	SA_11
D-401-1A-101317-4-6	Discrete	10/13/2017	1042	10/17/2017	SA_12
D-401-1B-101317-4-6	Discrete	10/13/2017	1053	10/17/2017	SA_13
D-401-1C-101317-4-6	Discrete	10/13/2017	1101	10/17/2017	SA_14
D-401-1D-101317-4-6	Discrete	10/13/2017	1118	10/17/2017	SA_15
D-401-1C-101317-8-10	Discrete	10/13/2017	1103	10/17/2017	SA_16
D-401-1D-101317-8-10	Discrete	10/13/2017	1120	10/17/2017	SA_17
D-401-1A-101317-6-8	Discrete	10/13/2017	1043	10/17/2017	SA_18
D-401-1B-101317-6-8	Discrete	10/13/2017	1054	10/17/2017	SA_19
D-401-1C-101317-6-8	Discrete	10/13/2017	1102	10/17/2017	SA_20
D-401-1A-101317-10-12	Discrete	10/13/2017	1045	10/17/2017	SA_21
D-401-1C-101317-10-12	Discrete	10/13/2017	1104	10/17/2017	SA_22
D-401-1D-101317-10-12	Discrete	10/13/2017	1121	10/17/2017	SA_23
D-401-1A-101317-8-10	Discrete	10/13/2017	1044	10/17/2017	SA_24
D-401-1B-101317-8-10	Discrete	10/13/2017	1055	10/17/2017	SA_25
D-401-2C-101317-2-4D	Discrete	10/13/2017	1021	10/17/2017	SA_26
D-258-3C-101317-2-4D	Discrete	10/13/2017	1314	10/17/2017	SA_27
D-441-1B-101317-2-4D	Discrete	10/13/2017	1442	10/17/2017	SA_28
D-401-1B-101317-2-4D	Discrete	10/13/2017	1052	10/17/2017	SA_29
D-401-1B-101317-10-12	Discrete	10/13/2017	1056	10/17/2017	SA_30
D-441-1B-101317-4-6	Discrete	10/13/2017	1444	10/17/2017	SA_31
D-441-1B-101317-6-8	Discrete	10/13/2017	1445	10/17/2017	SA_32
D-441-1B-101317-8-10	Discrete	10/13/2017	1446	10/17/2017	SA_33
D-441-1D-101317-0-2	Discrete	10/13/2017	1450	10/17/2017	SA_34
D-441-1D-101317-2-4	Discrete	10/13/2017	1451	10/17/2017	SA_35
D-441-1C-101317-8-10	Discrete	10/13/2017	1439	10/17/2017	SA_36
D-441-1C-101317-10-12	Discrete	10/13/2017	1440	10/17/2017	SA_37



Appendix A
Summary of Samples Received by OSU

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	Discrete/	Collection	Collection	Received	OSU Lab
Sample ID	Discrete Core/IC	Date	Time	Date	ID
D-441-1B-101317-0-2	Discrete	10/13/2017	1441	10/17/2017	SA_38
D-441-1B-101317-0-2	Discrete	10/13/2017	1442	10/17/2017	SA_39
D-441-1B-101317-10-12	Discrete	10/13/2017	1447	10/17/2017	SA_39 SA_40
D-258-3A-101317-10-12	Discrete	10/13/2017	1340	10/17/2017	SA_41
D-441-1C-101317-0-2	Discrete	10/13/2017	1435	10/17/2017	SA_42
D-441-1C-101317-0-2	Discrete	10/13/2017	1436	10/17/2017	SA_43
D-441-1C-101317-4-6	Discrete	10/13/2017	1437	10/17/2017	SA_44
D-441-1C-101317-6-8	Discrete	10/13/2017	1438	10/17/2017	SA_45
D-258-3A-101317-0-2	Discrete	10/13/2017	1335	10/17/2017	SA_46
D-258-3A-101317-0-2 D-258-3A-101317-2-4	Discrete	10/13/2017	1336	10/17/2017	SA_47
D-258-3A-101317-4-6	Discrete	10/13/2017	1337	10/17/2017	SA_48
D-258-3A-101317-6-8	Discrete	10/13/2017	1337	10/17/2017	SA_49
D-258-3A-101317-8-10	Discrete	10/13/2017	1339	10/17/2017	SA_49 SA_50
D-258-3D-101317-2-4	Discrete	10/13/2017	1339	10/17/2017	SA_50 SA_51
D-258-3D-101317-2-4 D-258-3D-101317-4-6	Discrete	10/13/2017	1329	10/17/2017	SA_51 SA_52
D-258-3D-101317-6-8	Discrete	10/13/2017	1331	10/17/2017	SA_53
D-258-3D-101317-8-10	Discrete	10/13/2017	1331	10/17/2017	SA_53 SA_54
D-258-3D-101317-8-10 D-258-3D-101317-10-12	Discrete	10/13/2017	1332	10/17/2017	SA_55
D-258-3B-101317-4-6	Discrete	10/13/2017	1322	10/17/2017	SA_56
D-258-3B-101317-6-8	Discrete	10/13/2017	1323	10/17/2017	SA_57
D-258-3B-101317-8-10	Discrete	10/13/2017	1323	10/17/2017	SA_57 SA_58
D-258-3B-101317-10-12	Discrete	10/13/2017	1324	10/17/2017	SA_59
D-258-3D-101317-0-2	Discrete	10/13/2017	1323	10/17/2017	SA_60
D-401-2A-101317-8-10	Discrete	10/13/2017	1024	10/17/2017	SA_61
D-401-2R-101317-8-10 D-401-2B-101317-8-10	Discrete	10/13/2017	1024	10/17/2017	SA_62
D-401-2D-101317-8-10	Discrete	10/13/2017	1013	10/17/2017	SA_63
D-401-2C-101317-10-12	Discrete	10/13/2017	1003	10/17/2017	SA_64
D-401-2A-101317-10-12	Discrete	10/13/2017	1033	10/17/2017	SA_65
D-401-2C-101317-6-8	Discrete	10/13/2017	1023	10/17/2017	SA_66
D-401-2A-101317-6-8	Discrete	10/13/2017	1031	10/17/2017	SA_67
D-401-2B-101317-6-8	Discrete	10/13/2017	1023	10/17/2017	SA_68
D-401-2D-101317-6-8	Discrete	10/13/2017	1014	10/17/2017	SA_69
D-401-2C-101317-8-10	Discrete	10/13/2017	1008	10/17/2017	SA_09 SA_70
D-401-2C-101317-8-10 D-401-2D-101317-2-4	Discrete	10/13/2017	1032	10/17/2017	SA_70 SA_71
D-401-2C-101317-4-6	Discrete	10/13/2017	1000	10/17/2017	SA_71 SA_72
D-401-2C-101317-4-6	Discrete	10/13/2017	1030	10/17/2017	SA_72 SA_73
D-401-2A-101317-4-6	Discrete	10/13/2017	1022	10/17/2017	SA_73 SA_74
D-401-2D-101317-4-6	Discrete	10/13/2017	1013	10/17/2017	
D-401-2D-101317-4-0	Discrete	10/13/2017	1007	10/1//201/	SA_75



Appendix A Summary of Samples Received by OSU

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	Discrete/	Collection	Collection	Received	OSU Lab
Sample ID	Discrete Core/IC	Date	Time	Date	ID
D-401-2B-101317-0-2	Discrete	10/13/2017	1011	10/17/2017	SA_76
D-401-2D-101317-0-2	Discrete	10/13/2017	1005	10/17/2017	SA_77
D-401-2C-101317-2-4	Discrete	10/13/2017	1029	10/17/2017	SA_78
D-401-2A-101317-2-4	Discrete	10/13/2017	1021	10/17/2017	SA_79
D-401-2B-101317-2-4	Discrete	10/13/2017	1012	10/17/2017	SA_80
D-258-3C-101317-4-6	Discrete	10/13/2017	1316	10/17/2017	SA_81
D-258-3C-101317-2-4	Discrete	10/13/2017	1314	10/17/2017	SA_82
D-258-3C-101317-0-2	Discrete	10/13/2017	1313	10/17/2017	SA_83
D-401-2C-101317-0-2	Discrete	10/13/2017	1028	10/17/2017	SA_84
D-401-2A-101317-0-2	Discrete	10/13/2017	1020	10/17/2017	SA_85
D-258-3B-101317-2-4	Discrete	10/13/2017	1321	10/17/2017	SA_86
D-258-3B-101317-0-2	Discrete	10/13/2017	1320	10/17/2017	SA_87
D-258-3C-101317-10-12	Discrete	10/13/2017	1319	10/17/2017	SA_88
D-258-3C-101317-8-10	Discrete	10/13/2017	1318	10/17/2017	SA_89
D-258-3C-101317-6-8	Discrete	10/13/2017	1317	10/17/2017	SA_90
D-441-1D-101317-4-6	Discrete	10/13/2017	1452	10/17/2017	SA_91
D-441-1D-101317-6-8	Discrete	10/13/2017	1453	10/17/2017	SA_92
D-441-1D-101317-8-10	Discrete	10/13/2017	1454	10/17/2017	SA_93
D-441-1D-101317-10-12	Discrete	10/13/2017	1455	10/17/2017	SA_94
D-441-1A-101317-0-2	Discrete	10/13/2017	1458	10/17/2017	SA_95
D-441-1A-101317-2-4	Discrete	10/13/2017	1459	10/17/2017	SA_96
D-441-1A-101317-4-6	Discrete	10/13/2017	1500	10/17/2017	SA_97
D-441-1A-101317-6-8	Discrete	10/13/2017	1501	10/17/2017	SA_98
D-441-1A-101317-8-10	Discrete	10/13/2017	1503	10/17/2017	SA_99
D-441-1A-101317-10-12	Discrete	10/13/2017	1503	10/17/2017	SA_100
D-401-1C-100417-0-6	Discrete Core	10/4/2017	0940	10/13/2017	SA_101
D-401-2B-100517-0-6	Discrete Core	10/5/2017	1105	10/13/2017	SA_102
D-401-2C-100517-0-6	Discrete Core	10/5/2017	1215	10/13/2017	SA_103
D-258-3D-100717-0-6	Discrete Core	10/7/2017	0915	10/13/2017	SA_104
D-441-1A-100617-0-6	Discrete Core	10/6/2017	0955	10/13/2017	SA_105
D-258-3C-100717-0-6	Discrete Core	10/7/2017	0942	10/13/2017	SA_106
D-401-2A-100517-0-6	Discrete Core	10/5/2017	1009	10/13/2017	SA_107
D-401-2D-100517-0-6	Discrete Core	10/5/2017	1305	10/13/2017	SA_108
D-258-3A-100717-0-6	Discrete Core	10/7/2017	1005	10/13/2017	SA_109
D-441-1D-100617-0-6	Discrete Core	10/6/2017	1315	10/13/2017	SA_110
D-441-1B-100617-0-6	Discrete Core	10/6/2017	1147	10/13/2017	SA_111
D-401-1A-100417-0-6	Discrete Core	10/4/2017	1120	10/13/2017	SA_112
D-441-1C-100617-0-6	Discrete Core	10/6/2017	1105	10/13/2017	SA_113



Appendix A
Summary of Samples Received by OSU

	Discrete/	Collection	Collection	Received	OSU Lab
Sample ID	Discrete Core/IC	Date	Time	Date	ID
D-401-1D-100417-0-6	Discrete Core	10/4/2017	1400	10/13/2017	SA_114
D-401-1B-100417-0-6	Discrete Core	10/4/2017	1300	10/13/2017	SA_115
D-258-3B-100717-0-6	Discrete Core	10/7/2017	1028	10/13/2017	SA_116
IC-401-1A-101017	IC	10/10/2017	1058	11/9/2017	SA_117
IC-401-1B-101017	IC	10/10/2017	1055	11/9/2017	SA_118
IC-401-1C-101117	IC	10/11/2017	1023	11/9/2017	SA_119
IC-401-1C-101117 -D	IC	10/11/2017	1235	11/9/2017	SA_120
IC-401-1D-101117	IC	10/11/2017	1400	11/9/2017	SA_121
IC-401-2B-101117	IC	10/11/2017	1538	11/9/2017	SA_122
IC1-401-2A-101217	IC	10/12/2017	0920	11/9/2017	SA_123
IC2-401-2A-101217	IC	10/12/2017	1015	11/9/2017	SA_124
IC3-401-2A-101217	IC	10/12/2017	1055	11/9/2017	SA_125
IC-401-2C-101217	IC	10/12/2017	1250	11/9/2017	SA_126
IC-401-2D-101217	IC	10/12/2017	1400	11/9/2017	SA_127
IC-258-3A-101717	IC	10/17/2017	0840	11/9/2017	SA_128
IC-258-3B-101717	IC	10/17/2017	0915	11/9/2017	SA_129
IC-258-3C-101717	IC	10/17/2017	0950	11/9/2017	SA_130
IC-258-3D-101717	IC	10/17/2017	1020	11/9/2017	SA_131
IC-441-1A-101617	IC	10/16/2017	0915	11/9/2017	SA_132
IC-441-1B-101617	IC	10/16/2017	1015	11/9/2017	SA_133
IC-441-1C-101617	IC	10/16/2017	1125	11/9/2017	SA_134
IC-441-1D-101617	IC	10/16/2017	1250	11/9/2017	SA_135

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-1C-101317-0-2	SA_1-2mm	EPA6010	1	mg/kg	Aluminum	11141.25	
D-401-1C-101317-0-2	SA_1-2mm	EPA6010	1	mg/kg	Antimony	20.48	
D-401-1C-101317-0-2	SA_1-2mm	EPA6010	1	mg/kg	Arsenic	38.28	dup
D-401-1C-101317-0-2	SA_1-2mm	EPA6010	1	mg/kg	Barium	147.60	
D-401-1C-101317-0-2	SA_1-2mm	EPA6010	1	mg/kg	Beryllium	0.38	crm rl
D-401-1C-101317-0-2	SA_1-2mm	EPA6010	1	mg/kg	Cadmium	14.84	
D-401-1C-101317-0-2	SA_1-2mm	EPA6010	1	mg/kg	Calcium	3303.25	
D-401-1C-101317-0-2	SA_1-2mm	EPA6010	1	mg/kg	Chromium	22.71	
D-401-1C-101317-0-2	SA_1-2mm	EPA6010	1	mg/kg	Cobalt	5.04	
D-401-1C-101317-0-2	SA_1-2mm	EPA6010	1	mg/kg	Copper	28.24	
D-401-1C-101317-0-2	SA_1-2mm	EPA6010	1	mg/kg	Iron	17731.04	
D-401-1C-101317-0-2	SA_1-2mm	EPA6010	1	mg/kg	Lead	884.23	dup
D-401-1C-101317-0-2	SA_1-2mm	EPA6010	1	mg/kg	Magnesium	2398.44	
D-401-1C-101317-0-2	SA_1-2mm	EPA6010	1	mg/kg	Manganese	544.08	
D-401-1C-101317-0-2	SA_1-2mm	EPA6010	1	mg/kg	Nickel	11.20	
D-401-1C-101317-0-2	SA_1-2mm	EPA6010	1	mg/kg	Phosphorus	756.96	
D-401-1C-101317-0-2	SA_1-2mm	EPA6010	1	mg/kg	Potassium	967.45	crm
D-401-1C-101317-0-2	SA_1-2mm	EPA6010	1	mg/kg	Selenium	4.93	rl
D-401-1C-101317-0-2	SA_1-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL
D-401-1C-101317-0-2	SA_1-2mm	EPA6010	1	mg/kg	Sodium	113.21	
D-401-1C-101317-0-2	SA_1-2mm	EPA6010	1	mg/kg	Thallium	0.74	rl
D-401-1C-101317-0-2	SA_1-2mm	EPA6010	1	mg/kg	Vanadium	39.84	
D-401-1C-101317-0-2	SA_1-2mm	EPA6010	1	mg/kg	Zinc	550.30	
D-401-1A-101317-0-2	SA_2-2mm	EPA6010	1	mg/kg	Aluminum	4766.50	
D-401-1A-101317-0-2	SA_2-2mm	EPA6010	1	mg/kg	Antimony	47.62	
D-401-1A-101317-0-2	SA_2-2mm	EPA6010	1	mg/kg	Arsenic	16.95	dup



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-1A-101317-0-2	SA_2-2mm	EPA6010	1	mg/kg	Barium	60.19	
D-401-1A-101317-0-2	SA_2-2mm	EPA6010	1	mg/kg	Beryllium	0.12	crm rl
D-401-1A-101317-0-2	SA_2-2mm	EPA6010	1	mg/kg	Cadmium	8.35	
D-401-1A-101317-0-2	SA_2-2mm	EPA6010	1	mg/kg	Calcium	3894.94	
D-401-1A-101317-0-2	SA_2-2mm	EPA6010	1	mg/kg	Chromium	13.70	
D-401-1A-101317-0-2	SA_2-2mm	EPA6010	1	mg/kg	Cobalt	1.99	
D-401-1A-101317-0-2	SA_2-2mm	EPA6010	1	mg/kg	Copper	40.58	
D-401-1A-101317-0-2	SA_2-2mm	EPA6010	1	mg/kg	Iron	8764.08	
D-401-1A-101317-0-2	SA_2-2mm	EPA6010	1	mg/kg	Lead	1005.56	dup
D-401-1A-101317-0-2	SA_2-2mm	EPA6010	1	mg/kg	Magnesium	1119.57	
D-401-1A-101317-0-2	SA_2-2mm	EPA6010	1	mg/kg	Manganese	224.74	
D-401-1A-101317-0-2	SA_2-2mm	EPA6010	1	mg/kg	Nickel	5.00	
D-401-1A-101317-0-2	SA_2-2mm	EPA6010	1	mg/kg	Phosphorus	610.92	
D-401-1A-101317-0-2	SA_2-2mm	EPA6010	1	mg/kg	Potassium	790.43	crm
D-401-1A-101317-0-2	SA_2-2mm	EPA6010	1	mg/kg	Selenium	4.68	rl
D-401-1A-101317-0-2	SA_2-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL
D-401-1A-101317-0-2	SA_2-2mm	EPA6010	1	mg/kg	Sodium	86.98	
D-401-1A-101317-0-2	SA_2-2mm	EPA6010	1	mg/kg	Thallium	0.47	rl
D-401-1A-101317-0-2	SA_2-2mm	EPA6010	1	mg/kg	Vanadium	19.95	
D-401-1A-101317-0-2	SA_2-2mm	EPA6010	1	mg/kg	Zinc	724.08	
D-401-1B-101317-0-2	SA_3-2mm	EPA6010	1	mg/kg	Aluminum	16095.83	
D-401-1B-101317-0-2	SA_3-2mm	EPA6010	1	mg/kg	Antimony	9.62	
D-401-1B-101317-0-2	SA_3-2mm	EPA6010	1	mg/kg	Arsenic	47.53	dup
D-401-1B-101317-0-2	SA_3-2mm	EPA6010	1	mg/kg	Barium	151.58	
D-401-1B-101317-0-2	SA_3-2mm	EPA6010	1	mg/kg	Beryllium	0.58	crm rl
D-401-1B-101317-0-2	SA_3-2mm	EPA6010	1	mg/kg	Cadmium	14.37	
D-401-1B-101317-0-2	SA_3-2mm	EPA6010	1	mg/kg	Calcium	2729.95	
D-401-1B-101317-0-2	SA_3-2mm	EPA6010	1	mg/kg	Chromium	28.57	



Sample ID	Analysis ID	d_labresult.method_code	Batch	d labresult.units	d_labresult.analyte	value	flags
D-401-1B-101317-0-2	SA_3-2mm	EPA6010	1	mg/kg	Cobalt	6.88	
D-401-1B-101317-0-2	SA_3-2mm	EPA6010	1	mg/kg	Copper	20.77	
D-401-1B-101317-0-2	SA_3-2mm	EPA6010	1	mg/kg	Iron	26859.89	
D-401-1B-101317-0-2	SA_3-2mm	EPA6010	1	mg/kg	Lead	113.03	dup
D-401-1B-101317-0-2	SA_3-2mm	EPA6010	1	mg/kg	Magnesium	2626.08	
D-401-1B-101317-0-2	SA_3-2mm	EPA6010	1	mg/kg	Manganese	854.29	
D-401-1B-101317-0-2	SA_3-2mm	EPA6010	1	mg/kg	Nickel	14.36	
D-401-1B-101317-0-2	SA_3-2mm	EPA6010	1	mg/kg	Phosphorus	1279.54	
D-401-1B-101317-0-2	SA_3-2mm	EPA6010	1	mg/kg	Potassium	1140.43	crm
D-401-1B-101317-0-2	SA_3-2mm	EPA6010	1	mg/kg	Selenium	4.92	rl
D-401-1B-101317-0-2	SA_3-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL
D-401-1B-101317-0-2	SA_3-2mm	EPA6010	1	mg/kg	Sodium	166.03	
D-401-1B-101317-0-2	SA_3-2mm	EPA6010	1	mg/kg	Thallium	0.57	rl
D-401-1B-101317-0-2	SA_3-2mm	EPA6010	1	mg/kg	Vanadium	68.87	
D-401-1B-101317-0-2	SA_3-2mm	EPA6010	1	mg/kg	Zinc	449.24	
D-401-2B-101317-10-12	SA_4-2mm	EPA6010	1	mg/kg	Aluminum	16672.93	
D-401-2B-101317-10-12	SA_4-2mm	EPA6010	1	mg/kg	Antimony	2.27	rl
D-401-2B-101317-10-12	SA_4-2mm	EPA6010	1	mg/kg	Arsenic	3.84	dup
D-401-2B-101317-10-12	SA_4-2mm	EPA6010	1	mg/kg	Barium	120.53	
D-401-2B-101317-10-12	SA_4-2mm	EPA6010	1	mg/kg	Beryllium	0.48	crm rl
D-401-2B-101317-10-12	SA_4-2mm	EPA6010	1	mg/kg	Cadmium	0.54	rl
D-401-2B-101317-10-12	SA_4-2mm	EPA6010	1	mg/kg	Calcium	3214.57	
D-401-2B-101317-10-12	SA_4-2mm	EPA6010	1	mg/kg	Chromium	30.79	
D-401-2B-101317-10-12	SA_4-2mm	EPA6010	1	mg/kg	Cobalt	6.54	
D-401-2B-101317-10-12	SA_4-2mm	EPA6010	1	mg/kg	Copper	15.87	
D-401-2B-101317-10-12	SA_4-2mm	EPA6010	1	mg/kg	Iron	25778.17	
D-401-2B-101317-10-12	SA_4-2mm	EPA6010	1	mg/kg	Lead	7.03	dup
D-401-2B-101317-10-12	SA_4-2mm	EPA6010	1	mg/kg	Magnesium	3674.43	



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-2B-101317-10-12	SA_4-2mm	EPA6010	1	mg/kg	Manganese	417.85	
D-401-2B-101317-10-12	SA_4-2mm	EPA6010	1	mg/kg	Nickel	15.10	
D-401-2B-101317-10-12	SA_4-2mm	EPA6010	1	mg/kg	Phosphorus	1056.27	
D-401-2B-101317-10-12	SA_4-2mm	EPA6010	1	mg/kg	Potassium	1122.97	crm
D-401-2B-101317-10-12	SA_4-2mm	EPA6010	1	mg/kg	Selenium	3.61	rl
D-401-2B-101317-10-12	SA_4-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL
D-401-2B-101317-10-12	SA_4-2mm	EPA6010	1	mg/kg	Sodium	166.47	
D-401-2B-101317-10-12	SA_4-2mm	EPA6010	1	mg/kg	Thallium	0.47	rl
D-401-2B-101317-10-12	SA_4-2mm	EPA6010	1	mg/kg	Vanadium	66.13	
D-401-2B-101317-10-12	SA_4-2mm	EPA6010	1	mg/kg	Zinc	50.13	
D-401-2D-101317-10-12	SA_5-2mm	EPA6010	1	mg/kg	Aluminum	21009.94	
D-401-2D-101317-10-12	SA_5-2mm	EPA6010	1	mg/kg	Antimony	3.25	rl
D-401-2D-101317-10-12	SA_5-2mm	EPA6010	1	mg/kg	Arsenic	4.57	dup
D-401-2D-101317-10-12	SA_5-2mm	EPA6010	1	mg/kg	Barium	127.12	
D-401-2D-101317-10-12	SA_5-2mm	EPA6010	1	mg/kg	Beryllium	0.66	crm rl
D-401-2D-101317-10-12	SA_5-2mm	EPA6010	1	mg/kg	Cadmium	0.61	rl
D-401-2D-101317-10-12	SA_5-2mm	EPA6010	1	mg/kg	Calcium	3036.99	
D-401-2D-101317-10-12	SA_5-2mm	EPA6010	1	mg/kg	Chromium	33.12	
D-401-2D-101317-10-12	SA_5-2mm	EPA6010	1	mg/kg	Cobalt	7.14	
D-401-2D-101317-10-12	SA_5-2mm	EPA6010	1	mg/kg	Copper	17.46	
D-401-2D-101317-10-12	SA_5-2mm	EPA6010	1	mg/kg	Iron	29901.47	
D-401-2D-101317-10-12	SA_5-2mm	EPA6010	1	mg/kg	Lead	11.73	dup
D-401-2D-101317-10-12	SA_5-2mm	EPA6010	1	mg/kg	Magnesium	2777.12	
D-401-2D-101317-10-12	SA_5-2mm	EPA6010	1	mg/kg	Manganese	441.70	
D-401-2D-101317-10-12	SA_5-2mm	EPA6010	1	mg/kg	Nickel	14.92	
D-401-2D-101317-10-12	SA_5-2mm	EPA6010	1	mg/kg	Phosphorus	1156.36	
D-401-2D-101317-10-12	SA_5-2mm	EPA6010	1	mg/kg	Potassium	1312.32	crm
D-401-2D-101317-10-12	SA_5-2mm	EPA6010	1	mg/kg	Selenium	3.46	rl



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-2D-101317-10-12	SA_5-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL
D-401-2D-101317-10-12	SA_5-2mm	EPA6010	1	mg/kg	Sodium	247.03	
D-401-2D-101317-10-12	SA_5-2mm	EPA6010	1	mg/kg	Thallium	0.58	rl
D-401-2D-101317-10-12	SA_5-2mm	EPA6010	1	mg/kg	Vanadium	74.63	
D-401-2D-101317-10-12	SA_5-2mm	EPA6010	1	mg/kg	Zinc	57.95	
D-401-1A-101317-2-4	SA_6-2mm	EPA6010	1	mg/kg	Aluminum	11031.97	
D-401-1A-101317-2-4	SA_6-2mm	EPA6010	1	mg/kg	Antimony	21.76	
D-401-1A-101317-2-4	SA_6-2mm	EPA6010	1	mg/kg	Arsenic	39.35	dup
D-401-1A-101317-2-4	SA_6-2mm	EPA6010	1	mg/kg	Barium	106.40	
D-401-1A-101317-2-4	SA_6-2mm	EPA6010	1	mg/kg	Beryllium	0.36	crm rl
D-401-1A-101317-2-4	SA_6-2mm	EPA6010	1	mg/kg	Cadmium	4.60	
D-401-1A-101317-2-4	SA_6-2mm	EPA6010	1	mg/kg	Calcium	1798.40	
D-401-1A-101317-2-4	SA_6-2mm	EPA6010	1	mg/kg	Chromium	20.04	
D-401-1A-101317-2-4	SA_6-2mm	EPA6010	1	mg/kg	Cobalt	4.59	
D-401-1A-101317-2-4	SA_6-2mm	EPA6010	1	mg/kg	Copper	27.14	
D-401-1A-101317-2-4	SA_6-2mm	EPA6010	1	mg/kg	Iron	18788.84	
D-401-1A-101317-2-4	SA_6-2mm	EPA6010	1	mg/kg	Lead	487.34	dup
D-401-1A-101317-2-4	SA_6-2mm	EPA6010	1	mg/kg	Magnesium	2410.71	
D-401-1A-101317-2-4	SA_6-2mm	EPA6010	1	mg/kg	Manganese	309.10	
D-401-1A-101317-2-4	SA_6-2mm	EPA6010	1	mg/kg	Nickel	11.26	
D-401-1A-101317-2-4	SA_6-2mm	EPA6010	1	mg/kg	Phosphorus	909.02	
D-401-1A-101317-2-4	SA_6-2mm	EPA6010	1	mg/kg	Potassium	1023.86	crm
D-401-1A-101317-2-4	SA_6-2mm	EPA6010	1	mg/kg	Selenium	2.58	rl
D-401-1A-101317-2-4	SA_6-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL
D-401-1A-101317-2-4	SA_6-2mm	EPA6010	1	mg/kg	Sodium	112.01	
D-401-1A-101317-2-4	SA_6-2mm	EPA6010	1	mg/kg	Thallium	0.59	rl
D-401-1A-101317-2-4	SA_6-2mm	EPA6010	1	mg/kg	Vanadium	45.41	
D-401-1A-101317-2-4	SA_6-2mm	EPA6010	1	mg/kg	Zinc	174.92	



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-1B-101317-2-4	SA_7-2mm	EPA6010	1	mg/kg	Aluminum	15717.64	
D-401-1B-101317-2-4	SA_7-2mm	EPA6010	1	mg/kg	Antimony	3.89	rl
D-401-1B-101317-2-4	SA_7-2mm	EPA6010	1	mg/kg	Arsenic	6.13	dup
D-401-1B-101317-2-4	SA_7-2mm	EPA6010	1	mg/kg	Barium	130.32	
D-401-1B-101317-2-4	SA_7-2mm	EPA6010	1	mg/kg	Beryllium	0.46	crm rl
D-401-1B-101317-2-4	SA_7-2mm	EPA6010	1	mg/kg	Cadmium	1.70	
D-401-1B-101317-2-4	SA_7-2mm	EPA6010	1	mg/kg	Calcium	3464.85	
D-401-1B-101317-2-4	SA_7-2mm	EPA6010	1	mg/kg	Chromium	27.39	
D-401-1B-101317-2-4	SA_7-2mm	EPA6010	1	mg/kg	Cobalt	6.43	
D-401-1B-101317-2-4	SA_7-2mm	EPA6010	1	mg/kg	Copper	13.16	
D-401-1B-101317-2-4	SA_7-2mm	EPA6010	1	mg/kg	Iron	24185.58	
D-401-1B-101317-2-4	SA_7-2mm	EPA6010	1	mg/kg	Lead	14.57	dup
D-401-1B-101317-2-4	SA_7-2mm	EPA6010	1	mg/kg	Magnesium	2888.94	
D-401-1B-101317-2-4	SA_7-2mm	EPA6010	1	mg/kg	Manganese	511.80	
D-401-1B-101317-2-4	SA_7-2mm	EPA6010	1	mg/kg	Nickel	13.27	
D-401-1B-101317-2-4	SA_7-2mm	EPA6010	1	mg/kg	Phosphorus	1215.65	
D-401-1B-101317-2-4	SA_7-2mm	EPA6010	1	mg/kg	Potassium	1096.54	crm
D-401-1B-101317-2-4	SA_7-2mm	EPA6010	1	mg/kg	Selenium	4.01	rl
D-401-1B-101317-2-4	SA_7-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL
D-401-1B-101317-2-4	SA_7-2mm	EPA6010	1	mg/kg	Sodium	156.84	
D-401-1B-101317-2-4	SA_7-2mm	EPA6010	1	mg/kg	Thallium	0.43	rl
D-401-1B-101317-2-4	SA_7-2mm	EPA6010	1	mg/kg	Vanadium	60.00	
D-401-1B-101317-2-4	SA_7-2mm	EPA6010	1	mg/kg	Zinc	225.41	
D-401-1D-101317-0-2	SA_8-2mm	EPA6010	1	mg/kg	Aluminum	13158.32	
D-401-1D-101317-0-2	SA_8-2mm	EPA6010	1	mg/kg	Antimony	32.36	
D-401-1D-101317-0-2	SA_8-2mm	EPA6010	1	mg/kg	Arsenic	45.02	dup
D-401-1D-101317-0-2	SA_8-2mm	EPA6010	1	mg/kg	Barium	145.01	
D-401-1D-101317-0-2	SA_8-2mm	EPA6010	1	mg/kg	Beryllium	0.45	crm rl



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-1D-101317-0-2	SA_8-2mm	EPA6010	1	mg/kg	Cadmium	18.89	
D-401-1D-101317-0-2	SA_8-2mm	EPA6010	1	mg/kg	Calcium	4297.67	
D-401-1D-101317-0-2	SA_8-2mm	EPA6010	1	mg/kg	Chromium	26.38	
D-401-1D-101317-0-2	SA_8-2mm	EPA6010	1	mg/kg	Cobalt	5.49	
D-401-1D-101317-0-2	SA_8-2mm	EPA6010	1	mg/kg	Copper	43.97	
D-401-1D-101317-0-2	SA_8-2mm	EPA6010	1	mg/kg	Iron	22647.02	
D-401-1D-101317-0-2	SA_8-2mm	EPA6010	1	mg/kg	Lead	1161.47	dup
D-401-1D-101317-0-2	SA_8-2mm	EPA6010	1	mg/kg	Magnesium	2905.99	
D-401-1D-101317-0-2	SA_8-2mm	EPA6010	1	mg/kg	Manganese	616.50	
D-401-1D-101317-0-2	SA_8-2mm	EPA6010	1	mg/kg	Nickel	12.05	
D-401-1D-101317-0-2	SA_8-2mm	EPA6010	1	mg/kg	Phosphorus	1267.08	
D-401-1D-101317-0-2	SA_8-2mm	EPA6010	1	mg/kg	Potassium	1239.32	crm
D-401-1D-101317-0-2	SA_8-2mm	EPA6010	1	mg/kg	Selenium	5.44	rl
D-401-1D-101317-0-2	SA_8-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL
D-401-1D-101317-0-2	SA_8-2mm	EPA6010	1	mg/kg	Sodium	171.27	
D-401-1D-101317-0-2	SA_8-2mm	EPA6010	1	mg/kg	Thallium	0.97	rl
D-401-1D-101317-0-2	SA_8-2mm	EPA6010	1	mg/kg	Vanadium	57.07	
D-401-1D-101317-0-2	SA_8-2mm	EPA6010	1	mg/kg	Zinc	697.43	
D-401-1D-101317-2-4	SA_9-2mm	EPA6010	1	mg/kg	Aluminum	16482.67	
D-401-1D-101317-2-4	SA_9-2mm	EPA6010	1	mg/kg	Antimony	9.04	
D-401-1D-101317-2-4	SA_9-2mm	EPA6010	1	mg/kg	Arsenic	17.48	dup
D-401-1D-101317-2-4	SA_9-2mm	EPA6010	1	mg/kg	Barium	175.96	
D-401-1D-101317-2-4	SA_9-2mm	EPA6010	1	mg/kg	Beryllium	0.53	crm rl
D-401-1D-101317-2-4	SA_9-2mm	EPA6010	1	mg/kg	Cadmium	4.35	
D-401-1D-101317-2-4	SA_9-2mm	EPA6010	1	mg/kg	Calcium	3489.91	
D-401-1D-101317-2-4	SA_9-2mm	EPA6010	1	mg/kg	Chromium	31.62	
D-401-1D-101317-2-4	SA_9-2mm	EPA6010	1	mg/kg	Cobalt	6.75	
D-401-1D-101317-2-4	SA_9-2mm	EPA6010	1	mg/kg	Copper	19.40	



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-1D-101317-2-4	SA_9-2mm	EPA6010	1	mg/kg	Iron	27048.78	
D-401-1D-101317-2-4	SA_9-2mm	EPA6010	1	mg/kg	Lead	75.86	dup
D-401-1D-101317-2-4	SA_9-2mm	EPA6010	1	mg/kg	Magnesium	2772.87	
D-401-1D-101317-2-4	SA_9-2mm	EPA6010	1	mg/kg	Manganese	679.97	
D-401-1D-101317-2-4	SA_9-2mm	EPA6010	1	mg/kg	Nickel	15.47	
D-401-1D-101317-2-4	SA_9-2mm	EPA6010	1	mg/kg	Phosphorus	1202.82	
D-401-1D-101317-2-4	SA_9-2mm	EPA6010	1	mg/kg	Potassium	1229.37	crm
D-401-1D-101317-2-4	SA_9-2mm	EPA6010	1	mg/kg	Selenium	4.33	rl
D-401-1D-101317-2-4	SA_9-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL
D-401-1D-101317-2-4	SA_9-2mm	EPA6010	1	mg/kg	Sodium	178.14	
D-401-1D-101317-2-4	SA_9-2mm	EPA6010	1	mg/kg	Thallium	0.97	rl
D-401-1D-101317-2-4	SA_9-2mm	EPA6010	1	mg/kg	Vanadium	69.23	
D-401-1D-101317-2-4	SA_9-2mm	EPA6010	1	mg/kg	Zinc	432.05	
D-401-1C-101317-2-4	SA_10-2mm	EPA6010	1	mg/kg	Aluminum	13662.27	
D-401-1C-101317-2-4	SA_10-2mm	EPA6010	1	mg/kg	Antimony	6.86	
D-401-1C-101317-2-4	SA_10-2mm	EPA6010	1	mg/kg	Arsenic	30.58	dup
D-401-1C-101317-2-4	SA_10-2mm	EPA6010	1	mg/kg	Barium	121.36	
D-401-1C-101317-2-4	SA_10-2mm	EPA6010	1	mg/kg	Beryllium	0.42	crm rl
D-401-1C-101317-2-4	SA_10-2mm	EPA6010	1	mg/kg	Cadmium	4.97	
D-401-1C-101317-2-4	SA_10-2mm	EPA6010	1	mg/kg	Calcium	3067.90	
D-401-1C-101317-2-4	SA_10-2mm	EPA6010	1	mg/kg	Chromium	27.38	
D-401-1C-101317-2-4	SA_10-2mm	EPA6010	1	mg/kg	Cobalt	5.81	
D-401-1C-101317-2-4	SA_10-2mm	EPA6010	1	mg/kg	Copper	19.85	
D-401-1C-101317-2-4	SA_10-2mm	EPA6010	1	mg/kg	Iron	23871.98	
D-401-1C-101317-2-4	SA_10-2mm	EPA6010	1	mg/kg	Lead	82.40	dup
D-401-1C-101317-2-4	SA_10-2mm	EPA6010	1	mg/kg	Magnesium	2985.65	
D-401-1C-101317-2-4	SA_10-2mm	EPA6010	1	mg/kg	Manganese	496.89	
D-401-1C-101317-2-4	SA_10-2mm	EPA6010	1	mg/kg	Nickel	12.68	



Sample ID	Analysis ID	d labresult.method code	Batch	d labresult.units	d labresult.analyte	value	flags
D-401-1C-101317-2-4	SA_10-2mm	EPA6010	1	mg/kg	Phosphorus	868.58	
D-401-1C-101317-2-4	SA_10-2mm	EPA6010	1	mg/kg	Potassium	1187.33	crm
D-401-1C-101317-2-4	SA_10-2mm	EPA6010	1	mg/kg	Selenium	3.10	rl
D-401-1C-101317-2-4	SA_10-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL
D-401-1C-101317-2-4	SA_10-2mm	EPA6010	1	mg/kg	Sodium	147.31	
D-401-1C-101317-2-4	SA_10-2mm	EPA6010	1	mg/kg	Thallium	0.37	rl
D-401-1C-101317-2-4	SA_10-2mm	EPA6010	1	mg/kg	Vanadium	60.65	
D-401-1C-101317-2-4	SA_10-2mm	EPA6010	1	mg/kg	Zinc	263.67	
D-401-1D-101317-6-8	SA_11-2mm	EPA6010	1	mg/kg	Aluminum	18048.94	
D-401-1D-101317-6-8	SA_11-2mm	EPA6010	1	mg/kg	Antimony	3.38	rl
D-401-1D-101317-6-8	SA_11-2mm	EPA6010	1	mg/kg	Arsenic	4.67	dup
D-401-1D-101317-6-8	SA_11-2mm	EPA6010	1	mg/kg	Barium	135.37	
D-401-1D-101317-6-8	SA_11-2mm	EPA6010	1	mg/kg	Beryllium	0.61	crm rl
D-401-1D-101317-6-8	SA_11-2mm	EPA6010	1	mg/kg	Cadmium	0.71	rl
D-401-1D-101317-6-8	SA_11-2mm	EPA6010	1	mg/kg	Calcium	3236.65	
D-401-1D-101317-6-8	SA_11-2mm	EPA6010	1	mg/kg	Chromium	33.80	
D-401-1D-101317-6-8	SA_11-2mm	EPA6010	1	mg/kg	Cobalt	6.62	
D-401-1D-101317-6-8	SA_11-2mm	EPA6010	1	mg/kg	Copper	17.49	
D-401-1D-101317-6-8	SA_11-2mm	EPA6010	1	mg/kg	Iron	27856.89	
D-401-1D-101317-6-8	SA_11-2mm	EPA6010	1	mg/kg	Lead	10.91	dup
D-401-1D-101317-6-8	SA_11-2mm	EPA6010	1	mg/kg	Magnesium	2889.71	
D-401-1D-101317-6-8	SA_11-2mm	EPA6010	1	mg/kg	Manganese	489.14	
D-401-1D-101317-6-8	SA_11-2mm	EPA6010	1	mg/kg	Nickel	14.28	
D-401-1D-101317-6-8	SA_11-2mm	EPA6010	1	mg/kg	Phosphorus	1222.42	
D-401-1D-101317-6-8	SA_11-2mm	EPA6010	1	mg/kg	Potassium	1080.53	crm
D-401-1D-101317-6-8	SA_11-2mm	EPA6010	1	mg/kg	Selenium	3.38	rl
D-401-1D-101317-6-8	SA_11-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL
D-401-1D-101317-6-8	SA_11-2mm	EPA6010	1	mg/kg	Sodium	179.75	



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Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-1D-101317-6-8	SA_11-2mm	EPA6010	1	mg/kg	Thallium	0.52	rl
D-401-1D-101317-6-8	SA_11-2mm	EPA6010	1	mg/kg	Vanadium	71.64	
D-401-1D-101317-6-8	SA_11-2mm	EPA6010	1	mg/kg	Zinc	62.11	
D-401-1A-101317-4-6	SA_12-2mm	EPA6010	1	mg/kg	Aluminum	12727.80	
D-401-1A-101317-4-6	SA_12-2mm	EPA6010	1	mg/kg	Antimony	10.50	
D-401-1A-101317-4-6	SA_12-2mm	EPA6010	1	mg/kg	Arsenic	29.79	dup
D-401-1A-101317-4-6	SA_12-2mm	EPA6010	1	mg/kg	Barium	145.84	
D-401-1A-101317-4-6	SA_12-2mm	EPA6010	1	mg/kg	Beryllium	0.44	crm rl
D-401-1A-101317-4-6	SA_12-2mm	EPA6010	1	mg/kg	Cadmium	8.13	
D-401-1A-101317-4-6	SA_12-2mm	EPA6010	1	mg/kg	Calcium	1654.82	
D-401-1A-101317-4-6	SA_12-2mm	EPA6010	1	mg/kg	Chromium	26.29	
D-401-1A-101317-4-6	SA_12-2mm	EPA6010	1	mg/kg	Cobalt	5.78	
D-401-1A-101317-4-6	SA_12-2mm	EPA6010	1	mg/kg	Copper	22.10	
D-401-1A-101317-4-6	SA_12-2mm	EPA6010	1	mg/kg	Iron	21885.21	
D-401-1A-101317-4-6	SA_12-2mm	EPA6010	1	mg/kg	Lead	199.02	dup
D-401-1A-101317-4-6	SA_12-2mm	EPA6010	1	mg/kg	Magnesium	2447.62	
D-401-1A-101317-4-6	SA_12-2mm	EPA6010	1	mg/kg	Manganese	597.53	
D-401-1A-101317-4-6	SA_12-2mm	EPA6010	1	mg/kg	Nickel	11.75	
D-401-1A-101317-4-6	SA_12-2mm	EPA6010	1	mg/kg	Phosphorus	917.87	
D-401-1A-101317-4-6	SA_12-2mm	EPA6010	1	mg/kg	Potassium	911.33	crm
D-401-1A-101317-4-6	SA_12-2mm	EPA6010	1	mg/kg	Selenium	3.40	rl
D-401-1A-101317-4-6	SA_12-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL
D-401-1A-101317-4-6	SA_12-2mm	EPA6010	1	mg/kg	Sodium	101.69	
D-401-1A-101317-4-6	SA_12-2mm	EPA6010	1	mg/kg	Thallium	0.39	rl
D-401-1A-101317-4-6	SA_12-2mm	EPA6010	1	mg/kg	Vanadium	52.57	
D-401-1A-101317-4-6	SA_12-2mm	EPA6010	1	mg/kg	Zinc	151.08	
D-401-1B-101317-4-6	SA_13-2mm	EPA6010	1	mg/kg	Aluminum	17567.05	
D-401-1B-101317-4-6	SA_13-2mm	EPA6010	1	mg/kg	Antimony	4.19	rl



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-1B-101317-4-6	SA_13-2mm	EPA6010	1	mg/kg	Arsenic	10.11	dup
D-401-1B-101317-4-6	SA_13-2mm	EPA6010	1	mg/kg	Barium	113.53	
D-401-1B-101317-4-6	SA_13-2mm	EPA6010	1	mg/kg	Beryllium	0.52	crm rl
D-401-1B-101317-4-6	SA_13-2mm	EPA6010	1	mg/kg	Cadmium	2.66	
D-401-1B-101317-4-6	SA_13-2mm	EPA6010	1	mg/kg	Calcium	2669.19	
D-401-1B-101317-4-6	SA_13-2mm	EPA6010	1	mg/kg	Chromium	36.64	
D-401-1B-101317-4-6	SA_13-2mm	EPA6010	1	mg/kg	Cobalt	6.75	
D-401-1B-101317-4-6	SA_13-2mm	EPA6010	1	mg/kg	Copper	16.16	
D-401-1B-101317-4-6	SA_13-2mm	EPA6010	1	mg/kg	Iron	28238.99	
D-401-1B-101317-4-6	SA_13-2mm	EPA6010	1	mg/kg	Lead	32.12	dup
D-401-1B-101317-4-6	SA_13-2mm	EPA6010	1	mg/kg	Magnesium	3010.98	
D-401-1B-101317-4-6	SA_13-2mm	EPA6010	1	mg/kg	Manganese	481.83	
D-401-1B-101317-4-6	SA_13-2mm	EPA6010	1	mg/kg	Nickel	14.95	
D-401-1B-101317-4-6	SA_13-2mm	EPA6010	1	mg/kg	Phosphorus	1142.61	
D-401-1B-101317-4-6	SA_13-2mm	EPA6010	1	mg/kg	Potassium	1085.21	crm
D-401-1B-101317-4-6	SA_13-2mm	EPA6010	1	mg/kg	Selenium	3.16	rl
D-401-1B-101317-4-6	SA_13-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL
D-401-1B-101317-4-6	SA_13-2mm	EPA6010	1	mg/kg	Sodium	166.68	
D-401-1B-101317-4-6	SA_13-2mm	EPA6010	1	mg/kg	Thallium	0.71	rl
D-401-1B-101317-4-6	SA_13-2mm	EPA6010	1	mg/kg	Vanadium	71.59	
D-401-1B-101317-4-6	SA_13-2mm	EPA6010	1	mg/kg	Zinc	112.66	
D-401-1C-101317-4-6	SA_14-2mm	EPA6010	1	mg/kg	Aluminum	15033.09	
D-401-1C-101317-4-6	SA_14-2mm	EPA6010	1	mg/kg	Antimony	3.66	rl
D-401-1C-101317-4-6	SA_14-2mm	EPA6010	1	mg/kg	Arsenic	5.70	dup
D-401-1C-101317-4-6	SA_14-2mm	EPA6010	1	mg/kg	Barium	121.84	
D-401-1C-101317-4-6	SA_14-2mm	EPA6010	1	mg/kg	Beryllium	0.48	crm rl
D-401-1C-101317-4-6	SA_14-2mm	EPA6010	1	mg/kg	Cadmium	0.76	rl
D-401-1C-101317-4-6	SA_14-2mm	EPA6010	1	mg/kg	Calcium	2857.18	



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-1C-101317-4-6	SA_14-2mm	EPA6010	1	mg/kg	Chromium	38.93	
D-401-1C-101317-4-6	SA_14-2mm	EPA6010	1	mg/kg	Cobalt	6.14	
D-401-1C-101317-4-6	SA_14-2mm	EPA6010	1	mg/kg	Copper	13.76	
D-401-1C-101317-4-6	SA_14-2mm	EPA6010	1	mg/kg	Iron	28702.35	
D-401-1C-101317-4-6	SA_14-2mm	EPA6010	1	mg/kg	Lead	11.71	dup
D-401-1C-101317-4-6	SA_14-2mm	EPA6010	1	mg/kg	Magnesium	2663.20	
D-401-1C-101317-4-6	SA_14-2mm	EPA6010	1	mg/kg	Manganese	447.19	
D-401-1C-101317-4-6	SA_14-2mm	EPA6010	1	mg/kg	Nickel	13.33	
D-401-1C-101317-4-6	SA_14-2mm	EPA6010	1	mg/kg	Phosphorus	872.02	
D-401-1C-101317-4-6	SA_14-2mm	EPA6010	1	mg/kg	Potassium	1009.11	crm
D-401-1C-101317-4-6	SA_14-2mm	EPA6010	1	mg/kg	Selenium	2.46	rl
D-401-1C-101317-4-6	SA_14-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL
D-401-1C-101317-4-6	SA_14-2mm	EPA6010	1	mg/kg	Sodium	145.99	
D-401-1C-101317-4-6	SA_14-2mm	EPA6010	1	mg/kg	Thallium	0.39	rl
D-401-1C-101317-4-6	SA_14-2mm	EPA6010	1	mg/kg	Vanadium	76.42	
D-401-1C-101317-4-6	SA_14-2mm	EPA6010	1	mg/kg	Zinc	74.39	
D-401-1D-101317-4-6	SA_15-2mm	EPA6010	1	mg/kg	Aluminum	17029.19	
D-401-1D-101317-4-6	SA_15-2mm	EPA6010	1	mg/kg	Antimony	6.02	
D-401-1D-101317-4-6	SA_15-2mm	EPA6010	1	mg/kg	Arsenic	5.90	dup
D-401-1D-101317-4-6	SA_15-2mm	EPA6010	1	mg/kg	Barium	153.91	
D-401-1D-101317-4-6	SA_15-2mm	EPA6010	1	mg/kg	Beryllium	0.61	crm rl
D-401-1D-101317-4-6	SA_15-2mm	EPA6010	1	mg/kg	Cadmium	1.07	
D-401-1D-101317-4-6	SA_15-2mm	EPA6010	1	mg/kg	Calcium	3315.78	
D-401-1D-101317-4-6	SA_15-2mm	EPA6010	1	mg/kg	Chromium	32.34	
D-401-1D-101317-4-6	SA_15-2mm	EPA6010	1	mg/kg	Cobalt	6.66	
D-401-1D-101317-4-6	SA_15-2mm	EPA6010	1	mg/kg	Copper	18.44	
D-401-1D-101317-4-6	SA_15-2mm	EPA6010	1	mg/kg	Iron	27121.36	
D-401-1D-101317-4-6	SA_15-2mm	EPA6010	1	mg/kg	Lead	14.18	dup



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Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-1D-101317-4-6	SA_15-2mm	EPA6010	1	mg/kg	Magnesium	2744.04	
D-401-1D-101317-4-6	SA_15-2mm	EPA6010	1	mg/kg	Manganese	519.81	
D-401-1D-101317-4-6	SA_15-2mm	EPA6010	1	mg/kg	Nickel	14.33	
D-401-1D-101317-4-6	SA_15-2mm	EPA6010	1	mg/kg	Phosphorus	1223.15	
D-401-1D-101317-4-6	SA_15-2mm	EPA6010	1	mg/kg	Potassium	1035.67	crm
D-401-1D-101317-4-6	SA_15-2mm	EPA6010	1	mg/kg	Selenium	2.96	rl
D-401-1D-101317-4-6	SA_15-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL
D-401-1D-101317-4-6	SA_15-2mm	EPA6010	1	mg/kg	Sodium	158.84	
D-401-1D-101317-4-6	SA_15-2mm	EPA6010	1	mg/kg	Thallium	0.41	rl
D-401-1D-101317-4-6	SA_15-2mm	EPA6010	1	mg/kg	Vanadium	67.70	
D-401-1D-101317-4-6	SA_15-2mm	EPA6010	1	mg/kg	Zinc	140.19	
D-401-1C-101317-8-10	SA_16-2mm	EPA6010	1	mg/kg	Aluminum	16074.57	
D-401-1C-101317-8-10	SA_16-2mm	EPA6010	1	mg/kg	Antimony	2.44	rl
D-401-1C-101317-8-10	SA_16-2mm	EPA6010	1	mg/kg	Arsenic	4.60	dup
D-401-1C-101317-8-10	SA_16-2mm	EPA6010	1	mg/kg	Barium	104.54	
D-401-1C-101317-8-10	SA_16-2mm	EPA6010	1	mg/kg	Beryllium	0.54	crm rl
D-401-1C-101317-8-10	SA_16-2mm	EPA6010	1	mg/kg	Cadmium	0.51	rl
D-401-1C-101317-8-10	SA_16-2mm	EPA6010	1	mg/kg	Calcium	2578.85	
D-401-1C-101317-8-10	SA_16-2mm	EPA6010	1	mg/kg	Chromium	29.52	
D-401-1C-101317-8-10	SA_16-2mm	EPA6010	1	mg/kg	Cobalt	6.25	
D-401-1C-101317-8-10	SA_16-2mm	EPA6010	1	mg/kg	Copper	14.30	
D-401-1C-101317-8-10	SA_16-2mm	EPA6010	1	mg/kg	Iron	27707.15	
D-401-1C-101317-8-10	SA_16-2mm	EPA6010	1	mg/kg	Lead	8.27	dup
D-401-1C-101317-8-10	SA_16-2mm	EPA6010	1	mg/kg	Magnesium	2817.00	
D-401-1C-101317-8-10	SA_16-2mm	EPA6010	1	mg/kg	Manganese	367.52	
D-401-1C-101317-8-10	SA_16-2mm	EPA6010	1	mg/kg	Nickel	13.41	
D-401-1C-101317-8-10	SA_16-2mm	EPA6010	1	mg/kg	Phosphorus	838.42	
D-401-1C-101317-8-10	SA_16-2mm	EPA6010	1	mg/kg	Potassium	990.86	crm



Sample ID	Analysis ID	d_labresult.method_code	Batch	d labresult.units	d_labresult.analyte	value	flags
D-401-1C-101317-8-10	SA_16-2mm	EPA6010	1	mg/kg	Selenium	2.72	rl
D-401-1C-101317-8-10	SA_16-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL
D-401-1C-101317-8-10	SA_16-2mm	EPA6010	1	mg/kg	Sodium	172.02	
D-401-1C-101317-8-10	SA_16-2mm	EPA6010	1	mg/kg	Thallium	0.56	rl
D-401-1C-101317-8-10	SA_16-2mm	EPA6010	1	mg/kg	Vanadium	71.00	
D-401-1C-101317-8-10	SA_16-2mm	EPA6010	1	mg/kg	Zinc	45.92	
D-401-1D-101317-8-10	SA_17-2mm	EPA6010	1	mg/kg	Aluminum	17612.51	
D-401-1D-101317-8-10	SA_17-2mm	EPA6010	1	mg/kg	Antimony	2.88	rl
D-401-1D-101317-8-10	SA_17-2mm	EPA6010	1	mg/kg	Arsenic	4.21	dup
D-401-1D-101317-8-10	SA_17-2mm	EPA6010	1	mg/kg	Barium	118.05	
D-401-1D-101317-8-10	SA_17-2mm	EPA6010	1	mg/kg	Beryllium	0.57	crm rl
D-401-1D-101317-8-10	SA_17-2mm	EPA6010	1	mg/kg	Cadmium	0.60	rl
D-401-1D-101317-8-10	SA_17-2mm	EPA6010	1	mg/kg	Calcium	2641.12	
D-401-1D-101317-8-10	SA_17-2mm	EPA6010	1	mg/kg	Chromium	33.57	
D-401-1D-101317-8-10	SA_17-2mm	EPA6010	1	mg/kg	Cobalt	6.42	
D-401-1D-101317-8-10	SA_17-2mm	EPA6010	1	mg/kg	Copper	16.71	
D-401-1D-101317-8-10	SA_17-2mm	EPA6010	1	mg/kg	Iron	28743.62	
D-401-1D-101317-8-10	SA_17-2mm	EPA6010	1	mg/kg	Lead	9.03	dup
D-401-1D-101317-8-10	SA_17-2mm	EPA6010	1	mg/kg	Magnesium	2791.97	
D-401-1D-101317-8-10	SA_17-2mm	EPA6010	1	mg/kg	Manganese	471.98	
D-401-1D-101317-8-10	SA_17-2mm	EPA6010	1	mg/kg	Nickel	15.02	
D-401-1D-101317-8-10	SA_17-2mm	EPA6010	1	mg/kg	Phosphorus	1105.67	
D-401-1D-101317-8-10	SA_17-2mm	EPA6010	1	mg/kg	Potassium	916.28	crm
D-401-1D-101317-8-10	SA_17-2mm	EPA6010	1	mg/kg	Selenium	3.11	rl
D-401-1D-101317-8-10	SA_17-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL
D-401-1D-101317-8-10	SA_17-2mm	EPA6010	1	mg/kg	Sodium	152.07	
D-401-1D-101317-8-10	SA_17-2mm	EPA6010	1	mg/kg	Thallium	0.71	rl
D-401-1D-101317-8-10	SA_17-2mm	EPA6010	1	mg/kg	Vanadium	73.15	



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-1D-101317-8-10	SA_17-2mm	EPA6010	1	mg/kg	Zinc	58.03	
D-401-1A-101317-6-8	SA_18-2mm	EPA6010	1	mg/kg	Aluminum	12883.28	
D-401-1A-101317-6-8	SA_18-2mm	EPA6010	1	mg/kg	Antimony	5.22	
D-401-1A-101317-6-8	SA_18-2mm	EPA6010	1	mg/kg	Arsenic	7.72	dup
D-401-1A-101317-6-8	SA_18-2mm	EPA6010	1	mg/kg	Barium	130.27	
D-401-1A-101317-6-8	SA_18-2mm	EPA6010	1	mg/kg	Beryllium	0.45	crm rl
D-401-1A-101317-6-8	SA_18-2mm	EPA6010	1	mg/kg	Cadmium	13.79	
D-401-1A-101317-6-8	SA_18-2mm	EPA6010	1	mg/kg	Calcium	1913.00	
D-401-1A-101317-6-8	SA_18-2mm	EPA6010	1	mg/kg	Chromium	27.31	
D-401-1A-101317-6-8	SA_18-2mm	EPA6010	1	mg/kg	Cobalt	5.48	
D-401-1A-101317-6-8	SA_18-2mm	EPA6010	1	mg/kg	Copper	12.57	
D-401-1A-101317-6-8	SA_18-2mm	EPA6010	1	mg/kg	Iron	23248.19	
D-401-1A-101317-6-8	SA_18-2mm	EPA6010	1	mg/kg	Lead	41.16	dup
D-401-1A-101317-6-8	SA_18-2mm	EPA6010	1	mg/kg	Magnesium	2394.34	
D-401-1A-101317-6-8	SA_18-2mm	EPA6010	1	mg/kg	Manganese	545.52	
D-401-1A-101317-6-8	SA_18-2mm	EPA6010	1	mg/kg	Nickel	13.30	
D-401-1A-101317-6-8	SA_18-2mm	EPA6010	1	mg/kg	Phosphorus	870.40	
D-401-1A-101317-6-8	SA_18-2mm	EPA6010	1	mg/kg	Potassium	872.20	crm
D-401-1A-101317-6-8	SA_18-2mm	EPA6010	1	mg/kg	Selenium	3.66	rl
D-401-1A-101317-6-8	SA_18-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL
D-401-1A-101317-6-8	SA_18-2mm	EPA6010	1	mg/kg	Sodium	97.90	
D-401-1A-101317-6-8	SA_18-2mm	EPA6010	1	mg/kg	Thallium	0.50	rl
D-401-1A-101317-6-8	SA_18-2mm	EPA6010	1	mg/kg	Vanadium	57.15	
D-401-1A-101317-6-8	SA_18-2mm	EPA6010	1	mg/kg	Zinc	259.79	
D-401-1B-101317-6-8	SA_19-2mm	EPA6010	1	mg/kg	Aluminum	17608.39	
D-401-1B-101317-6-8	SA_19-2mm	EPA6010	1	mg/kg	Antimony	3.16	rl
D-401-1B-101317-6-8	SA_19-2mm	EPA6010	1	mg/kg	Arsenic	5.32	dup
D-401-1B-101317-6-8	SA_19-2mm	EPA6010	1	mg/kg	Barium	118.85	



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-1B-101317-6-8	SA_19-2mm	EPA6010	1	mg/kg	Beryllium	0.57	crm rl
D-401-1B-101317-6-8	SA_19-2mm	EPA6010	1	mg/kg	Cadmium	1.95	
D-401-1B-101317-6-8	SA_19-2mm	EPA6010	1	mg/kg	Calcium	2496.91	
D-401-1B-101317-6-8	SA_19-2mm	EPA6010	1	mg/kg	Chromium	35.35	
D-401-1B-101317-6-8	SA_19-2mm	EPA6010	1	mg/kg	Cobalt	6.36	
D-401-1B-101317-6-8	SA_19-2mm	EPA6010	1	mg/kg	Copper	15.06	
D-401-1B-101317-6-8	SA_19-2mm	EPA6010	1	mg/kg	Iron	27158.87	
D-401-1B-101317-6-8	SA_19-2mm	EPA6010	1	mg/kg	Lead	11.04	dup
D-401-1B-101317-6-8	SA_19-2mm	EPA6010	1	mg/kg	Magnesium	2728.33	
D-401-1B-101317-6-8	SA_19-2mm	EPA6010	1	mg/kg	Manganese	463.05	
D-401-1B-101317-6-8	SA_19-2mm	EPA6010	1	mg/kg	Nickel	15.54	
D-401-1B-101317-6-8	SA_19-2mm	EPA6010	1	mg/kg	Phosphorus	1005.33	
D-401-1B-101317-6-8	SA_19-2mm	EPA6010	1	mg/kg	Potassium	945.66	crm
D-401-1B-101317-6-8	SA_19-2mm	EPA6010	1	mg/kg	Selenium	1.96	rl
D-401-1B-101317-6-8	SA_19-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL
D-401-1B-101317-6-8	SA_19-2mm	EPA6010	1	mg/kg	Sodium	134.67	
D-401-1B-101317-6-8	SA_19-2mm	EPA6010	1	mg/kg	Thallium	0.43	rl
D-401-1B-101317-6-8	SA_19-2mm	EPA6010	1	mg/kg	Vanadium	68.83	
D-401-1B-101317-6-8	SA_19-2mm	EPA6010	1	mg/kg	Zinc	146.34	
D-401-1C-101317-6-8	SA_20-2mm	EPA6010	1	mg/kg	Aluminum	15574.18	
D-401-1C-101317-6-8	SA_20-2mm	EPA6010	1	mg/kg	Antimony	2.94	rl
D-401-1C-101317-6-8	SA_20-2mm	EPA6010	1	mg/kg	Arsenic	4.16	dup
D-401-1C-101317-6-8	SA_20-2mm	EPA6010	1	mg/kg	Barium	110.27	
D-401-1C-101317-6-8	SA_20-2mm	EPA6010	1	mg/kg	Beryllium	0.51	crm rl
D-401-1C-101317-6-8	SA_20-2mm	EPA6010	1	mg/kg	Cadmium	0.55	rl
D-401-1C-101317-6-8	SA_20-2mm	EPA6010	1	mg/kg	Calcium	2522.92	
D-401-1C-101317-6-8	SA_20-2mm	EPA6010	1	mg/kg	Chromium	35.77	
D-401-1C-101317-6-8	SA_20-2mm	EPA6010	1	mg/kg	Cobalt	6.45	



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Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-1C-101317-6-8	SA_20-2mm	EPA6010	1	mg/kg	Copper	13.49	
D-401-1C-101317-6-8	SA_20-2mm	EPA6010	1	mg/kg	Iron	29885.31	
D-401-1C-101317-6-8	SA_20-2mm	EPA6010	1	mg/kg	Lead	7.39	dup
D-401-1C-101317-6-8	SA_20-2mm	EPA6010	1	mg/kg	Magnesium	2912.31	
D-401-1C-101317-6-8	SA_20-2mm	EPA6010	1	mg/kg	Manganese	374.77	
D-401-1C-101317-6-8	SA_20-2mm	EPA6010	1	mg/kg	Nickel	14.62	
D-401-1C-101317-6-8	SA_20-2mm	EPA6010	1	mg/kg	Phosphorus	910.53	
D-401-1C-101317-6-8	SA_20-2mm	EPA6010	1	mg/kg	Potassium	920.18	crm
D-401-1C-101317-6-8	SA_20-2mm	EPA6010	1	mg/kg	Selenium	2.07	rl
D-401-1C-101317-6-8	SA_20-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL
D-401-1C-101317-6-8	SA_20-2mm	EPA6010	1	mg/kg	Sodium	126.28	
D-401-1C-101317-6-8	SA_20-2mm	EPA6010	1	mg/kg	Thallium	0.75	rl
D-401-1C-101317-6-8	SA_20-2mm	EPA6010	1	mg/kg	Vanadium	78.57	
D-401-1C-101317-6-8	SA_20-2mm	EPA6010	1	mg/kg	Zinc	47.99	
D-401-1A-101317-10-12	SA_21-2mm	EPA6010	1	mg/kg	Aluminum	12748.00	
D-401-1A-101317-10-12	SA_21-2mm	EPA6010	1	mg/kg	Antimony	2.61	rl
D-401-1A-101317-10-12	SA_21-2mm	EPA6010	1	mg/kg	Arsenic	3.62	dup
D-401-1A-101317-10-12	SA_21-2mm	EPA6010	1	mg/kg	Barium	109.98	
D-401-1A-101317-10-12	SA_21-2mm	EPA6010	1	mg/kg	Beryllium	0.38	crm rl
D-401-1A-101317-10-12	SA_21-2mm	EPA6010	1	mg/kg	Cadmium	0.90	rl
D-401-1A-101317-10-12	SA_21-2mm	EPA6010	1	mg/kg	Calcium	2140.55	
D-401-1A-101317-10-12	SA_21-2mm	EPA6010	1	mg/kg	Chromium	22.32	
D-401-1A-101317-10-12	SA_21-2mm	EPA6010	1	mg/kg	Cobalt	5.34	
D-401-1A-101317-10-12	SA_21-2mm	EPA6010	1	mg/kg	Copper	11.58	
D-401-1A-101317-10-12	SA_21-2mm	EPA6010	1	mg/kg	Iron	19525.60	
D-401-1A-101317-10-12	SA_21-2mm	EPA6010	1	mg/kg	Lead	14.09	dup
D-401-1A-101317-10-12	SA_21-2mm	EPA6010	1	mg/kg	Magnesium	3204.49	
D-401-1A-101317-10-12	SA_21-2mm	EPA6010	1	mg/kg	Manganese	325.18	



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-1A-101317-10-12	SA_21-2mm	EPA6010	1	mg/kg	Nickel	11.24	
D-401-1A-101317-10-12	SA_21-2mm	EPA6010	1	mg/kg	Phosphorus	814.00	
D-401-1A-101317-10-12	SA_21-2mm	EPA6010	1	mg/kg	Potassium	1024.46	crm
D-401-1A-101317-10-12	SA_21-2mm	EPA6010	1	mg/kg	Selenium	2.90	rl
D-401-1A-101317-10-12	SA_21-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL
D-401-1A-101317-10-12	SA_21-2mm	EPA6010	1	mg/kg	Sodium	102.06	
D-401-1A-101317-10-12	SA_21-2mm	EPA6010	1	mg/kg	Thallium	0.61	rl
D-401-1A-101317-10-12	SA_21-2mm	EPA6010	1	mg/kg	Vanadium	47.63	
D-401-1A-101317-10-12	SA_21-2mm	EPA6010	1	mg/kg	Zinc	246.84	
D-401-1C-101317-10-12	SA_22-2mm	EPA6010	1	mg/kg	Aluminum	15046.73	
D-401-1C-101317-10-12	SA_22-2mm	EPA6010	1	mg/kg	Antimony	2.78	rl
D-401-1C-101317-10-12	SA_22-2mm	EPA6010	1	mg/kg	Arsenic	2.94	dup
D-401-1C-101317-10-12	SA_22-2mm	EPA6010	1	mg/kg	Barium	102.40	
D-401-1C-101317-10-12	SA_22-2mm	EPA6010	1	mg/kg	Beryllium	0.49	crm rl
D-401-1C-101317-10-12	SA_22-2mm	EPA6010	1	mg/kg	Cadmium	0.47	rl
D-401-1C-101317-10-12	SA_22-2mm	EPA6010	1	mg/kg	Calcium	2584.08	
D-401-1C-101317-10-12	SA_22-2mm	EPA6010	1	mg/kg	Chromium	28.41	
D-401-1C-101317-10-12	SA_22-2mm	EPA6010	1	mg/kg	Cobalt	5.76	
D-401-1C-101317-10-12	SA_22-2mm	EPA6010	1	mg/kg	Copper	13.76	
D-401-1C-101317-10-12	SA_22-2mm	EPA6010	1	mg/kg	Iron	26817.76	
D-401-1C-101317-10-12	SA_22-2mm	EPA6010	1	mg/kg	Lead	6.85	dup
D-401-1C-101317-10-12	SA_22-2mm	EPA6010	1	mg/kg	Magnesium	2848.37	
D-401-1C-101317-10-12	SA_22-2mm	EPA6010	1	mg/kg	Manganese	330.51	
D-401-1C-101317-10-12	SA_22-2mm	EPA6010	1	mg/kg	Nickel	12.96	
D-401-1C-101317-10-12	SA_22-2mm	EPA6010	1	mg/kg	Phosphorus	850.36	
D-401-1C-101317-10-12	SA_22-2mm	EPA6010	1	mg/kg	Potassium	890.08	crm
D-401-1C-101317-10-12	SA_22-2mm	EPA6010	1	mg/kg	Selenium	2.79	rl
D-401-1C-101317-10-12	SA_22-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL



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Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-1C-101317-10-12	SA_22-2mm	EPA6010	1	mg/kg	Sodium	146.33	
D-401-1C-101317-10-12	SA_22-2mm	EPA6010	1	mg/kg	Thallium	0.79	rl
D-401-1C-101317-10-12	SA_22-2mm	EPA6010	1	mg/kg	Vanadium	71.47	
D-401-1C-101317-10-12	SA_22-2mm	EPA6010	1	mg/kg	Zinc	47.39	
D-401-1D-101317-10-12	SA_23-2mm	EPA6010	1	mg/kg	Aluminum	18827.28	
D-401-1D-101317-10-12	SA_23-2mm	EPA6010	1	mg/kg	Antimony	2.11	rl
D-401-1D-101317-10-12	SA_23-2mm	EPA6010	1	mg/kg	Arsenic	4.87	dup
D-401-1D-101317-10-12	SA_23-2mm	EPA6010	1	mg/kg	Barium	135.35	
D-401-1D-101317-10-12	SA_23-2mm	EPA6010	1	mg/kg	Beryllium	0.63	crm rl
D-401-1D-101317-10-12	SA_23-2mm	EPA6010	1	mg/kg	Cadmium	0.57	rl
D-401-1D-101317-10-12	SA_23-2mm	EPA6010	1	mg/kg	Calcium	2730.91	
D-401-1D-101317-10-12	SA_23-2mm	EPA6010	1	mg/kg	Chromium	32.71	
D-401-1D-101317-10-12	SA_23-2mm	EPA6010	1	mg/kg	Cobalt	6.75	
D-401-1D-101317-10-12	SA_23-2mm	EPA6010	1	mg/kg	Copper	17.83	
D-401-1D-101317-10-12	SA_23-2mm	EPA6010	1	mg/kg	Iron	28702.35	
D-401-1D-101317-10-12	SA_23-2mm	EPA6010	1	mg/kg	Lead	7.89	dup
D-401-1D-101317-10-12	SA_23-2mm	EPA6010	1	mg/kg	Magnesium	2853.84	
D-401-1D-101317-10-12	SA_23-2mm	EPA6010	1	mg/kg	Manganese	439.37	
D-401-1D-101317-10-12	SA_23-2mm	EPA6010	1	mg/kg	Nickel	14.54	
D-401-1D-101317-10-12	SA_23-2mm	EPA6010	1	mg/kg	Phosphorus	1137.39	
D-401-1D-101317-10-12	SA_23-2mm	EPA6010	1	mg/kg	Potassium	1032.22	crm
D-401-1D-101317-10-12	SA_23-2mm	EPA6010	1	mg/kg	Selenium	3.38	rl
D-401-1D-101317-10-12	SA_23-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL
D-401-1D-101317-10-12	SA_23-2mm	EPA6010	1	mg/kg	Sodium	203.70	
D-401-1D-101317-10-12	SA_23-2mm	EPA6010	1	mg/kg	Thallium	0.35	rl
D-401-1D-101317-10-12	SA_23-2mm	EPA6010	1	mg/kg	Vanadium	77.67	
D-401-1D-101317-10-12	SA_23-2mm	EPA6010	1	mg/kg	Zinc	48.40	
D-401-1A-101317-8-10	SA_24-2mm	EPA6010	1	mg/kg	Aluminum	13388.90	



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-1A-101317-8-10	SA_24-2mm	EPA6010	1	mg/kg	Antimony	3.59	rl
D-401-1A-101317-8-10	SA_24-2mm	EPA6010	1	mg/kg	Arsenic	3.85	dup
D-401-1A-101317-8-10	SA_24-2mm	EPA6010	1	mg/kg	Barium	130.48	
D-401-1A-101317-8-10	SA_24-2mm	EPA6010	1	mg/kg	Beryllium	0.44	crm rl
D-401-1A-101317-8-10	SA_24-2mm	EPA6010	1	mg/kg	Cadmium	2.55	
D-401-1A-101317-8-10	SA_24-2mm	EPA6010	1	mg/kg	Calcium	2251.59	
D-401-1A-101317-8-10	SA_24-2mm	EPA6010	1	mg/kg	Chromium	27.45	
D-401-1A-101317-8-10	SA_24-2mm	EPA6010	1	mg/kg	Cobalt	5.32	
D-401-1A-101317-8-10	SA_24-2mm	EPA6010	1	mg/kg	Copper	12.88	
D-401-1A-101317-8-10	SA_24-2mm	EPA6010	1	mg/kg	Iron	24591.26	
D-401-1A-101317-8-10	SA_24-2mm	EPA6010	1	mg/kg	Lead	14.20	dup
D-401-1A-101317-8-10	SA_24-2mm	EPA6010	1	mg/kg	Magnesium	2644.23	
D-401-1A-101317-8-10	SA_24-2mm	EPA6010	1	mg/kg	Manganese	382.37	
D-401-1A-101317-8-10	SA_24-2mm	EPA6010	1	mg/kg	Nickel	12.68	
D-401-1A-101317-8-10	SA_24-2mm	EPA6010	1	mg/kg	Phosphorus	806.48	
D-401-1A-101317-8-10	SA_24-2mm	EPA6010	1	mg/kg	Potassium	1057.41	crm
D-401-1A-101317-8-10	SA_24-2mm	EPA6010	1	mg/kg	Selenium	3.42	rl
D-401-1A-101317-8-10	SA_24-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL
D-401-1A-101317-8-10	SA_24-2mm	EPA6010	1	mg/kg	Sodium	122.26	
D-401-1A-101317-8-10	SA_24-2mm	EPA6010	1	mg/kg	Thallium	0.65	rl
D-401-1A-101317-8-10	SA_24-2mm	EPA6010	1	mg/kg	Vanadium	60.30	
D-401-1A-101317-8-10	SA_24-2mm	EPA6010	1	mg/kg	Zinc	335.35	
D-401-1B-101317-8-10	SA_25-2mm	EPA6010	1	mg/kg	Aluminum	17425.08	
D-401-1B-101317-8-10	SA_25-2mm	EPA6010	1	mg/kg	Antimony	2.07	rl
D-401-1B-101317-8-10	SA_25-2mm	EPA6010	1	mg/kg	Arsenic	3.60	dup
D-401-1B-101317-8-10	SA_25-2mm	EPA6010	1	mg/kg	Barium	116.30	
D-401-1B-101317-8-10	SA_25-2mm	EPA6010	1	mg/kg	Beryllium	0.54	crm rl
D-401-1B-101317-8-10	SA_25-2mm	EPA6010	1	mg/kg	Cadmium	0.50	rl



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-1B-101317-8-10	SA_25-2mm	EPA6010	1	mg/kg	Calcium	2719.02	
D-401-1B-101317-8-10	SA_25-2mm	EPA6010	1	mg/kg	Chromium	29.93	
D-401-1B-101317-8-10	SA_25-2mm	EPA6010	1	mg/kg	Cobalt	5.88	
D-401-1B-101317-8-10	SA_25-2mm	EPA6010	1	mg/kg	Copper	15.69	
D-401-1B-101317-8-10	SA_25-2mm	EPA6010	1	mg/kg	Iron	24259.62	
D-401-1B-101317-8-10	SA_25-2mm	EPA6010	1	mg/kg	Lead	6.45	dup
D-401-1B-101317-8-10	SA_25-2mm	EPA6010	1	mg/kg	Magnesium	3019.78	
D-401-1B-101317-8-10	SA_25-2mm	EPA6010	1	mg/kg	Manganese	347.38	
D-401-1B-101317-8-10	SA_25-2mm	EPA6010	1	mg/kg	Nickel	14.39	
D-401-1B-101317-8-10	SA_25-2mm	EPA6010	1	mg/kg	Phosphorus	898.23	
D-401-1B-101317-8-10	SA_25-2mm	EPA6010	1	mg/kg	Potassium	989.68	crm
D-401-1B-101317-8-10	SA_25-2mm	EPA6010	1	mg/kg	Selenium	3.45	rl
D-401-1B-101317-8-10	SA_25-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL
D-401-1B-101317-8-10	SA_25-2mm	EPA6010	1	mg/kg	Sodium	207.83	
D-401-1B-101317-8-10	SA_25-2mm	EPA6010	1	mg/kg	Thallium	0.76	rl
D-401-1B-101317-8-10	SA_25-2mm	EPA6010	1	mg/kg	Vanadium	63.00	
D-401-1B-101317-8-10	SA_25-2mm	EPA6010	1	mg/kg	Zinc	94.70	
D-401-2C-101317-2-4D	SA_26-2mm	EPA6010	1	mg/kg	Aluminum	17117.45	
D-401-2C-101317-2-4D	SA_26-2mm	EPA6010	1	mg/kg	Antimony	7.63	
D-401-2C-101317-2-4D	SA_26-2mm	EPA6010	1	mg/kg	Arsenic	18.55	dup
D-401-2C-101317-2-4D	SA_26-2mm	EPA6010	1	mg/kg	Barium	181.65	
D-401-2C-101317-2-4D	SA_26-2mm	EPA6010	1	mg/kg	Beryllium	0.54	crm rl
D-401-2C-101317-2-4D	SA_26-2mm	EPA6010	1	mg/kg	Cadmium	10.84	
D-401-2C-101317-2-4D	SA_26-2mm	EPA6010	1	mg/kg	Calcium	2460.26	
D-401-2C-101317-2-4D	SA_26-2mm	EPA6010	1	mg/kg	Chromium	27.24	
D-401-2C-101317-2-4D	SA_26-2mm	EPA6010	1	mg/kg	Cobalt	6.12	
D-401-2C-101317-2-4D	SA_26-2mm	EPA6010	1	mg/kg	Copper	19.42	
D-401-2C-101317-2-4D	SA_26-2mm	EPA6010	1	mg/kg	Iron	24448.79	



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-2C-101317-2-4D	SA_26-2mm	EPA6010	1	mg/kg	Lead	68.94	dup
D-401-2C-101317-2-4D	SA_26-2mm	EPA6010	1	mg/kg	Magnesium	2928.45	
D-401-2C-101317-2-4D	SA_26-2mm	EPA6010	1	mg/kg	Manganese	666.10	
D-401-2C-101317-2-4D	SA_26-2mm	EPA6010	1	mg/kg	Nickel	14.13	
D-401-2C-101317-2-4D	SA_26-2mm	EPA6010	1	mg/kg	Phosphorus	1084.80	
D-401-2C-101317-2-4D	SA_26-2mm	EPA6010	1	mg/kg	Potassium	1087.70	crm
D-401-2C-101317-2-4D	SA_26-2mm	EPA6010	1	mg/kg	Selenium	3.28	rl
D-401-2C-101317-2-4D	SA_26-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL
D-401-2C-101317-2-4D	SA_26-2mm	EPA6010	1	mg/kg	Sodium	143.28	
D-401-2C-101317-2-4D	SA_26-2mm	EPA6010	1	mg/kg	Thallium	0.60	rl
D-401-2C-101317-2-4D	SA_26-2mm	EPA6010	1	mg/kg	Vanadium	59.85	
D-401-2C-101317-2-4D	SA_26-2mm	EPA6010	1	mg/kg	Zinc	772.52	
D-258-3C-101317-2-4D	SA_27-2mm	EPA6010	1	mg/kg	Aluminum	9921.84	
D-258-3C-101317-2-4D	SA_27-2mm	EPA6010	1	mg/kg	Antimony	6.88	
D-258-3C-101317-2-4D	SA_27-2mm	EPA6010	1	mg/kg	Arsenic	14.85	dup
D-258-3C-101317-2-4D	SA_27-2mm	EPA6010	1	mg/kg	Barium	97.59	
D-258-3C-101317-2-4D	SA_27-2mm	EPA6010	1	mg/kg	Beryllium	0.32	crm rl
D-258-3C-101317-2-4D	SA_27-2mm	EPA6010	1	mg/kg	Cadmium	4.69	
D-258-3C-101317-2-4D	SA_27-2mm	EPA6010	1	mg/kg	Calcium	2609.11	
D-258-3C-101317-2-4D	SA_27-2mm	EPA6010	1	mg/kg	Chromium	11.97	
D-258-3C-101317-2-4D	SA_27-2mm	EPA6010	1	mg/kg	Cobalt	3.33	
D-258-3C-101317-2-4D	SA_27-2mm	EPA6010	1	mg/kg	Copper	17.41	
D-258-3C-101317-2-4D	SA_27-2mm	EPA6010	1	mg/kg	Iron	11081.23	
D-258-3C-101317-2-4D	SA_27-2mm	EPA6010	1	mg/kg	Lead	246.63	dup
D-258-3C-101317-2-4D	SA_27-2mm	EPA6010	1	mg/kg	Magnesium	2217.52	
D-258-3C-101317-2-4D	SA_27-2mm	EPA6010	1	mg/kg	Manganese	310.36	
D-258-3C-101317-2-4D	SA_27-2mm	EPA6010	1	mg/kg	Nickel	7.72	
D-258-3C-101317-2-4D	SA_27-2mm	EPA6010	1	mg/kg	Phosphorus	1075.81	



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-258-3C-101317-2-4D	SA_27-2mm	EPA6010	1	mg/kg	Potassium	815.12	crm
D-258-3C-101317-2-4D	SA_27-2mm	EPA6010	1	mg/kg	Selenium	2.81	rl
D-258-3C-101317-2-4D	SA_27-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL
D-258-3C-101317-2-4D	SA_27-2mm	EPA6010	1	mg/kg	Sodium	88.82	
D-258-3C-101317-2-4D	SA_27-2mm	EPA6010	1	mg/kg	Thallium	0.60	rl
D-258-3C-101317-2-4D	SA_27-2mm	EPA6010	1	mg/kg	Vanadium	23.83	
D-258-3C-101317-2-4D	SA_27-2mm	EPA6010	1	mg/kg	Zinc	197.17	
D-441-1B-101317-2-4D	SA_28-2mm	EPA6010	1	mg/kg	Aluminum	20782.91	
D-441-1B-101317-2-4D	SA_28-2mm	EPA6010	1	mg/kg	Antimony	6.94	
D-441-1B-101317-2-4D	SA_28-2mm	EPA6010	1	mg/kg	Arsenic	20.39	dup
D-441-1B-101317-2-4D	SA_28-2mm	EPA6010	1	mg/kg	Barium	253.21	
D-441-1B-101317-2-4D	SA_28-2mm	EPA6010	1	mg/kg	Beryllium	0.69	crm rl
D-441-1B-101317-2-4D	SA_28-2mm	EPA6010	1	mg/kg	Cadmium	2.56	
D-441-1B-101317-2-4D	SA_28-2mm	EPA6010	1	mg/kg	Calcium	6958.21	
D-441-1B-101317-2-4D	SA_28-2mm	EPA6010	1	mg/kg	Chromium	34.30	
D-441-1B-101317-2-4D	SA_28-2mm	EPA6010	1	mg/kg	Cobalt	9.77	
D-441-1B-101317-2-4D	SA_28-2mm	EPA6010	1	mg/kg	Copper	33.13	
D-441-1B-101317-2-4D	SA_28-2mm	EPA6010	1	mg/kg	Iron	21874.05	
D-441-1B-101317-2-4D	SA_28-2mm	EPA6010	1	mg/kg	Lead	39.05	dup
D-441-1B-101317-2-4D	SA_28-2mm	EPA6010	1	mg/kg	Magnesium	4725.57	
D-441-1B-101317-2-4D	SA_28-2mm	EPA6010	1	mg/kg	Manganese	699.51	
D-441-1B-101317-2-4D	SA_28-2mm	EPA6010	1	mg/kg	Nickel	21.85	
D-441-1B-101317-2-4D	SA_28-2mm	EPA6010	1	mg/kg	Phosphorus	2003.91	
D-441-1B-101317-2-4D	SA_28-2mm	EPA6010	1	mg/kg	Potassium	2458.39	crm
D-441-1B-101317-2-4D	SA_28-2mm	EPA6010	1	mg/kg	Selenium	4.73	rl
D-441-1B-101317-2-4D	SA_28-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL
D-441-1B-101317-2-4D	SA_28-2mm	EPA6010	1	mg/kg	Sodium	265.10	
D-441-1B-101317-2-4D	SA_28-2mm	EPA6010	1	mg/kg	Thallium	0.78	rl



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-441-1B-101317-2-4D	SA_28-2mm	EPA6010	1	mg/kg	Vanadium	51.61	
D-441-1B-101317-2-4D	SA_28-2mm	EPA6010	1	mg/kg	Zinc	175.84	
D-401-1B-101317-2-4D	SA_29-2mm	EPA6010	1	mg/kg	Aluminum	16591.88	
D-401-1B-101317-2-4D	SA_29-2mm	EPA6010	1	mg/kg	Antimony	3.85	rl
D-401-1B-101317-2-4D	SA_29-2mm	EPA6010	1	mg/kg	Arsenic	7.09	dup
D-401-1B-101317-2-4D	SA_29-2mm	EPA6010	1	mg/kg	Barium	142.41	
D-401-1B-101317-2-4D	SA_29-2mm	EPA6010	1	mg/kg	Beryllium	0.51	crm rl
D-401-1B-101317-2-4D	SA_29-2mm	EPA6010	1	mg/kg	Cadmium	1.82	
D-401-1B-101317-2-4D	SA_29-2mm	EPA6010	1	mg/kg	Calcium	2993.04	
D-401-1B-101317-2-4D	SA_29-2mm	EPA6010	1	mg/kg	Chromium	27.94	
D-401-1B-101317-2-4D	SA_29-2mm	EPA6010	1	mg/kg	Cobalt	6.53	
D-401-1B-101317-2-4D	SA_29-2mm	EPA6010	1	mg/kg	Copper	15.49	
D-401-1B-101317-2-4D	SA_29-2mm	EPA6010	1	mg/kg	Iron	25428.99	
D-401-1B-101317-2-4D	SA_29-2mm	EPA6010	1	mg/kg	Lead	14.56	dup
D-401-1B-101317-2-4D	SA_29-2mm	EPA6010	1	mg/kg	Magnesium	3047.38	
D-401-1B-101317-2-4D	SA_29-2mm	EPA6010	1	mg/kg	Manganese	555.65	
D-401-1B-101317-2-4D	SA_29-2mm	EPA6010	1	mg/kg	Nickel	15.01	
D-401-1B-101317-2-4D	SA_29-2mm	EPA6010	1	mg/kg	Phosphorus	1060.29	
D-401-1B-101317-2-4D	SA_29-2mm	EPA6010	1	mg/kg	Potassium	1143.25	crm
D-401-1B-101317-2-4D	SA_29-2mm	EPA6010	1	mg/kg	Selenium	3.96	rl
D-401-1B-101317-2-4D	SA_29-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL
D-401-1B-101317-2-4D	SA_29-2mm	EPA6010	1	mg/kg	Sodium	130.57	
D-401-1B-101317-2-4D	SA_29-2mm	EPA6010	1	mg/kg	Thallium	0.66	rl
D-401-1B-101317-2-4D	SA_29-2mm	EPA6010	1	mg/kg	Vanadium	61.62	
D-401-1B-101317-2-4D	SA_29-2mm	EPA6010	1	mg/kg	Zinc	237.43	
D-401-1B-101317-10-12	SA_30-2mm	EPA6010	1	mg/kg	Aluminum	17620.35	
D-401-1B-101317-10-12	SA_30-2mm	EPA6010	1	mg/kg	Antimony	2.17	rl
D-401-1B-101317-10-12	SA_30-2mm	EPA6010	1	mg/kg	Arsenic	3.67	dup



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-1B-101317-10-12	SA_30-2mm	EPA6010	1	mg/kg	Barium	120.81	
D-401-1B-101317-10-12	SA_30-2mm	EPA6010	1	mg/kg	Beryllium	0.55	crm rl
D-401-1B-101317-10-12	SA_30-2mm	EPA6010	1	mg/kg	Cadmium	0.50	rl
D-401-1B-101317-10-12	SA_30-2mm	EPA6010	1	mg/kg	Calcium	2311.72	
D-401-1B-101317-10-12	SA_30-2mm	EPA6010	1	mg/kg	Chromium	29.61	
D-401-1B-101317-10-12	SA_30-2mm	EPA6010	1	mg/kg	Cobalt	6.82	
D-401-1B-101317-10-12	SA_30-2mm	EPA6010	1	mg/kg	Copper	15.93	
D-401-1B-101317-10-12	SA_30-2mm	EPA6010	1	mg/kg	Iron	27174.67	
D-401-1B-101317-10-12	SA_30-2mm	EPA6010	1	mg/kg	Lead	7.03	dup
D-401-1B-101317-10-12	SA_30-2mm	EPA6010	1	mg/kg	Magnesium	2892.40	
D-401-1B-101317-10-12	SA_30-2mm	EPA6010	1	mg/kg	Manganese	337.49	
D-401-1B-101317-10-12	SA_30-2mm	EPA6010	1	mg/kg	Nickel	13.71	
D-401-1B-101317-10-12	SA_30-2mm	EPA6010	1	mg/kg	Phosphorus	912.93	
D-401-1B-101317-10-12	SA_30-2mm	EPA6010	1	mg/kg	Potassium	965.83	crm
D-401-1B-101317-10-12	SA_30-2mm	EPA6010	1	mg/kg	Selenium	3.56	rl
D-401-1B-101317-10-12	SA_30-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL
D-401-1B-101317-10-12	SA_30-2mm	EPA6010	1	mg/kg	Sodium	150.20	
D-401-1B-101317-10-12	SA_30-2mm	EPA6010	1	mg/kg	Thallium	0.49	rl
D-401-1B-101317-10-12	SA_30-2mm	EPA6010	1	mg/kg	Vanadium	68.38	
D-401-1B-101317-10-12	SA_30-2mm	EPA6010	1	mg/kg	Zinc	51.09	
D-441-1B-101317-4-6	SA_31-2mm	EPA6010	1	mg/kg	Aluminum	20486.17	
D-441-1B-101317-4-6	SA_31-2mm	EPA6010	1	mg/kg	Antimony	7.53	
D-441-1B-101317-4-6	SA_31-2mm	EPA6010	1	mg/kg	Arsenic	15.48	dup
D-441-1B-101317-4-6	SA_31-2mm	EPA6010	1	mg/kg	Barium	248.14	
D-441-1B-101317-4-6	SA_31-2mm	EPA6010	1	mg/kg	Beryllium	0.66	crm rl
D-441-1B-101317-4-6	SA_31-2mm	EPA6010	1	mg/kg	Cadmium	3.86	
D-441-1B-101317-4-6	SA_31-2mm	EPA6010	1	mg/kg	Calcium	6922.07	
D-441-1B-101317-4-6	SA_31-2mm	EPA6010	1	mg/kg	Chromium	31.51	



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-441-1B-101317-4-6	SA_31-2mm	EPA6010	1	mg/kg	Cobalt	9.00	
D-441-1B-101317-4-6	SA_31-2mm	EPA6010	1	mg/kg	Copper	32.97	
D-441-1B-101317-4-6	SA_31-2mm	EPA6010	1	mg/kg	Iron	21969.44	
D-441-1B-101317-4-6	SA_31-2mm	EPA6010	1	mg/kg	Lead	188.34	dup
D-441-1B-101317-4-6	SA_31-2mm	EPA6010	1	mg/kg	Magnesium	4663.53	
D-441-1B-101317-4-6	SA_31-2mm	EPA6010	1	mg/kg	Manganese	757.94	
D-441-1B-101317-4-6	SA_31-2mm	EPA6010	1	mg/kg	Nickel	21.74	
D-441-1B-101317-4-6	SA_31-2mm	EPA6010	1	mg/kg	Phosphorus	1961.51	
D-441-1B-101317-4-6	SA_31-2mm	EPA6010	1	mg/kg	Potassium	2500.80	crm
D-441-1B-101317-4-6	SA_31-2mm	EPA6010	1	mg/kg	Selenium	2.77	rl
D-441-1B-101317-4-6	SA_31-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL
D-441-1B-101317-4-6	SA_31-2mm	EPA6010	1	mg/kg	Sodium	249.06	
D-441-1B-101317-4-6	SA_31-2mm	EPA6010	1	mg/kg	Thallium	0.39	rl
D-441-1B-101317-4-6	SA_31-2mm	EPA6010	1	mg/kg	Vanadium	52.76	
D-441-1B-101317-4-6	SA_31-2mm	EPA6010	1	mg/kg	Zinc	224.80	
D-441-1B-101317-6-8	SA_32-2mm	EPA6010	1	mg/kg	Aluminum	23404.98	
D-441-1B-101317-6-8	SA_32-2mm	EPA6010	1	mg/kg	Antimony	4.64	rl
D-441-1B-101317-6-8	SA_32-2mm	EPA6010	1	mg/kg	Arsenic	10.60	dup
D-441-1B-101317-6-8	SA_32-2mm	EPA6010	1	mg/kg	Barium	258.29	
D-441-1B-101317-6-8	SA_32-2mm	EPA6010	1	mg/kg	Beryllium	0.75	crm rl
D-441-1B-101317-6-8	SA_32-2mm	EPA6010	1	mg/kg	Cadmium	1.30	
D-441-1B-101317-6-8	SA_32-2mm	EPA6010	1	mg/kg	Calcium	6100.21	
D-441-1B-101317-6-8	SA_32-2mm	EPA6010	1	mg/kg	Chromium	35.65	
D-441-1B-101317-6-8	SA_32-2mm	EPA6010	1	mg/kg	Cobalt	9.95	
D-441-1B-101317-6-8	SA_32-2mm	EPA6010	1	mg/kg	Copper	26.49	
D-441-1B-101317-6-8	SA_32-2mm	EPA6010	1	mg/kg	Iron	23728.28	
D-441-1B-101317-6-8	SA_32-2mm	EPA6010	1	mg/kg	Lead	33.51	dup
D-441-1B-101317-6-8	SA_32-2mm	EPA6010	1	mg/kg	Magnesium	4766.33	



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-441-1B-101317-6-8	SA_32-2mm	EPA6010	1	mg/kg	Manganese	778.26	
D-441-1B-101317-6-8	SA_32-2mm	EPA6010	1	mg/kg	Nickel	23.74	
D-441-1B-101317-6-8	SA_32-2mm	EPA6010	1	mg/kg	Phosphorus	1776.58	
D-441-1B-101317-6-8	SA_32-2mm	EPA6010	1	mg/kg	Potassium	2599.95	crm
D-441-1B-101317-6-8	SA_32-2mm	EPA6010	1	mg/kg	Selenium	4.06	rl
D-441-1B-101317-6-8	SA_32-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL
D-441-1B-101317-6-8	SA_32-2mm	EPA6010	1	mg/kg	Sodium	352.55	
D-441-1B-101317-6-8	SA_32-2mm	EPA6010	1	mg/kg	Thallium	0.69	rl
D-441-1B-101317-6-8	SA_32-2mm	EPA6010	1	mg/kg	Vanadium	58.23	
D-441-1B-101317-6-8	SA_32-2mm	EPA6010	1	mg/kg	Zinc	104.18	
D-441-1B-101317-8-10	SA_33-2mm	EPA6010	1	mg/kg	Aluminum	22641.38	
D-441-1B-101317-8-10	SA_33-2mm	EPA6010	1	mg/kg	Antimony	3.19	rl
D-441-1B-101317-8-10	SA_33-2mm	EPA6010	1	mg/kg	Arsenic	6.90	dup
D-441-1B-101317-8-10	SA_33-2mm	EPA6010	1	mg/kg	Barium	260.36	
D-441-1B-101317-8-10	SA_33-2mm	EPA6010	1	mg/kg	Beryllium	0.71	crm rl
D-441-1B-101317-8-10	SA_33-2mm	EPA6010	1	mg/kg	Cadmium	0.88	rl
D-441-1B-101317-8-10	SA_33-2mm	EPA6010	1	mg/kg	Calcium	5272.72	
D-441-1B-101317-8-10	SA_33-2mm	EPA6010	1	mg/kg	Chromium	33.04	
D-441-1B-101317-8-10	SA_33-2mm	EPA6010	1	mg/kg	Cobalt	9.43	
D-441-1B-101317-8-10	SA_33-2mm	EPA6010	1	mg/kg	Copper	24.11	
D-441-1B-101317-8-10	SA_33-2mm	EPA6010	1	mg/kg	Iron	23992.60	
D-441-1B-101317-8-10	SA_33-2mm	EPA6010	1	mg/kg	Lead	22.02	dup
D-441-1B-101317-8-10	SA_33-2mm	EPA6010	1	mg/kg	Magnesium	5038.70	
D-441-1B-101317-8-10	SA_33-2mm	EPA6010	1	mg/kg	Manganese	657.21	
D-441-1B-101317-8-10	SA_33-2mm	EPA6010	1	mg/kg	Nickel	23.62	
D-441-1B-101317-8-10	SA_33-2mm	EPA6010	1	mg/kg	Phosphorus	1666.49	
D-441-1B-101317-8-10	SA_33-2mm	EPA6010	1	mg/kg	Potassium	2579.83	crm
D-441-1B-101317-8-10	SA_33-2mm	EPA6010	1	mg/kg	Selenium	4.17	rl



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Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-441-1B-101317-8-10	SA_33-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL
D-441-1B-101317-8-10	SA_33-2mm	EPA6010	1	mg/kg	Sodium	308.19	
D-441-1B-101317-8-10	SA_33-2mm	EPA6010	1	mg/kg	Thallium	0.75	rl
D-441-1B-101317-8-10	SA_33-2mm	EPA6010	1	mg/kg	Vanadium	59.23	
D-441-1B-101317-8-10	SA_33-2mm	EPA6010	1	mg/kg	Zinc	82.25	
D-441-1D-101317-0-2	SA_34-2mm	EPA6010	1	mg/kg	Aluminum	21204.44	
D-441-1D-101317-0-2	SA_34-2mm	EPA6010	1	mg/kg	Antimony	6.60	
D-441-1D-101317-0-2	SA_34-2mm	EPA6010	1	mg/kg	Arsenic	19.75	dup
D-441-1D-101317-0-2	SA_34-2mm	EPA6010	1	mg/kg	Barium	199.82	
D-441-1D-101317-0-2	SA_34-2mm	EPA6010	1	mg/kg	Beryllium	0.62	crm rl
D-441-1D-101317-0-2	SA_34-2mm	EPA6010	1	mg/kg	Cadmium	4.00	
D-441-1D-101317-0-2	SA_34-2mm	EPA6010	1	mg/kg	Calcium	6015.07	
D-441-1D-101317-0-2	SA_34-2mm	EPA6010	1	mg/kg	Chromium	31.12	
D-441-1D-101317-0-2	SA_34-2mm	EPA6010	1	mg/kg	Cobalt	8.92	
D-441-1D-101317-0-2	SA_34-2mm	EPA6010	1	mg/kg	Copper	49.90	
D-441-1D-101317-0-2	SA_34-2mm	EPA6010	1	mg/kg	Iron	22294.66	
D-441-1D-101317-0-2	SA_34-2mm	EPA6010	1	mg/kg	Lead	143.49	dup
D-441-1D-101317-0-2	SA_34-2mm	EPA6010	1	mg/kg	Magnesium	5686.19	
D-441-1D-101317-0-2	SA_34-2mm	EPA6010	1	mg/kg	Manganese	643.38	
D-441-1D-101317-0-2	SA_34-2mm	EPA6010	1	mg/kg	Nickel	23.95	
D-441-1D-101317-0-2	SA_34-2mm	EPA6010	1	mg/kg	Phosphorus	1745.32	
D-441-1D-101317-0-2	SA_34-2mm	EPA6010	1	mg/kg	Potassium	2468.53	crm
D-441-1D-101317-0-2	SA_34-2mm	EPA6010	1	mg/kg	Selenium	2.41	rl
D-441-1D-101317-0-2	SA_34-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL
D-441-1D-101317-0-2	SA_34-2mm	EPA6010	1	mg/kg	Sodium	259.38	
D-441-1D-101317-0-2	SA_34-2mm	EPA6010	1	mg/kg	Thallium	0.47	rl
D-441-1D-101317-0-2	SA_34-2mm	EPA6010	1	mg/kg	Vanadium	52.16	
D-441-1D-101317-0-2	SA_34-2mm	EPA6010	1	mg/kg	Zinc	208.08	



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Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-441-1D-101317-2-4	SA_35-2mm	EPA6010	1	mg/kg	Aluminum	24527.15	
D-441-1D-101317-2-4	SA_35-2mm	EPA6010	1	mg/kg	Antimony	7.65	
D-441-1D-101317-2-4	SA_35-2mm	EPA6010	1	mg/kg	Arsenic	13.45	dup
D-441-1D-101317-2-4	SA_35-2mm	EPA6010	1	mg/kg	Barium	236.79	
D-441-1D-101317-2-4	SA_35-2mm	EPA6010	1	mg/kg	Beryllium	0.80	crm rl
D-441-1D-101317-2-4	SA_35-2mm	EPA6010	1	mg/kg	Cadmium	2.13	
D-441-1D-101317-2-4	SA_35-2mm	EPA6010	1	mg/kg	Calcium	6029.93	
D-441-1D-101317-2-4	SA_35-2mm	EPA6010	1	mg/kg	Chromium	26.15	
D-441-1D-101317-2-4	SA_35-2mm	EPA6010	1	mg/kg	Cobalt	9.35	
D-441-1D-101317-2-4	SA_35-2mm	EPA6010	1	mg/kg	Copper	31.98	
D-441-1D-101317-2-4	SA_35-2mm	EPA6010	1	mg/kg	Iron	21837.99	
D-441-1D-101317-2-4	SA_35-2mm	EPA6010	1	mg/kg	Lead	62.10	dup
D-441-1D-101317-2-4	SA_35-2mm	EPA6010	1	mg/kg	Magnesium	4205.64	
D-441-1D-101317-2-4	SA_35-2mm	EPA6010	1	mg/kg	Manganese	772.75	
D-441-1D-101317-2-4	SA_35-2mm	EPA6010	1	mg/kg	Nickel	20.94	
D-441-1D-101317-2-4	SA_35-2mm	EPA6010	1	mg/kg	Phosphorus	1862.81	
D-441-1D-101317-2-4	SA_35-2mm	EPA6010	1	mg/kg	Potassium	2290.99	crm
D-441-1D-101317-2-4	SA_35-2mm	EPA6010	1	mg/kg	Selenium	3.38	rl
D-441-1D-101317-2-4	SA_35-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL
D-441-1D-101317-2-4	SA_35-2mm	EPA6010	1	mg/kg	Sodium	264.80	
D-441-1D-101317-2-4	SA_35-2mm	EPA6010	1	mg/kg	Thallium	0.51	rl
D-441-1D-101317-2-4	SA_35-2mm	EPA6010	1	mg/kg	Vanadium	46.14	
D-441-1D-101317-2-4	SA_35-2mm	EPA6010	1	mg/kg	Zinc	129.39	
D-441-1C-101317-8-10	SA_36-2mm	EPA6010	1	mg/kg	Aluminum	22467.07	
D-441-1C-101317-8-10	SA_36-2mm	EPA6010	1	mg/kg	Antimony	3.84	rl
D-441-1C-101317-8-10	SA_36-2mm	EPA6010	1	mg/kg	Arsenic	5.96	dup
D-441-1C-101317-8-10	SA_36-2mm	EPA6010	1	mg/kg	Barium	192.63	
D-441-1C-101317-8-10	SA_36-2mm	EPA6010	1	mg/kg	Beryllium	0.68	crm rl



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-441-1C-101317-8-10	SA_36-2mm	EPA6010	1	mg/kg	Cadmium	0.57	rl
D-441-1C-101317-8-10	SA_36-2mm	EPA6010	1	mg/kg	Calcium	4851.99	
D-441-1C-101317-8-10	SA_36-2mm	EPA6010	1	mg/kg	Chromium	29.97	
D-441-1C-101317-8-10	SA_36-2mm	EPA6010	1	mg/kg	Cobalt	8.58	
D-441-1C-101317-8-10	SA_36-2mm	EPA6010	1	mg/kg	Copper	22.47	
D-441-1C-101317-8-10	SA_36-2mm	EPA6010	1	mg/kg	Iron	20826.84	
D-441-1C-101317-8-10	SA_36-2mm	EPA6010	1	mg/kg	Lead	8.90	dup
D-441-1C-101317-8-10	SA_36-2mm	EPA6010	1	mg/kg	Magnesium	4955.50	
D-441-1C-101317-8-10	SA_36-2mm	EPA6010	1	mg/kg	Manganese	594.42	
D-441-1C-101317-8-10	SA_36-2mm	EPA6010	1	mg/kg	Nickel	19.27	
D-441-1C-101317-8-10	SA_36-2mm	EPA6010	1	mg/kg	Phosphorus	1734.32	
D-441-1C-101317-8-10	SA_36-2mm	EPA6010	1	mg/kg	Potassium	2066.75	crm
D-441-1C-101317-8-10	SA_36-2mm	EPA6010	1	mg/kg	Selenium	2.64	rl
D-441-1C-101317-8-10	SA_36-2mm	EPA6010	1	mg/kg	Silver	0.2	MDL
D-441-1C-101317-8-10	SA_36-2mm	EPA6010	1	mg/kg	Sodium	304.45	
D-441-1C-101317-8-10	SA_36-2mm	EPA6010	1	mg/kg	Thallium	0.67	rl
D-441-1C-101317-8-10	SA_36-2mm	EPA6010	1	mg/kg	Vanadium	52.86	
D-441-1C-101317-8-10	SA_36-2mm	EPA6010	1	mg/kg	Zinc	67.05	
D-441-1C-101317-10-12	SA_37-2mm	EPA6010	2	mg/kg	Aluminum	24606.65	
D-441-1C-101317-10-12	SA_37-2mm	EPA6010	2	mg/kg	Antimony	2.87	blk rl
D-441-1C-101317-10-12	SA_37-2mm	EPA6010	2	mg/kg	Arsenic	6.30	
D-441-1C-101317-10-12	SA_37-2mm	EPA6010	2	mg/kg	Barium	198.83	
D-441-1C-101317-10-12	SA_37-2mm	EPA6010	2	mg/kg	Beryllium	0.76	crm rl
D-441-1C-101317-10-12	SA_37-2mm	EPA6010	2	mg/kg	Cadmium	0.54	rl
D-441-1C-101317-10-12	SA_37-2mm	EPA6010	2	mg/kg	Calcium	4879.84	
D-441-1C-101317-10-12	SA_37-2mm	EPA6010	2	mg/kg	Chromium	36.82	dup
D-441-1C-101317-10-12	SA_37-2mm	EPA6010	2	mg/kg	Cobalt	9.31	
D-441-1C-101317-10-12	SA_37-2mm	EPA6010	2	mg/kg	Copper	22.79	



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Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-441-1C-101317-10-12	SA_37-2mm	EPA6010	2	mg/kg	Iron	22779.01	
D-441-1C-101317-10-12	SA_37-2mm	EPA6010	2	mg/kg	Lead	10.07	
D-441-1C-101317-10-12	SA_37-2mm	EPA6010	2	mg/kg	Magnesium	4866.33	
D-441-1C-101317-10-12	SA_37-2mm	EPA6010	2	mg/kg	Manganese	537.97	
D-441-1C-101317-10-12	SA_37-2mm	EPA6010	2	mg/kg	Nickel	21.98	
D-441-1C-101317-10-12	SA_37-2mm	EPA6010	2	mg/kg	Phosphorus	1576.96	
D-441-1C-101317-10-12	SA_37-2mm	EPA6010	2	mg/kg	Potassium	2260.28	crm
D-441-1C-101317-10-12	SA_37-2mm	EPA6010	2	mg/kg	Selenium	3.86	rl
D-441-1C-101317-10-12	SA_37-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL
D-441-1C-101317-10-12	SA_37-2mm	EPA6010	2	mg/kg	Sodium	404.09	
D-441-1C-101317-10-12	SA_37-2mm	EPA6010	2	mg/kg	Thallium	0.48	rl
D-441-1C-101317-10-12	SA_37-2mm	EPA6010	2	mg/kg	Vanadium	58.35	
D-441-1C-101317-10-12	SA_37-2mm	EPA6010	2	mg/kg	Zinc	72.85	
D-441-1B-101317-0-2	SA_38-2mm	EPA6010	2	mg/kg	Aluminum	22832.30	
D-441-1B-101317-0-2	SA_38-2mm	EPA6010	2	mg/kg	Antimony	17.62	blk
D-441-1B-101317-0-2	SA_38-2mm	EPA6010	2	mg/kg	Arsenic	40.24	
D-441-1B-101317-0-2	SA_38-2mm	EPA6010	2	mg/kg	Barium	268.91	
D-441-1B-101317-0-2	SA_38-2mm	EPA6010	2	mg/kg	Beryllium	0.78	crm rl
D-441-1B-101317-0-2	SA_38-2mm	EPA6010	2	mg/kg	Cadmium	12.15	
D-441-1B-101317-0-2	SA_38-2mm	EPA6010	2	mg/kg	Calcium	6851.05	
D-441-1B-101317-0-2	SA_38-2mm	EPA6010	2	mg/kg	Chromium	41.85	dup
D-441-1B-101317-0-2	SA_38-2mm	EPA6010	2	mg/kg	Cobalt	10.83	
D-441-1B-101317-0-2	SA_38-2mm	EPA6010	2	mg/kg	Copper	94.00	
D-441-1B-101317-0-2	SA_38-2mm	EPA6010	2	mg/kg	Iron	24152.75	
D-441-1B-101317-0-2	SA_38-2mm	EPA6010	2	mg/kg	Lead	674.53	
D-441-1B-101317-0-2	SA_38-2mm	EPA6010	2	mg/kg	Magnesium	4896.57	
D-441-1B-101317-0-2	SA_38-2mm	EPA6010	2	mg/kg	Manganese	665.11	
D-441-1B-101317-0-2	SA_38-2mm	EPA6010	2	mg/kg	Nickel	26.39	



Sample ID	Analysis ID	d_labresult.method_code	Batch	d labresult.units	d labresult.analyte	value	flags
D-441-1B-101317-0-2	SA_38-2mm	EPA6010	2	mg/kg	Phosphorus	2333.17	
D-441-1B-101317-0-2	SA_38-2mm	EPA6010	2	mg/kg	Potassium	2952.47	crm
D-441-1B-101317-0-2	SA_38-2mm	EPA6010	2	mg/kg	Selenium	2.70	rl
D-441-1B-101317-0-2	SA_38-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL
D-441-1B-101317-0-2	SA_38-2mm	EPA6010	2	mg/kg	Sodium	405.57	
D-441-1B-101317-0-2	SA_38-2mm	EPA6010	2	mg/kg	Thallium	0.61	rl
D-441-1B-101317-0-2	SA_38-2mm	EPA6010	2	mg/kg	Vanadium	59.68	
D-441-1B-101317-0-2	SA_38-2mm	EPA6010	2	mg/kg	Zinc	475.04	
D-441-1B-101317-2-4	SA_39-2mm	EPA6010	2	mg/kg	Aluminum	22772.52	
D-441-1B-101317-2-4	SA_39-2mm	EPA6010	2	mg/kg	Antimony	7.14	blk
D-441-1B-101317-2-4	SA_39-2mm	EPA6010	2	mg/kg	Arsenic	21.86	
D-441-1B-101317-2-4	SA_39-2mm	EPA6010	2	mg/kg	Barium	265.40	
D-441-1B-101317-2-4	SA_39-2mm	EPA6010	2	mg/kg	Beryllium	0.76	crm rl
D-441-1B-101317-2-4	SA_39-2mm	EPA6010	2	mg/kg	Cadmium	2.79	
D-441-1B-101317-2-4	SA_39-2mm	EPA6010	2	mg/kg	Calcium	7961.68	
D-441-1B-101317-2-4	SA_39-2mm	EPA6010	2	mg/kg	Chromium	38.79	dup
D-441-1B-101317-2-4	SA_39-2mm	EPA6010	2	mg/kg	Cobalt	9.98	
D-441-1B-101317-2-4	SA_39-2mm	EPA6010	2	mg/kg	Copper	35.05	
D-441-1B-101317-2-4	SA_39-2mm	EPA6010	2	mg/kg	Iron	22917.60	
D-441-1B-101317-2-4	SA_39-2mm	EPA6010	2	mg/kg	Lead	44.13	
D-441-1B-101317-2-4	SA_39-2mm	EPA6010	2	mg/kg	Magnesium	4523.44	
D-441-1B-101317-2-4	SA_39-2mm	EPA6010	2	mg/kg	Manganese	729.39	
D-441-1B-101317-2-4	SA_39-2mm	EPA6010	2	mg/kg	Nickel	23.60	
D-441-1B-101317-2-4	SA_39-2mm	EPA6010	2	mg/kg	Phosphorus	2116.09	
D-441-1B-101317-2-4	SA_39-2mm	EPA6010	2	mg/kg	Potassium	2721.20	crm
D-441-1B-101317-2-4	SA_39-2mm	EPA6010	2	mg/kg	Selenium	3.46	rl
D-441-1B-101317-2-4	SA_39-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL
D-441-1B-101317-2-4	SA_39-2mm	EPA6010	2	mg/kg	Sodium	433.05	



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-441-1B-101317-2-4	SA_39-2mm	EPA6010	2	mg/kg	Thallium	0.60	rl
D-441-1B-101317-2-4	SA_39-2mm	EPA6010	2	mg/kg	Vanadium	58.30	
D-441-1B-101317-2-4	SA_39-2mm	EPA6010	2	mg/kg	Zinc	179.03	
D-441-1B-101317-10-12	SA_40-2mm	EPA6010	2	mg/kg	Aluminum	25866.61	
D-441-1B-101317-10-12	SA_40-2mm	EPA6010	2	mg/kg	Antimony	2.99	blk rl
D-441-1B-101317-10-12	SA_40-2mm	EPA6010	2	mg/kg	Arsenic	7.93	
D-441-1B-101317-10-12	SA_40-2mm	EPA6010	2	mg/kg	Barium	259.71	
D-441-1B-101317-10-12	SA_40-2mm	EPA6010	2	mg/kg	Beryllium	0.83	crm rl
D-441-1B-101317-10-12	SA_40-2mm	EPA6010	2	mg/kg	Cadmium	0.70	rl
D-441-1B-101317-10-12	SA_40-2mm	EPA6010	2	mg/kg	Calcium	5540.94	
D-441-1B-101317-10-12	SA_40-2mm	EPA6010	2	mg/kg	Chromium	46.12	dup
D-441-1B-101317-10-12	SA_40-2mm	EPA6010	2	mg/kg	Cobalt	10.72	
D-441-1B-101317-10-12	SA_40-2mm	EPA6010	2	mg/kg	Copper	27.20	
D-441-1B-101317-10-12	SA_40-2mm	EPA6010	2	mg/kg	Iron	25204.55	
D-441-1B-101317-10-12	SA_40-2mm	EPA6010	2	mg/kg	Lead	14.88	
D-441-1B-101317-10-12	SA_40-2mm	EPA6010	2	mg/kg	Magnesium	5008.51	
D-441-1B-101317-10-12	SA_40-2mm	EPA6010	2	mg/kg	Manganese	665.73	
D-441-1B-101317-10-12	SA_40-2mm	EPA6010	2	mg/kg	Nickel	26.26	
D-441-1B-101317-10-12	SA_40-2mm	EPA6010	2	mg/kg	Phosphorus	1621.58	
D-441-1B-101317-10-12	SA_40-2mm	EPA6010	2	mg/kg	Potassium	2728.68	crm
D-441-1B-101317-10-12	SA_40-2mm	EPA6010	2	mg/kg	Selenium	3.00	rl
D-441-1B-101317-10-12	SA_40-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL
D-441-1B-101317-10-12	SA_40-2mm	EPA6010	2	mg/kg	Sodium	509.91	
D-441-1B-101317-10-12	SA_40-2mm	EPA6010	2	mg/kg	Thallium	0.72	rl
D-441-1B-101317-10-12	SA_40-2mm	EPA6010	2	mg/kg	Vanadium	63.78	
D-441-1B-101317-10-12	SA_40-2mm	EPA6010	2	mg/kg	Zinc	78.08	
D-258-3A-101317-10-12	SA_41-2mm	EPA6010	2	mg/kg	Aluminum	10978.50	
D-258-3A-101317-10-12	SA_41-2mm	EPA6010	2	mg/kg	Antimony	2.29	blk rl



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-258-3A-101317-10-12	SA_41-2mm	EPA6010	2	mg/kg	Arsenic	3.85	
D-258-3A-101317-10-12	SA_41-2mm	EPA6010	2	mg/kg	Barium	81.99	
D-258-3A-101317-10-12	SA_41-2mm	EPA6010	2	mg/kg	Beryllium	0.36	crm rl
D-258-3A-101317-10-12	SA_41-2mm	EPA6010	2	mg/kg	Cadmium	0.60	rl
D-258-3A-101317-10-12	SA_41-2mm	EPA6010	2	mg/kg	Calcium	3392.67	
D-258-3A-101317-10-12	SA_41-2mm	EPA6010	2	mg/kg	Chromium	12.18	dup
D-258-3A-101317-10-12	SA_41-2mm	EPA6010	2	mg/kg	Cobalt	3.52	
D-258-3A-101317-10-12	SA_41-2mm	EPA6010	2	mg/kg	Copper	9.12	
D-258-3A-101317-10-12	SA_41-2mm	EPA6010	2	mg/kg	Iron	11667.83	
D-258-3A-101317-10-12	SA_41-2mm	EPA6010	2	mg/kg	Lead	7.02	
D-258-3A-101317-10-12	SA_41-2mm	EPA6010	2	mg/kg	Magnesium	2144.05	
D-258-3A-101317-10-12	SA_41-2mm	EPA6010	2	mg/kg	Manganese	298.18	
D-258-3A-101317-10-12	SA_41-2mm	EPA6010	2	mg/kg	Nickel	8.08	
D-258-3A-101317-10-12	SA_41-2mm	EPA6010	2	mg/kg	Phosphorus	1042.01	
D-258-3A-101317-10-12	SA_41-2mm	EPA6010	2	mg/kg	Potassium	803.15	crm
D-258-3A-101317-10-12	SA_41-2mm	EPA6010	2	mg/kg	Selenium	2.24	rl
D-258-3A-101317-10-12	SA_41-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL
D-258-3A-101317-10-12	SA_41-2mm	EPA6010	2	mg/kg	Sodium	137.39	
D-258-3A-101317-10-12	SA_41-2mm	EPA6010	2	mg/kg	Thallium	0.49	rl
D-258-3A-101317-10-12	SA_41-2mm	EPA6010	2	mg/kg	Vanadium	26.66	
D-258-3A-101317-10-12	SA_41-2mm	EPA6010	2	mg/kg	Zinc	53.55	
D-441-1C-101317-0-2	SA_42-2mm	EPA6010	2	mg/kg	Aluminum	22927.12	
D-441-1C-101317-0-2	SA_42-2mm	EPA6010	2	mg/kg	Antimony	9.19	blk
D-441-1C-101317-0-2	SA_42-2mm	EPA6010	2	mg/kg	Arsenic	34.82	
D-441-1C-101317-0-2	SA_42-2mm	EPA6010	2	mg/kg	Barium	298.67	
D-441-1C-101317-0-2	SA_42-2mm	EPA6010	2	mg/kg	Beryllium	0.74	crm rl
D-441-1C-101317-0-2	SA_42-2mm	EPA6010	2	mg/kg	Cadmium	2.83	
D-441-1C-101317-0-2	SA_42-2mm	EPA6010	2	mg/kg	Calcium	9635.63	



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-441-1C-101317-0-2	SA_42-2mm	EPA6010	2	mg/kg	Chromium	29.39	dup
D-441-1C-101317-0-2	SA_42-2mm	EPA6010	2	mg/kg	Cobalt	9.11	
D-441-1C-101317-0-2	SA_42-2mm	EPA6010	2	mg/kg	Copper	42.52	
D-441-1C-101317-0-2	SA_42-2mm	EPA6010	2	mg/kg	Iron	20287.70	
D-441-1C-101317-0-2	SA_42-2mm	EPA6010	2	mg/kg	Lead	38.31	
D-441-1C-101317-0-2	SA_42-2mm	EPA6010	2	mg/kg	Magnesium	4080.14	
D-441-1C-101317-0-2	SA_42-2mm	EPA6010	2	mg/kg	Manganese	990.18	
D-441-1C-101317-0-2	SA_42-2mm	EPA6010	2	mg/kg	Nickel	19.25	
D-441-1C-101317-0-2	SA_42-2mm	EPA6010	2	mg/kg	Phosphorus	2804.35	
D-441-1C-101317-0-2	SA_42-2mm	EPA6010	2	mg/kg	Potassium	2774.47	crm
D-441-1C-101317-0-2	SA_42-2mm	EPA6010	2	mg/kg	Selenium	4.01	rl
D-441-1C-101317-0-2	SA_42-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL
D-441-1C-101317-0-2	SA_42-2mm	EPA6010	2	mg/kg	Sodium	406.95	
D-441-1C-101317-0-2	SA_42-2mm	EPA6010	2	mg/kg	Thallium	0.45	rl
D-441-1C-101317-0-2	SA_42-2mm	EPA6010	2	mg/kg	Vanadium	49.02	
D-441-1C-101317-0-2	SA_42-2mm	EPA6010	2	mg/kg	Zinc	233.43	
D-441-1C-101317-2-4	SA_43-2mm	EPA6010	2	mg/kg	Aluminum	23905.83	
D-441-1C-101317-2-4	SA_43-2mm	EPA6010	2	mg/kg	Antimony	7.17	blk
D-441-1C-101317-2-4	SA_43-2mm	EPA6010	2	mg/kg	Arsenic	16.59	
D-441-1C-101317-2-4	SA_43-2mm	EPA6010	2	mg/kg	Barium	255.78	
D-441-1C-101317-2-4	SA_43-2mm	EPA6010	2	mg/kg	Beryllium	0.74	crm rl
D-441-1C-101317-2-4	SA_43-2mm	EPA6010	2	mg/kg	Cadmium	1.11	
D-441-1C-101317-2-4	SA_43-2mm	EPA6010	2	mg/kg	Calcium	7275.52	
D-441-1C-101317-2-4	SA_43-2mm	EPA6010	2	mg/kg	Chromium	37.81	dup
D-441-1C-101317-2-4	SA_43-2mm	EPA6010	2	mg/kg	Cobalt	9.91	
D-441-1C-101317-2-4	SA_43-2mm	EPA6010	2	mg/kg	Copper	26.88	
D-441-1C-101317-2-4	SA_43-2mm	EPA6010	2	mg/kg	Iron	23314.27	
D-441-1C-101317-2-4	SA_43-2mm	EPA6010	2	mg/kg	Lead	16.28	



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-441-1C-101317-2-4	SA_43-2mm	EPA6010	2	mg/kg	Magnesium	5307.00	
D-441-1C-101317-2-4	SA_43-2mm	EPA6010	2	mg/kg	Manganese	873.22	
D-441-1C-101317-2-4	SA_43-2mm	EPA6010	2	mg/kg	Nickel	23.72	
D-441-1C-101317-2-4	SA_43-2mm	EPA6010	2	mg/kg	Phosphorus	2370.34	
D-441-1C-101317-2-4	SA_43-2mm	EPA6010	2	mg/kg	Potassium	2608.37	crm
D-441-1C-101317-2-4	SA_43-2mm	EPA6010	2	mg/kg	Selenium	3.21	rl
D-441-1C-101317-2-4	SA_43-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL
D-441-1C-101317-2-4	SA_43-2mm	EPA6010	2	mg/kg	Sodium	350.80	
D-441-1C-101317-2-4	SA_43-2mm	EPA6010	2	mg/kg	Thallium	0.71	rl
D-441-1C-101317-2-4	SA_43-2mm	EPA6010	2	mg/kg	Vanadium	55.93	
D-441-1C-101317-2-4	SA_43-2mm	EPA6010	2	mg/kg	Zinc	105.38	
D-441-1C-101317-4-6	SA_44-2mm	EPA6010	2	mg/kg	Aluminum	24343.86	
D-441-1C-101317-4-6	SA_44-2mm	EPA6010	2	mg/kg	Antimony	5.29	blk
D-441-1C-101317-4-6	SA_44-2mm	EPA6010	2	mg/kg	Arsenic	7.97	
D-441-1C-101317-4-6	SA_44-2mm	EPA6010	2	mg/kg	Barium	237.38	
D-441-1C-101317-4-6	SA_44-2mm	EPA6010	2	mg/kg	Beryllium	0.79	crm rl
D-441-1C-101317-4-6	SA_44-2mm	EPA6010	2	mg/kg	Cadmium	0.66	rl
D-441-1C-101317-4-6	SA_44-2mm	EPA6010	2	mg/kg	Calcium	6339.52	
D-441-1C-101317-4-6	SA_44-2mm	EPA6010	2	mg/kg	Chromium	33.09	dup
D-441-1C-101317-4-6	SA_44-2mm	EPA6010	2	mg/kg	Cobalt	10.01	
D-441-1C-101317-4-6	SA_44-2mm	EPA6010	2	mg/kg	Copper	25.06	
D-441-1C-101317-4-6	SA_44-2mm	EPA6010	2	mg/kg	Iron	22474.65	
D-441-1C-101317-4-6	SA_44-2mm	EPA6010	2	mg/kg	Lead	9.61	
D-441-1C-101317-4-6	SA_44-2mm	EPA6010	2	mg/kg	Magnesium	4957.94	
D-441-1C-101317-4-6	SA_44-2mm	EPA6010	2	mg/kg	Manganese	737.45	
D-441-1C-101317-4-6	SA_44-2mm	EPA6010	2	mg/kg	Nickel	22.88	
D-441-1C-101317-4-6	SA_44-2mm	EPA6010	2	mg/kg	Phosphorus	2071.59	
D-441-1C-101317-4-6	SA_44-2mm	EPA6010	2	mg/kg	Potassium	2617.08	crm



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-441-1C-101317-4-6	SA_44-2mm	EPA6010	2	mg/kg	Selenium	4.53	rl
D-441-1C-101317-4-6	SA_44-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL
D-441-1C-101317-4-6	SA_44-2mm	EPA6010	2	mg/kg	Sodium	471.74	
D-441-1C-101317-4-6	SA_44-2mm	EPA6010	2	mg/kg	Thallium	1.02	rl
D-441-1C-101317-4-6	SA_44-2mm	EPA6010	2	mg/kg	Vanadium	56.75	
D-441-1C-101317-4-6	SA_44-2mm	EPA6010	2	mg/kg	Zinc	82.63	
D-441-1C-101317-6-8	SA_45-2mm	EPA6010	2	mg/kg	Aluminum	23663.84	
D-441-1C-101317-6-8	SA_45-2mm	EPA6010	2	mg/kg	Antimony	5.08	blk
D-441-1C-101317-6-8	SA_45-2mm	EPA6010	2	mg/kg	Arsenic	8.06	
D-441-1C-101317-6-8	SA_45-2mm	EPA6010	2	mg/kg	Barium	221.74	
D-441-1C-101317-6-8	SA_45-2mm	EPA6010	2	mg/kg	Beryllium	0.74	crm rl
D-441-1C-101317-6-8	SA_45-2mm	EPA6010	2	mg/kg	Cadmium	0.64	rl
D-441-1C-101317-6-8	SA_45-2mm	EPA6010	2	mg/kg	Calcium	5976.99	
D-441-1C-101317-6-8	SA_45-2mm	EPA6010	2	mg/kg	Chromium	39.97	dup
D-441-1C-101317-6-8	SA_45-2mm	EPA6010	2	mg/kg	Cobalt	9.89	
D-441-1C-101317-6-8	SA_45-2mm	EPA6010	2	mg/kg	Copper	24.11	
D-441-1C-101317-6-8	SA_45-2mm	EPA6010	2	mg/kg	Iron	23992.62	
D-441-1C-101317-6-8	SA_45-2mm	EPA6010	2	mg/kg	Lead	9.59	
D-441-1C-101317-6-8	SA_45-2mm	EPA6010	2	mg/kg	Magnesium	4851.42	
D-441-1C-101317-6-8	SA_45-2mm	EPA6010	2	mg/kg	Manganese	647.85	
D-441-1C-101317-6-8	SA_45-2mm	EPA6010	2	mg/kg	Nickel	23.35	
D-441-1C-101317-6-8	SA_45-2mm	EPA6010	2	mg/kg	Phosphorus	1884.77	
D-441-1C-101317-6-8	SA_45-2mm	EPA6010	2	mg/kg	Potassium	2628.87	crm
D-441-1C-101317-6-8	SA_45-2mm	EPA6010	2	mg/kg	Selenium	4.20	rl
D-441-1C-101317-6-8	SA_45-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL
D-441-1C-101317-6-8	SA_45-2mm	EPA6010	2	mg/kg	Sodium	408.36	
D-441-1C-101317-6-8	SA_45-2mm	EPA6010	2	mg/kg	Thallium	0.79	rl
D-441-1C-101317-6-8	SA_45-2mm	EPA6010	2	mg/kg	Vanadium	61.20	



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-441-1C-101317-6-8	SA_45-2mm	EPA6010	2	mg/kg	Zinc	76.22	
D-258-3A-101317-0-2	SA_46-2mm	EPA6010	2	mg/kg	Aluminum	11150.43	
D-258-3A-101317-0-2	SA_46-2mm	EPA6010	2	mg/kg	Antimony	11.09	blk
D-258-3A-101317-0-2	SA_46-2mm	EPA6010	2	mg/kg	Arsenic	21.45	
D-258-3A-101317-0-2	SA_46-2mm	EPA6010	2	mg/kg	Barium	123.44	
D-258-3A-101317-0-2	SA_46-2mm	EPA6010	2	mg/kg	Beryllium	0.38	crm rl
D-258-3A-101317-0-2	SA_46-2mm	EPA6010	2	mg/kg	Cadmium	11.62	
D-258-3A-101317-0-2	SA_46-2mm	EPA6010	2	mg/kg	Calcium	3678.09	
D-258-3A-101317-0-2	SA_46-2mm	EPA6010	2	mg/kg	Chromium	18.80	dup
D-258-3A-101317-0-2	SA_46-2mm	EPA6010	2	mg/kg	Cobalt	4.97	
D-258-3A-101317-0-2	SA_46-2mm	EPA6010	2	mg/kg	Copper	27.53	
D-258-3A-101317-0-2	SA_46-2mm	EPA6010	2	mg/kg	Iron	13975.55	
D-258-3A-101317-0-2	SA_46-2mm	EPA6010	2	mg/kg	Lead	473.61	
D-258-3A-101317-0-2	SA_46-2mm	EPA6010	2	mg/kg	Magnesium	2845.95	
D-258-3A-101317-0-2	SA_46-2mm	EPA6010	2	mg/kg	Manganese	423.69	
D-258-3A-101317-0-2	SA_46-2mm	EPA6010	2	mg/kg	Nickel	9.30	
D-258-3A-101317-0-2	SA_46-2mm	EPA6010	2	mg/kg	Phosphorus	1000.30	
D-258-3A-101317-0-2	SA_46-2mm	EPA6010	2	mg/kg	Potassium	1224.89	crm
D-258-3A-101317-0-2	SA_46-2mm	EPA6010	2	mg/kg	Selenium	3.20	rl
D-258-3A-101317-0-2	SA_46-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL
D-258-3A-101317-0-2	SA_46-2mm	EPA6010	2	mg/kg	Sodium	150.84	
D-258-3A-101317-0-2	SA_46-2mm	EPA6010	2	mg/kg	Thallium	0.64	rl
D-258-3A-101317-0-2	SA_46-2mm	EPA6010	2	mg/kg	Vanadium	32.02	
D-258-3A-101317-0-2	SA_46-2mm	EPA6010	2	mg/kg	Zinc	346.73	
D-258-3A-101317-2-4	SA_47-2mm	EPA6010	2	mg/kg	Aluminum	11606.91	
D-258-3A-101317-2-4	SA_47-2mm	EPA6010	2	mg/kg	Antimony	6.48	blk
D-258-3A-101317-2-4	SA_47-2mm	EPA6010	2	mg/kg	Arsenic	22.47	
D-258-3A-101317-2-4	SA_47-2mm	EPA6010	2	mg/kg	Barium	117.86	



Sample ID	Analysis ID	d_labresult.method_code	Batch	d labresult.units	d labresult.analyte	value	flags
D-258-3A-101317-2-4	SA_47-2mm	EPA6010	2	mg/kg	Beryllium	0.39	crm rl
D-258-3A-101317-2-4	SA_47-2mm	EPA6010	2	mg/kg	Cadmium	5.33	
D-258-3A-101317-2-4	SA_47-2mm	EPA6010	2	mg/kg	Calcium	3229.97	
D-258-3A-101317-2-4	SA_47-2mm	EPA6010	2	mg/kg	Chromium	17.80	dup
D-258-3A-101317-2-4	SA_47-2mm	EPA6010	2	mg/kg	Cobalt	4.17	
D-258-3A-101317-2-4	SA_47-2mm	EPA6010	2	mg/kg	Copper	17.97	
D-258-3A-101317-2-4	SA_47-2mm	EPA6010	2	mg/kg	Iron	12340.53	
D-258-3A-101317-2-4	SA_47-2mm	EPA6010	2	mg/kg	Lead	85.41	
D-258-3A-101317-2-4	SA_47-2mm	EPA6010	2	mg/kg	Magnesium	2300.00	
D-258-3A-101317-2-4	SA_47-2mm	EPA6010	2	mg/kg	Manganese	429.50	
D-258-3A-101317-2-4	SA_47-2mm	EPA6010	2	mg/kg	Nickel	10.71	
D-258-3A-101317-2-4	SA_47-2mm	EPA6010	2	mg/kg	Phosphorus	1045.58	
D-258-3A-101317-2-4	SA_47-2mm	EPA6010	2	mg/kg	Potassium	1061.22	crm
D-258-3A-101317-2-4	SA_47-2mm	EPA6010	2	mg/kg	Selenium	3.06	rl
D-258-3A-101317-2-4	SA_47-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL
D-258-3A-101317-2-4	SA_47-2mm	EPA6010	2	mg/kg	Sodium	156.44	
D-258-3A-101317-2-4	SA_47-2mm	EPA6010	2	mg/kg	Thallium	0.62	rl
D-258-3A-101317-2-4	SA_47-2mm	EPA6010	2	mg/kg	Vanadium	29.28	
D-258-3A-101317-2-4	SA_47-2mm	EPA6010	2	mg/kg	Zinc	322.32	
D-258-3A-101317-4-6	SA_48-2mm	EPA6010	2	mg/kg	Aluminum	11588.69	
D-258-3A-101317-4-6	SA_48-2mm	EPA6010	2	mg/kg	Antimony	6.01	blk
D-258-3A-101317-4-6	SA_48-2mm	EPA6010	2	mg/kg	Arsenic	22.86	
D-258-3A-101317-4-6	SA_48-2mm	EPA6010	2	mg/kg	Barium	121.18	
D-258-3A-101317-4-6	SA_48-2mm	EPA6010	2	mg/kg	Beryllium	0.38	crm rl
D-258-3A-101317-4-6	SA_48-2mm	EPA6010	2	mg/kg	Cadmium	4.41	
D-258-3A-101317-4-6	SA_48-2mm	EPA6010	2	mg/kg	Calcium	3037.26	
D-258-3A-101317-4-6	SA_48-2mm	EPA6010	2	mg/kg	Chromium	17.04	dup
D-258-3A-101317-4-6	SA_48-2mm	EPA6010	2	mg/kg	Cobalt	4.54	



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-258-3A-101317-4-6	SA_48-2mm	EPA6010	2	mg/kg	Copper	16.38	
D-258-3A-101317-4-6	SA_48-2mm	EPA6010	2	mg/kg	Iron	12948.07	
D-258-3A-101317-4-6	SA_48-2mm	EPA6010	2	mg/kg	Lead	78.79	
D-258-3A-101317-4-6	SA_48-2mm	EPA6010	2	mg/kg	Magnesium	2338.15	
D-258-3A-101317-4-6	SA_48-2mm	EPA6010	2	mg/kg	Manganese	445.20	
D-258-3A-101317-4-6	SA_48-2mm	EPA6010	2	mg/kg	Nickel	9.36	
D-258-3A-101317-4-6	SA_48-2mm	EPA6010	2	mg/kg	Phosphorus	1051.25	
D-258-3A-101317-4-6	SA_48-2mm	EPA6010	2	mg/kg	Potassium	927.73	crm
D-258-3A-101317-4-6	SA_48-2mm	EPA6010	2	mg/kg	Selenium	2.13	rl
D-258-3A-101317-4-6	SA_48-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL
D-258-3A-101317-4-6	SA_48-2mm	EPA6010	2	mg/kg	Sodium	137.48	
D-258-3A-101317-4-6	SA_48-2mm	EPA6010	2	mg/kg	Thallium	0.80	rl
D-258-3A-101317-4-6	SA_48-2mm	EPA6010	2	mg/kg	Vanadium	29.69	
D-258-3A-101317-4-6	SA_48-2mm	EPA6010	2	mg/kg	Zinc	287.92	
D-258-3A-101317-6-8	SA_49-2mm	EPA6010	2	mg/kg	Aluminum	11475.15	
D-258-3A-101317-6-8	SA_49-2mm	EPA6010	2	mg/kg	Antimony	4.15	blk rl
D-258-3A-101317-6-8	SA_49-2mm	EPA6010	2	mg/kg	Arsenic	8.12	
D-258-3A-101317-6-8	SA_49-2mm	EPA6010	2	mg/kg	Barium	110.49	
D-258-3A-101317-6-8	SA_49-2mm	EPA6010	2	mg/kg	Beryllium	0.37	crm rl
D-258-3A-101317-6-8	SA_49-2mm	EPA6010	2	mg/kg	Cadmium	1.36	
D-258-3A-101317-6-8	SA_49-2mm	EPA6010	2	mg/kg	Calcium	3203.26	
D-258-3A-101317-6-8	SA_49-2mm	EPA6010	2	mg/kg	Chromium	15.19	dup
D-258-3A-101317-6-8	SA_49-2mm	EPA6010	2	mg/kg	Cobalt	4.07	
D-258-3A-101317-6-8	SA_49-2mm	EPA6010	2	mg/kg	Copper	11.57	
D-258-3A-101317-6-8	SA_49-2mm	EPA6010	2	mg/kg	Iron	13616.93	
D-258-3A-101317-6-8	SA_49-2mm	EPA6010	2	mg/kg	Lead	23.93	
D-258-3A-101317-6-8	SA_49-2mm	EPA6010	2	mg/kg	Magnesium	2405.02	
D-258-3A-101317-6-8	SA_49-2mm	EPA6010	2	mg/kg	Manganese	398.49	



Sample ID	Analysis ID	d_labresult.method_code	Batch	d labresult.units	d_labresult.analyte	value	flags
D-258-3A-101317-6-8	SA_49-2mm	EPA6010	2	mg/kg	Nickel	9.90	<u>_</u>
D-258-3A-101317-6-8	SA_49-2mm	EPA6010	2	mg/kg	Phosphorus	973.48	
D-258-3A-101317-6-8	SA_49-2mm	EPA6010	2	mg/kg	Potassium	854.82	crm
D-258-3A-101317-6-8	SA_49-2mm	EPA6010	2	mg/kg	Selenium	2.28	rl
D-258-3A-101317-6-8	SA_49-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL
D-258-3A-101317-6-8	SA_49-2mm	EPA6010	2	mg/kg	Sodium	146.51]
D-258-3A-101317-6-8	SA_49-2mm	EPA6010	2	mg/kg	Thallium	0.59	rl
D-258-3A-101317-6-8	SA_49-2mm	EPA6010	2	mg/kg	Vanadium	31.33	
D-258-3A-101317-6-8	SA_49-2mm	EPA6010	2	mg/kg	Zinc	138.37	
D-258-3A-101317-8-10	SA_50-2mm	EPA6010	2	mg/kg	Aluminum	12762.45	
D-258-3A-101317-8-10	SA_50-2mm	EPA6010	2	mg/kg	Antimony	2.97	blk rl
D-258-3A-101317-8-10	SA_50-2mm	EPA6010	2	mg/kg	Arsenic	4.26	
D-258-3A-101317-8-10	SA_50-2mm	EPA6010	2	mg/kg	Barium	104.42	
D-258-3A-101317-8-10	SA_50-2mm	EPA6010	2	mg/kg	Beryllium	0.41	crm rl
D-258-3A-101317-8-10	SA_50-2mm	EPA6010	2	mg/kg	Cadmium	0.62	rl
D-258-3A-101317-8-10	SA_50-2mm	EPA6010	2	mg/kg	Calcium	3619.79	
D-258-3A-101317-8-10	SA_50-2mm	EPA6010	2	mg/kg	Chromium	16.21	dup
D-258-3A-101317-8-10	SA_50-2mm	EPA6010	2	mg/kg	Cobalt	4.62	
D-258-3A-101317-8-10	SA_50-2mm	EPA6010	2	mg/kg	Copper	10.68	
D-258-3A-101317-8-10	SA_50-2mm	EPA6010	2	mg/kg	Iron	14200.30	
D-258-3A-101317-8-10	SA_50-2mm	EPA6010	2	mg/kg	Lead	8.89	į
D-258-3A-101317-8-10	SA_50-2mm	EPA6010	2	mg/kg	Magnesium	2468.07	į
D-258-3A-101317-8-10	SA_50-2mm	EPA6010	2	mg/kg	Manganese	385.17	
D-258-3A-101317-8-10	SA_50-2mm	EPA6010	2	mg/kg	Nickel	10.23	
D-258-3A-101317-8-10	SA_50-2mm	EPA6010	2	mg/kg	Phosphorus	1015.08	
D-258-3A-101317-8-10	SA_50-2mm	EPA6010	2	mg/kg	Potassium	969.72	crm
D-258-3A-101317-8-10	SA_50-2mm	EPA6010	2	mg/kg	Selenium	3.02	rl
D-258-3A-101317-8-10	SA_50-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-258-3A-101317-8-10	SA_50-2mm	EPA6010	2	mg/kg	Sodium	180.03	
D-258-3A-101317-8-10	SA_50-2mm	EPA6010	2	mg/kg	Thallium	0.60	rl
D-258-3A-101317-8-10	SA_50-2mm	EPA6010	2	mg/kg	Vanadium	32.85	
D-258-3A-101317-8-10	SA_50-2mm	EPA6010	2	mg/kg	Zinc	66.47	
D-258-3D-101317-2-4	SA_51-2mm	EPA6010	2	mg/kg	Aluminum	9047.44	
D-258-3D-101317-2-4	SA_51-2mm	EPA6010	2	mg/kg	Antimony	5.94	blk
D-258-3D-101317-2-4	SA_51-2mm	EPA6010	2	mg/kg	Arsenic	11.40	
D-258-3D-101317-2-4	SA_51-2mm	EPA6010	2	mg/kg	Barium	91.45	
D-258-3D-101317-2-4	SA_51-2mm	EPA6010	2	mg/kg	Beryllium	0.33	crm rl
D-258-3D-101317-2-4	SA_51-2mm	EPA6010	2	mg/kg	Cadmium	3.64	
D-258-3D-101317-2-4	SA_51-2mm	EPA6010	2	mg/kg	Calcium	3326.76	
D-258-3D-101317-2-4	SA_51-2mm	EPA6010	2	mg/kg	Chromium	14.82	dup
D-258-3D-101317-2-4	SA_51-2mm	EPA6010	2	mg/kg	Cobalt	3.53	
D-258-3D-101317-2-4	SA_51-2mm	EPA6010	2	mg/kg	Copper	14.89	
D-258-3D-101317-2-4	SA_51-2mm	EPA6010	2	mg/kg	Iron	11375.48	
D-258-3D-101317-2-4	SA_51-2mm	EPA6010	2	mg/kg	Lead	150.19	
D-258-3D-101317-2-4	SA_51-2mm	EPA6010	2	mg/kg	Magnesium	2009.76	
D-258-3D-101317-2-4	SA_51-2mm	EPA6010	2	mg/kg	Manganese	365.99	
D-258-3D-101317-2-4	SA_51-2mm	EPA6010	2	mg/kg	Nickel	8.35	
D-258-3D-101317-2-4	SA_51-2mm	EPA6010	2	mg/kg	Phosphorus	891.10	
D-258-3D-101317-2-4	SA_51-2mm	EPA6010	2	mg/kg	Potassium	771.67	crm
D-258-3D-101317-2-4	SA_51-2mm	EPA6010	2	mg/kg	Selenium	3.30	rl
D-258-3D-101317-2-4	SA_51-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL
D-258-3D-101317-2-4	SA_51-2mm	EPA6010	2	mg/kg	Sodium	103.18	
D-258-3D-101317-2-4	SA_51-2mm	EPA6010	2	mg/kg	Thallium	0.56	rl
D-258-3D-101317-2-4	SA_51-2mm	EPA6010	2	mg/kg	Vanadium	25.72	
D-258-3D-101317-2-4	SA_51-2mm	EPA6010	2	mg/kg	Zinc	177.17	
D-258-3D-101317-4-6	SA_52-2mm	EPA6010	2	mg/kg	Aluminum	10620.93	



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-258-3D-101317-4-6	SA_52-2mm	EPA6010	2	mg/kg	Antimony	2.74	blk rl
D-258-3D-101317-4-6	SA_52-2mm	EPA6010	2	mg/kg	Arsenic	2.78	
D-258-3D-101317-4-6	SA_52-2mm	EPA6010	2	mg/kg	Barium	91.27	
D-258-3D-101317-4-6	SA_52-2mm	EPA6010	2	mg/kg	Beryllium	0.35	crm rl
D-258-3D-101317-4-6	SA_52-2mm	EPA6010	2	mg/kg	Cadmium	0.42	rl
D-258-3D-101317-4-6	SA_52-2mm	EPA6010	2	mg/kg	Calcium	3302.01	
D-258-3D-101317-4-6	SA_52-2mm	EPA6010	2	mg/kg	Chromium	15.24	dup
D-258-3D-101317-4-6	SA_52-2mm	EPA6010	2	mg/kg	Cobalt	4.02	
D-258-3D-101317-4-6	SA_52-2mm	EPA6010	2	mg/kg	Copper	9.05	
D-258-3D-101317-4-6	SA_52-2mm	EPA6010	2	mg/kg	Iron	12777.72	
D-258-3D-101317-4-6	SA_52-2mm	EPA6010	2	mg/kg	Lead	6.96	
D-258-3D-101317-4-6	SA_52-2mm	EPA6010	2	mg/kg	Magnesium	2075.15	
D-258-3D-101317-4-6	SA_52-2mm	EPA6010	2	mg/kg	Manganese	356.87	
D-258-3D-101317-4-6	SA_52-2mm	EPA6010	2	mg/kg	Nickel	8.47	
D-258-3D-101317-4-6	SA_52-2mm	EPA6010	2	mg/kg	Phosphorus	896.16	
D-258-3D-101317-4-6	SA_52-2mm	EPA6010	2	mg/kg	Potassium	881.60	crm
D-258-3D-101317-4-6	SA_52-2mm	EPA6010	2	mg/kg	Selenium	1.94	rl
D-258-3D-101317-4-6	SA_52-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL
D-258-3D-101317-4-6	SA_52-2mm	EPA6010	2	mg/kg	Sodium	131.39	
D-258-3D-101317-4-6	SA_52-2mm	EPA6010	2	mg/kg	Thallium	0.59	rl
D-258-3D-101317-4-6	SA_52-2mm	EPA6010	2	mg/kg	Vanadium	29.91	
D-258-3D-101317-4-6	SA_52-2mm	EPA6010	2	mg/kg	Zinc	45.81	
D-258-3D-101317-6-8	SA_53-2mm	EPA6010	2	mg/kg	Aluminum	9925.99	
D-258-3D-101317-6-8	SA_53-2mm	EPA6010	2	mg/kg	Antimony	1.81	blk rl
D-258-3D-101317-6-8	SA_53-2mm	EPA6010	2	mg/kg	Arsenic	1.85	
D-258-3D-101317-6-8	SA_53-2mm	EPA6010	2	mg/kg	Barium	64.43	
D-258-3D-101317-6-8	SA_53-2mm	EPA6010	2	mg/kg	Beryllium	0.32	crm rl
D-258-3D-101317-6-8	SA_53-2mm	EPA6010	2	mg/kg	Cadmium	0.30	rl



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-258-3D-101317-6-8	SA_53-2mm	EPA6010	2	mg/kg	Calcium	2662.49	
D-258-3D-101317-6-8	SA_53-2mm	EPA6010	2	mg/kg	Chromium	11.80	dup
D-258-3D-101317-6-8	SA_53-2mm	EPA6010	2	mg/kg	Cobalt	3.46	
D-258-3D-101317-6-8	SA_53-2mm	EPA6010	2	mg/kg	Copper	7.47	
D-258-3D-101317-6-8	SA_53-2mm	EPA6010	2	mg/kg	Iron	12459.03	
D-258-3D-101317-6-8	SA_53-2mm	EPA6010	2	mg/kg	Lead	4.65	
D-258-3D-101317-6-8	SA_53-2mm	EPA6010	2	mg/kg	Magnesium	1888.51	
D-258-3D-101317-6-8	SA_53-2mm	EPA6010	2	mg/kg	Manganese	272.55	
D-258-3D-101317-6-8	SA_53-2mm	EPA6010	2	mg/kg	Nickel	7.79	
D-258-3D-101317-6-8	SA_53-2mm	EPA6010	2	mg/kg	Phosphorus	867.91	
D-258-3D-101317-6-8	SA_53-2mm	EPA6010	2	mg/kg	Potassium	690.72	crm
D-258-3D-101317-6-8	SA_53-2mm	EPA6010	2	mg/kg	Selenium	1.37	rl
D-258-3D-101317-6-8	SA_53-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL
D-258-3D-101317-6-8	SA_53-2mm	EPA6010	2	mg/kg	Sodium	103.16	
D-258-3D-101317-6-8	SA_53-2mm	EPA6010	2	mg/kg	Thallium	0.37	rl
D-258-3D-101317-6-8	SA_53-2mm	EPA6010	2	mg/kg	Vanadium	28.41	
D-258-3D-101317-6-8	SA_53-2mm	EPA6010	2	mg/kg	Zinc	36.02	
D-258-3D-101317-8-10	SA_54-2mm	EPA6010	2	mg/kg	Aluminum	9316.86	
D-258-3D-101317-8-10	SA_54-2mm	EPA6010	2	mg/kg	Antimony	1.51	blk rl
D-258-3D-101317-8-10	SA_54-2mm	EPA6010	2	mg/kg	Arsenic	1.72	
D-258-3D-101317-8-10	SA_54-2mm	EPA6010	2	mg/kg	Barium	48.04	
D-258-3D-101317-8-10	SA_54-2mm	EPA6010	2	mg/kg	Beryllium	0.32	crm rl
D-258-3D-101317-8-10	SA_54-2mm	EPA6010	2	mg/kg	Cadmium	0.26	rl
D-258-3D-101317-8-10	SA_54-2mm	EPA6010	2	mg/kg	Calcium	2092.95	
D-258-3D-101317-8-10	SA_54-2mm	EPA6010	2	mg/kg	Chromium	22.21	dup
D-258-3D-101317-8-10	SA_54-2mm	EPA6010	2	mg/kg	Cobalt	3.34	
D-258-3D-101317-8-10	SA_54-2mm	EPA6010	2	mg/kg	Copper	6.94	
D-258-3D-101317-8-10	SA_54-2mm	EPA6010	2	mg/kg	Iron	11813.43	



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-258-3D-101317-8-10	SA_54-2mm	EPA6010	2	mg/kg	Lead	2.90	
D-258-3D-101317-8-10	SA_54-2mm	EPA6010	2	mg/kg	Magnesium	2044.41	
D-258-3D-101317-8-10	SA_54-2mm	EPA6010	2	mg/kg	Manganese	207.28	
D-258-3D-101317-8-10	SA_54-2mm	EPA6010	2	mg/kg	Nickel	8.29	
D-258-3D-101317-8-10	SA_54-2mm	EPA6010	2	mg/kg	Phosphorus	699.32	
D-258-3D-101317-8-10	SA_54-2mm	EPA6010	2	mg/kg	Potassium	667.01	crm
D-258-3D-101317-8-10	SA_54-2mm	EPA6010	2	mg/kg	Selenium	2.91	rl
D-258-3D-101317-8-10	SA_54-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL
D-258-3D-101317-8-10	SA_54-2mm	EPA6010	2	mg/kg	Sodium	99.74	
D-258-3D-101317-8-10	SA_54-2mm	EPA6010	2	mg/kg	Thallium	0.34	rl
D-258-3D-101317-8-10	SA_54-2mm	EPA6010	2	mg/kg	Vanadium	26.23	
D-258-3D-101317-8-10	SA_54-2mm	EPA6010	2	mg/kg	Zinc	28.11	
D-258-3D-101317-10-12	SA_55-2mm	EPA6010	2	mg/kg	Aluminum	7899.04	
D-258-3D-101317-10-12	SA_55-2mm	EPA6010	2	mg/kg	Antimony	2.31	blk rl
D-258-3D-101317-10-12	SA_55-2mm	EPA6010	2	mg/kg	Arsenic	2.08	
D-258-3D-101317-10-12	SA_55-2mm	EPA6010	2	mg/kg	Barium	47.58	
D-258-3D-101317-10-12	SA_55-2mm	EPA6010	2	mg/kg	Beryllium	0.29	crm rl
D-258-3D-101317-10-12	SA_55-2mm	EPA6010	2	mg/kg	Cadmium	0.24	rl
D-258-3D-101317-10-12	SA_55-2mm	EPA6010	2	mg/kg	Calcium	2012.66	
D-258-3D-101317-10-12	SA_55-2mm	EPA6010	2	mg/kg	Chromium	19.02	dup
D-258-3D-101317-10-12	SA_55-2mm	EPA6010	2	mg/kg	Cobalt	3.35	
D-258-3D-101317-10-12	SA_55-2mm	EPA6010	2	mg/kg	Copper	6.80	
D-258-3D-101317-10-12	SA_55-2mm	EPA6010	2	mg/kg	Iron	12282.46	
D-258-3D-101317-10-12	SA_55-2mm	EPA6010	2	mg/kg	Lead	3.25	
D-258-3D-101317-10-12	SA_55-2mm	EPA6010	2	mg/kg	Magnesium	1908.33	
D-258-3D-101317-10-12	SA_55-2mm	EPA6010	2	mg/kg	Manganese	187.72	
D-258-3D-101317-10-12	SA_55-2mm	EPA6010	2	mg/kg	Nickel	8.80	
D-258-3D-101317-10-12	SA_55-2mm	EPA6010	2	mg/kg	Phosphorus	569.05	



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-258-3D-101317-10-12	SA_55-2mm	EPA6010	2	mg/kg	Potassium	669.05	crm
D-258-3D-101317-10-12	SA_55-2mm	EPA6010	2	mg/kg	Selenium	2.63	rl
D-258-3D-101317-10-12	SA_55-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL
D-258-3D-101317-10-12	SA_55-2mm	EPA6010	2	mg/kg	Sodium	111.30	
D-258-3D-101317-10-12	SA_55-2mm	EPA6010	2	mg/kg	Thallium	0.40	rl
D-258-3D-101317-10-12	SA_55-2mm	EPA6010	2	mg/kg	Vanadium	28.75	
D-258-3D-101317-10-12	SA_55-2mm	EPA6010	2	mg/kg	Zinc	26.47	
D-258-3B-101317-4-6	SA_56-2mm	EPA6010	2	mg/kg	Aluminum	13457.18	
D-258-3B-101317-4-6	SA_56-2mm	EPA6010	2	mg/kg	Antimony	2.82	blk rl
D-258-3B-101317-4-6	SA_56-2mm	EPA6010	2	mg/kg	Arsenic	2.45	
D-258-3B-101317-4-6	SA_56-2mm	EPA6010	2	mg/kg	Barium	115.73	
D-258-3B-101317-4-6	SA_56-2mm	EPA6010	2	mg/kg	Beryllium	0.42	crm rl
D-258-3B-101317-4-6	SA_56-2mm	EPA6010	2	mg/kg	Cadmium	0.53	rl
D-258-3B-101317-4-6	SA_56-2mm	EPA6010	2	mg/kg	Calcium	3134.74	
D-258-3B-101317-4-6	SA_56-2mm	EPA6010	2	mg/kg	Chromium	13.74	dup
D-258-3B-101317-4-6	SA_56-2mm	EPA6010	2	mg/kg	Cobalt	4.13	
D-258-3B-101317-4-6	SA_56-2mm	EPA6010	2	mg/kg	Copper	10.97	
D-258-3B-101317-4-6	SA_56-2mm	EPA6010	2	mg/kg	Iron	12033.61	
D-258-3B-101317-4-6	SA_56-2mm	EPA6010	2	mg/kg	Lead	9.88	
D-258-3B-101317-4-6	SA_56-2mm	EPA6010	2	mg/kg	Magnesium	2423.96	
D-258-3B-101317-4-6	SA_56-2mm	EPA6010	2	mg/kg	Manganese	362.18	
D-258-3B-101317-4-6	SA_56-2mm	EPA6010	2	mg/kg	Nickel	9.19	
D-258-3B-101317-4-6	SA_56-2mm	EPA6010	2	mg/kg	Phosphorus	897.21	
D-258-3B-101317-4-6	SA_56-2mm	EPA6010	2	mg/kg	Potassium	911.40	crm
D-258-3B-101317-4-6	SA_56-2mm	EPA6010	2	mg/kg	Selenium	3.01	rl
D-258-3B-101317-4-6	SA_56-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL
D-258-3B-101317-4-6	SA_56-2mm	EPA6010	2	mg/kg	Sodium	169.48	
D-258-3B-101317-4-6	SA_56-2mm	EPA6010	2	mg/kg	Thallium	0.50	rl



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-258-3B-101317-4-6	SA_56-2mm	EPA6010	2	mg/kg	Vanadium	26.60	
D-258-3B-101317-4-6	SA_56-2mm	EPA6010	2	mg/kg	Zinc	56.11	
D-258-3B-101317-6-8	SA_57-2mm	EPA6010	2	mg/kg	Aluminum	14024.13	
D-258-3B-101317-6-8	SA_57-2mm	EPA6010	2	mg/kg	Antimony	2.51	blk rl
D-258-3B-101317-6-8	SA_57-2mm	EPA6010	2	mg/kg	Arsenic	1.91	
D-258-3B-101317-6-8	SA_57-2mm	EPA6010	2	mg/kg	Barium	109.97	
D-258-3B-101317-6-8	SA_57-2mm	EPA6010	2	mg/kg	Beryllium	0.43	crm rl
D-258-3B-101317-6-8	SA_57-2mm	EPA6010	2	mg/kg	Cadmium	0.30	rl
D-258-3B-101317-6-8	SA_57-2mm	EPA6010	2	mg/kg	Calcium	3256.11	
D-258-3B-101317-6-8	SA_57-2mm	EPA6010	2	mg/kg	Chromium	20.84	dup
D-258-3B-101317-6-8	SA_57-2mm	EPA6010	2	mg/kg	Cobalt	4.14	
D-258-3B-101317-6-8	SA_57-2mm	EPA6010	2	mg/kg	Copper	10.32	
D-258-3B-101317-6-8	SA_57-2mm	EPA6010	2	mg/kg	Iron	11918.46	
D-258-3B-101317-6-8	SA_57-2mm	EPA6010	2	mg/kg	Lead	4.96	
D-258-3B-101317-6-8	SA_57-2mm	EPA6010	2	mg/kg	Magnesium	2340.76	
D-258-3B-101317-6-8	SA_57-2mm	EPA6010	2	mg/kg	Manganese	316.52	
D-258-3B-101317-6-8	SA_57-2mm	EPA6010	2	mg/kg	Nickel	9.35	
D-258-3B-101317-6-8	SA_57-2mm	EPA6010	2	mg/kg	Phosphorus	923.00	
D-258-3B-101317-6-8	SA_57-2mm	EPA6010	2	mg/kg	Potassium	934.26	crm
D-258-3B-101317-6-8	SA_57-2mm	EPA6010	2	mg/kg	Selenium	2.80	rl
D-258-3B-101317-6-8	SA_57-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL
D-258-3B-101317-6-8	SA_57-2mm	EPA6010	2	mg/kg	Sodium	190.07	
D-258-3B-101317-6-8	SA_57-2mm	EPA6010	2	mg/kg	Thallium	0.26	
D-258-3B-101317-6-8	SA_57-2mm	EPA6010	2	mg/kg	Vanadium	28.01	
D-258-3B-101317-6-8	SA_57-2mm	EPA6010	2	mg/kg	Zinc	37.30	
D-258-3B-101317-8-10	SA_58-2mm	EPA6010	2	mg/kg	Aluminum	13644.68	
D-258-3B-101317-8-10	SA_58-2mm	EPA6010	2	mg/kg	Antimony	1.48	blk rl
D-258-3B-101317-8-10	SA_58-2mm	EPA6010	2	mg/kg	Arsenic	2.34	



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-258-3B-101317-8-10	SA_58-2mm	EPA6010	2	mg/kg	Barium	92.26	
D-258-3B-101317-8-10	SA_58-2mm	EPA6010	2	mg/kg	Beryllium	0.42	crm rl
D-258-3B-101317-8-10	SA_58-2mm	EPA6010	2	mg/kg	Cadmium	0.25	rl
D-258-3B-101317-8-10	SA_58-2mm	EPA6010	2	mg/kg	Calcium	2493.45	
D-258-3B-101317-8-10	SA_58-2mm	EPA6010	2	mg/kg	Chromium	12.58	dup
D-258-3B-101317-8-10	SA_58-2mm	EPA6010	2	mg/kg	Cobalt	3.89	
D-258-3B-101317-8-10	SA_58-2mm	EPA6010	2	mg/kg	Copper	10.16	
D-258-3B-101317-8-10	SA_58-2mm	EPA6010	2	mg/kg	Iron	11467.32	
D-258-3B-101317-8-10	SA_58-2mm	EPA6010	2	mg/kg	Lead	4.07	
D-258-3B-101317-8-10	SA_58-2mm	EPA6010	2	mg/kg	Magnesium	2871.54	
D-258-3B-101317-8-10	SA_58-2mm	EPA6010	2	mg/kg	Manganese	278.94	
D-258-3B-101317-8-10	SA_58-2mm	EPA6010	2	mg/kg	Nickel	8.71	
D-258-3B-101317-8-10	SA_58-2mm	EPA6010	2	mg/kg	Phosphorus	754.63	
D-258-3B-101317-8-10	SA_58-2mm	EPA6010	2	mg/kg	Potassium	858.26	crm
D-258-3B-101317-8-10	SA_58-2mm	EPA6010	2	mg/kg	Selenium	2.19	rl
D-258-3B-101317-8-10	SA_58-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL
D-258-3B-101317-8-10	SA_58-2mm	EPA6010	2	mg/kg	Sodium	163.52	
D-258-3B-101317-8-10	SA_58-2mm	EPA6010	2	mg/kg	Thallium	0.53	rl
D-258-3B-101317-8-10	SA_58-2mm	EPA6010	2	mg/kg	Vanadium	26.57	
D-258-3B-101317-8-10	SA_58-2mm	EPA6010	2	mg/kg	Zinc	32.94	
D-258-3B-101317-10-12	SA_59-2mm	EPA6010	2	mg/kg	Aluminum	14351.23	
D-258-3B-101317-10-12	SA_59-2mm	EPA6010	2	mg/kg	Antimony	1.15	blk rl
D-258-3B-101317-10-12	SA_59-2mm	EPA6010	2	mg/kg	Arsenic	1.96	
D-258-3B-101317-10-12	SA_59-2mm	EPA6010	2	mg/kg	Barium	81.77	
D-258-3B-101317-10-12	SA_59-2mm	EPA6010	2	mg/kg	Beryllium	0.45	crm rl
D-258-3B-101317-10-12	SA_59-2mm	EPA6010	2	mg/kg	Cadmium	0.28	rl
D-258-3B-101317-10-12	SA_59-2mm	EPA6010	2	mg/kg	Calcium	2957.80	
D-258-3B-101317-10-12	SA_59-2mm	EPA6010	2	mg/kg	Chromium	12.67	dup



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-258-3B-101317-10-12	SA_59-2mm	EPA6010	2	mg/kg	Cobalt	4.37	
D-258-3B-101317-10-12	SA_59-2mm	EPA6010	2	mg/kg	Copper	10.16	
D-258-3B-101317-10-12	SA_59-2mm	EPA6010	2	mg/kg	Iron	12920.79	
D-258-3B-101317-10-12	SA_59-2mm	EPA6010	2	mg/kg	Lead	4.05	
D-258-3B-101317-10-12	SA_59-2mm	EPA6010	2	mg/kg	Magnesium	2689.40	
D-258-3B-101317-10-12	SA_59-2mm	EPA6010	2	mg/kg	Manganese	267.56	
D-258-3B-101317-10-12	SA_59-2mm	EPA6010	2	mg/kg	Nickel	8.95	
D-258-3B-101317-10-12	SA_59-2mm	EPA6010	2	mg/kg	Phosphorus	786.33	
D-258-3B-101317-10-12	SA_59-2mm	EPA6010	2	mg/kg	Potassium	907.18	crm
D-258-3B-101317-10-12	SA_59-2mm	EPA6010	2	mg/kg	Selenium	2.64	rl
D-258-3B-101317-10-12	SA_59-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL
D-258-3B-101317-10-12	SA_59-2mm	EPA6010	2	mg/kg	Sodium	229.33	
D-258-3B-101317-10-12	SA_59-2mm	EPA6010	2	mg/kg	Thallium	0.51	rl
D-258-3B-101317-10-12	SA_59-2mm	EPA6010	2	mg/kg	Vanadium	30.12	
D-258-3B-101317-10-12	SA_59-2mm	EPA6010	2	mg/kg	Zinc	31.84	
D-258-3D-101317-0-2	SA_60-2mm	EPA6010	2	mg/kg	Aluminum	8559.95	
D-258-3D-101317-0-2	SA_60-2mm	EPA6010	2	mg/kg	Antimony	7.34	blk
D-258-3D-101317-0-2	SA_60-2mm	EPA6010	2	mg/kg	Arsenic	13.37	
D-258-3D-101317-0-2	SA_60-2mm	EPA6010	2	mg/kg	Barium	88.73	
D-258-3D-101317-0-2	SA_60-2mm	EPA6010	2	mg/kg	Beryllium	0.29	crm rl
D-258-3D-101317-0-2	SA_60-2mm	EPA6010	2	mg/kg	Cadmium	4.74	
D-258-3D-101317-0-2	SA_60-2mm	EPA6010	2	mg/kg	Calcium	3034.66	
D-258-3D-101317-0-2	SA_60-2mm	EPA6010	2	mg/kg	Chromium	11.69	dup
D-258-3D-101317-0-2	SA_60-2mm	EPA6010	2	mg/kg	Cobalt	3.13	
D-258-3D-101317-0-2	SA_60-2mm	EPA6010	2	mg/kg	Copper	16.42	
D-258-3D-101317-0-2	SA_60-2mm	EPA6010	2	mg/kg	Iron	10410.11	
D-258-3D-101317-0-2	SA_60-2mm	EPA6010	2	mg/kg	Lead	196.48	
D-258-3D-101317-0-2	SA_60-2mm	EPA6010	2	mg/kg	Magnesium	1987.02	



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-258-3D-101317-0-2	SA_60-2mm	EPA6010	2	mg/kg	Manganese	355.38	
D-258-3D-101317-0-2	SA_60-2mm	EPA6010	2	mg/kg	Nickel	6.89	
D-258-3D-101317-0-2	SA_60-2mm	EPA6010	2	mg/kg	Phosphorus	803.90	
D-258-3D-101317-0-2	SA_60-2mm	EPA6010	2	mg/kg	Potassium	756.45	crm
D-258-3D-101317-0-2	SA_60-2mm	EPA6010	2	mg/kg	Selenium	2.76	rl
D-258-3D-101317-0-2	SA_60-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL
D-258-3D-101317-0-2	SA_60-2mm	EPA6010	2	mg/kg	Sodium	90.30	
D-258-3D-101317-0-2	SA_60-2mm	EPA6010	2	mg/kg	Thallium	0.80	rl
D-258-3D-101317-0-2	SA_60-2mm	EPA6010	2	mg/kg	Vanadium	23.19	
D-258-3D-101317-0-2	SA_60-2mm	EPA6010	2	mg/kg	Zinc	220.83	
D-401-2A-101317-8-10	SA_61-2mm	EPA6010	2	mg/kg	Aluminum	16731.72	
D-401-2A-101317-8-10	SA_61-2mm	EPA6010	2	mg/kg	Antimony	2.64	blk rl
D-401-2A-101317-8-10	SA_61-2mm	EPA6010	2	mg/kg	Arsenic	4.56	
D-401-2A-101317-8-10	SA_61-2mm	EPA6010	2	mg/kg	Barium	132.84	
D-401-2A-101317-8-10	SA_61-2mm	EPA6010	2	mg/kg	Beryllium	0.53	crm rl
D-401-2A-101317-8-10	SA_61-2mm	EPA6010	2	mg/kg	Cadmium	0.60	rl
D-401-2A-101317-8-10	SA_61-2mm	EPA6010	2	mg/kg	Calcium	2588.85	
D-401-2A-101317-8-10	SA_61-2mm	EPA6010	2	mg/kg	Chromium	28.13	dup
D-401-2A-101317-8-10	SA_61-2mm	EPA6010	2	mg/kg	Cobalt	5.92	
D-401-2A-101317-8-10	SA_61-2mm	EPA6010	2	mg/kg	Copper	15.97	
D-401-2A-101317-8-10	SA_61-2mm	EPA6010	2	mg/kg	Iron	25820.08	
D-401-2A-101317-8-10	SA_61-2mm	EPA6010	2	mg/kg	Lead	12.71	
D-401-2A-101317-8-10	SA_61-2mm	EPA6010	2	mg/kg	Magnesium	2645.93	
D-401-2A-101317-8-10	SA_61-2mm	EPA6010	2	mg/kg	Manganese	385.06	
D-401-2A-101317-8-10	SA_61-2mm	EPA6010	2	mg/kg	Nickel	12.91	
D-401-2A-101317-8-10	SA_61-2mm	EPA6010	2	mg/kg	Phosphorus	922.57	
D-401-2A-101317-8-10	SA_61-2mm	EPA6010	2	mg/kg	Potassium	933.55	crm
D-401-2A-101317-8-10	SA_61-2mm	EPA6010	2	mg/kg	Selenium	2.62	rl



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-2A-101317-8-10	SA_61-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL
D-401-2A-101317-8-10	SA_61-2mm	EPA6010	2	mg/kg	Sodium	163.19	
D-401-2A-101317-8-10	SA_61-2mm	EPA6010	2	mg/kg	Thallium	0.57	rl
D-401-2A-101317-8-10	SA_61-2mm	EPA6010	2	mg/kg	Vanadium	65.14	
D-401-2A-101317-8-10	SA_61-2mm	EPA6010	2	mg/kg	Zinc	53.43	
D-401-2B-101317-8-10	SA_62-2mm	EPA6010	2	mg/kg	Aluminum	16360.83	
D-401-2B-101317-8-10	SA_62-2mm	EPA6010	2	mg/kg	Antimony	2.82	blk rl
D-401-2B-101317-8-10	SA_62-2mm	EPA6010	2	mg/kg	Arsenic	4.34	
D-401-2B-101317-8-10	SA_62-2mm	EPA6010	2	mg/kg	Barium	145.73	
D-401-2B-101317-8-10	SA_62-2mm	EPA6010	2	mg/kg	Beryllium	0.53	crm rl
D-401-2B-101317-8-10	SA_62-2mm	EPA6010	2	mg/kg	Cadmium	0.56	rl
D-401-2B-101317-8-10	SA_62-2mm	EPA6010	2	mg/kg	Calcium	2962.89	
D-401-2B-101317-8-10	SA_62-2mm	EPA6010	2	mg/kg	Chromium	32.35	dup
D-401-2B-101317-8-10	SA_62-2mm	EPA6010	2	mg/kg	Cobalt	6.60	
D-401-2B-101317-8-10	SA_62-2mm	EPA6010	2	mg/kg	Copper	17.19	
D-401-2B-101317-8-10	SA_62-2mm	EPA6010	2	mg/kg	Iron	27741.88	
D-401-2B-101317-8-10	SA_62-2mm	EPA6010	2	mg/kg	Lead	6.80	
D-401-2B-101317-8-10	SA_62-2mm	EPA6010	2	mg/kg	Magnesium	2868.46	
D-401-2B-101317-8-10	SA_62-2mm	EPA6010	2	mg/kg	Manganese	481.25	
D-401-2B-101317-8-10	SA_62-2mm	EPA6010	2	mg/kg	Nickel	16.26	
D-401-2B-101317-8-10	SA_62-2mm	EPA6010	2	mg/kg	Phosphorus	1034.24	
D-401-2B-101317-8-10	SA_62-2mm	EPA6010	2	mg/kg	Potassium	1025.42	crm
D-401-2B-101317-8-10	SA_62-2mm	EPA6010	2	mg/kg	Selenium	2.22	rl
D-401-2B-101317-8-10	SA_62-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL
D-401-2B-101317-8-10	SA_62-2mm	EPA6010	2	mg/kg	Sodium	162.13	
D-401-2B-101317-8-10	SA_62-2mm	EPA6010	2	mg/kg	Thallium	0.41	rl
D-401-2B-101317-8-10	SA_62-2mm	EPA6010	2	mg/kg	Vanadium	73.36	
D-401-2B-101317-8-10	SA_62-2mm	EPA6010	2	mg/kg	Zinc	63.55	



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-2D-101317-8-10	SA_63-2mm	EPA6010	2	mg/kg	Aluminum	19805.77	
D-401-2D-101317-8-10	SA_63-2mm	EPA6010	2	mg/kg	Antimony	6.21	blk
D-401-2D-101317-8-10	SA_63-2mm	EPA6010	2	mg/kg	Arsenic	4.89	
D-401-2D-101317-8-10	SA_63-2mm	EPA6010	2	mg/kg	Barium	139.09	
D-401-2D-101317-8-10	SA_63-2mm	EPA6010	2	mg/kg	Beryllium	0.63	crm rl
D-401-2D-101317-8-10	SA_63-2mm	EPA6010	2	mg/kg	Cadmium	0.69	rl
D-401-2D-101317-8-10	SA_63-2mm	EPA6010	2	mg/kg	Calcium	3375.82	
D-401-2D-101317-8-10	SA_63-2mm	EPA6010	2	mg/kg	Chromium	35.31	dup
D-401-2D-101317-8-10	SA_63-2mm	EPA6010	2	mg/kg	Cobalt	7.20	
D-401-2D-101317-8-10	SA_63-2mm	EPA6010	2	mg/kg	Copper	15.87	
D-401-2D-101317-8-10	SA_63-2mm	EPA6010	2	mg/kg	Iron	29259.61	
D-401-2D-101317-8-10	SA_63-2mm	EPA6010	2	mg/kg	Lead	15.55	
D-401-2D-101317-8-10	SA_63-2mm	EPA6010	2	mg/kg	Magnesium	3043.00	
D-401-2D-101317-8-10	SA_63-2mm	EPA6010	2	mg/kg	Manganese	472.43	
D-401-2D-101317-8-10	SA_63-2mm	EPA6010	2	mg/kg	Nickel	14.95	
D-401-2D-101317-8-10	SA_63-2mm	EPA6010	2	mg/kg	Phosphorus	1074.68	
D-401-2D-101317-8-10	SA_63-2mm	EPA6010	2	mg/kg	Potassium	1262.07	crm
D-401-2D-101317-8-10	SA_63-2mm	EPA6010	2	mg/kg	Selenium	2.87	rl
D-401-2D-101317-8-10	SA_63-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL
D-401-2D-101317-8-10	SA_63-2mm	EPA6010	2	mg/kg	Sodium	235.18	
D-401-2D-101317-8-10	SA_63-2mm	EPA6010	2	mg/kg	Thallium	0.35	rl
D-401-2D-101317-8-10	SA_63-2mm	EPA6010	2	mg/kg	Vanadium	77.39	
D-401-2D-101317-8-10	SA_63-2mm	EPA6010	2	mg/kg	Zinc	97.20	
D-401-2C-101317-10-12	SA_64-2mm	EPA6010	2	mg/kg	Aluminum	17671.16	
D-401-2C-101317-10-12	SA_64-2mm	EPA6010	2	mg/kg	Antimony	2.96	blk rl
D-401-2C-101317-10-12	SA_64-2mm	EPA6010	2	mg/kg	Arsenic	4.38	
D-401-2C-101317-10-12	SA_64-2mm	EPA6010	2	mg/kg	Barium	114.42	
D-401-2C-101317-10-12	SA_64-2mm	EPA6010	2	mg/kg	Beryllium	0.60	crm rl



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-2C-101317-10-12	SA_64-2mm	EPA6010	2	mg/kg	Cadmium	0.57	rl
D-401-2C-101317-10-12	SA_64-2mm	EPA6010	2	mg/kg	Calcium	2933.74	
D-401-2C-101317-10-12	SA_64-2mm	EPA6010	2	mg/kg	Chromium	28.16	dup
D-401-2C-101317-10-12	SA_64-2mm	EPA6010	2	mg/kg	Cobalt	6.47	
D-401-2C-101317-10-12	SA_64-2mm	EPA6010	2	mg/kg	Copper	16.91	
D-401-2C-101317-10-12	SA_64-2mm	EPA6010	2	mg/kg	Iron	26767.22	
D-401-2C-101317-10-12	SA_64-2mm	EPA6010	2	mg/kg	Lead	10.93	
D-401-2C-101317-10-12	SA_64-2mm	EPA6010	2	mg/kg	Magnesium	2734.79	
D-401-2C-101317-10-12	SA_64-2mm	EPA6010	2	mg/kg	Manganese	387.18	
D-401-2C-101317-10-12	SA_64-2mm	EPA6010	2	mg/kg	Nickel	13.15	
D-401-2C-101317-10-12	SA_64-2mm	EPA6010	2	mg/kg	Phosphorus	1026.39	
D-401-2C-101317-10-12	SA_64-2mm	EPA6010	2	mg/kg	Potassium	1119.97	crm
D-401-2C-101317-10-12	SA_64-2mm	EPA6010	2	mg/kg	Selenium	3.28	rl
D-401-2C-101317-10-12	SA_64-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL
D-401-2C-101317-10-12	SA_64-2mm	EPA6010	2	mg/kg	Sodium	211.16	
D-401-2C-101317-10-12	SA_64-2mm	EPA6010	2	mg/kg	Thallium	0.43	rl
D-401-2C-101317-10-12	SA_64-2mm	EPA6010	2	mg/kg	Vanadium	68.98	
D-401-2C-101317-10-12	SA_64-2mm	EPA6010	2	mg/kg	Zinc	324.10	
D-401-2A-101317-10-12	SA_65-2mm	EPA6010	2	mg/kg	Aluminum	16922.73	
D-401-2A-101317-10-12	SA_65-2mm	EPA6010	2	mg/kg	Antimony	2.60	blk rl
D-401-2A-101317-10-12	SA_65-2mm	EPA6010	2	mg/kg	Arsenic	4.06	
D-401-2A-101317-10-12	SA_65-2mm	EPA6010	2	mg/kg	Barium	123.76	
D-401-2A-101317-10-12	SA_65-2mm	EPA6010	2	mg/kg	Beryllium	0.52	crm rl
D-401-2A-101317-10-12	SA_65-2mm	EPA6010	2	mg/kg	Cadmium	0.48	rl
D-401-2A-101317-10-12	SA_65-2mm	EPA6010	2	mg/kg	Calcium	2785.38	
D-401-2A-101317-10-12	SA_65-2mm	EPA6010	2	mg/kg	Chromium	35.08	dup
D-401-2A-101317-10-12	SA_65-2mm	EPA6010	2	mg/kg	Cobalt	6.42	
D-401-2A-101317-10-12	SA_65-2mm	EPA6010	2	mg/kg	Copper	15.25	



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-2A-101317-10-12	SA_65-2mm	EPA6010	2	mg/kg	Iron	29966.45	
D-401-2A-101317-10-12	SA_65-2mm	EPA6010	2	mg/kg	Lead	6.64	
D-401-2A-101317-10-12	SA_65-2mm	EPA6010	2	mg/kg	Magnesium	3108.86	
D-401-2A-101317-10-12	SA_65-2mm	EPA6010	2	mg/kg	Manganese	362.88	
D-401-2A-101317-10-12	SA_65-2mm	EPA6010	2	mg/kg	Nickel	15.65	
D-401-2A-101317-10-12	SA_65-2mm	EPA6010	2	mg/kg	Phosphorus	823.11	
D-401-2A-101317-10-12	SA_65-2mm	EPA6010	2	mg/kg	Potassium	1026.78	crm
D-401-2A-101317-10-12	SA_65-2mm	EPA6010	2	mg/kg	Selenium	2.08	rl
D-401-2A-101317-10-12	SA_65-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL
D-401-2A-101317-10-12	SA_65-2mm	EPA6010	2	mg/kg	Sodium	206.72	
D-401-2A-101317-10-12	SA_65-2mm	EPA6010	2	mg/kg	Thallium	0.76	rl
D-401-2A-101317-10-12	SA_65-2mm	EPA6010	2	mg/kg	Vanadium	74.48	
D-401-2A-101317-10-12	SA_65-2mm	EPA6010	2	mg/kg	Zinc	44.99	
D-401-2C-101317-6-8	SA_66-2mm	EPA6010	2	mg/kg	Aluminum	17629.55	
D-401-2C-101317-6-8	SA_66-2mm	EPA6010	2	mg/kg	Antimony	4.90	blk rl
D-401-2C-101317-6-8	SA_66-2mm	EPA6010	2	mg/kg	Arsenic	6.87	
D-401-2C-101317-6-8	SA_66-2mm	EPA6010	2	mg/kg	Barium	151.64	
D-401-2C-101317-6-8	SA_66-2mm	EPA6010	2	mg/kg	Beryllium	0.56	crm rl
D-401-2C-101317-6-8	SA_66-2mm	EPA6010	2	mg/kg	Cadmium	0.90	rl
D-401-2C-101317-6-8	SA_66-2mm	EPA6010	2	mg/kg	Calcium	3127.36	
D-401-2C-101317-6-8	SA_66-2mm	EPA6010	2	mg/kg	Chromium	26.96	dup
D-401-2C-101317-6-8	SA_66-2mm	EPA6010	2	mg/kg	Cobalt	6.01	
D-401-2C-101317-6-8	SA_66-2mm	EPA6010	2	mg/kg	Copper	17.11	
D-401-2C-101317-6-8	SA_66-2mm	EPA6010	2	mg/kg	Iron	24048.34	
D-401-2C-101317-6-8	SA_66-2mm	EPA6010	2	mg/kg	Lead	20.65	
D-401-2C-101317-6-8	SA_66-2mm	EPA6010	2	mg/kg	Magnesium	2710.20	
D-401-2C-101317-6-8	SA_66-2mm	EPA6010	2	mg/kg	Manganese	526.94	
D-401-2C-101317-6-8	SA_66-2mm	EPA6010	2	mg/kg	Nickel	12.72	



Sample ID	Analysis ID	d_labresult.method_code	Batch	d labresult.units	d labresult.analyte	value	flags
D-401-2C-101317-6-8	SA_66-2mm	EPA6010	2	mg/kg	Phosphorus	1000.85	
D-401-2C-101317-6-8	SA_66-2mm	EPA6010	2	mg/kg	Potassium	1019.09	crm
D-401-2C-101317-6-8	SA_66-2mm	EPA6010	2	mg/kg	Selenium	3.12	rl
D-401-2C-101317-6-8	SA_66-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL
D-401-2C-101317-6-8	SA_66-2mm	EPA6010	2	mg/kg	Sodium	183.64	
D-401-2C-101317-6-8	SA_66-2mm	EPA6010	2	mg/kg	Thallium	0.55	rl
D-401-2C-101317-6-8	SA_66-2mm	EPA6010	2	mg/kg	Vanadium	60.06	
D-401-2C-101317-6-8	SA_66-2mm	EPA6010	2	mg/kg	Zinc	552.56	
D-401-2A-101317-6-8	SA_67-2mm	EPA6010	2	mg/kg	Aluminum	17607.16	
D-401-2A-101317-6-8	SA_67-2mm	EPA6010	2	mg/kg	Antimony	4.54	blk rl
D-401-2A-101317-6-8	SA_67-2mm	EPA6010	2	mg/kg	Arsenic	4.32	
D-401-2A-101317-6-8	SA_67-2mm	EPA6010	2	mg/kg	Barium	110.25	
D-401-2A-101317-6-8	SA_67-2mm	EPA6010	2	mg/kg	Beryllium	0.51	crm rl
D-401-2A-101317-6-8	SA_67-2mm	EPA6010	2	mg/kg	Cadmium	0.93	rl
D-401-2A-101317-6-8	SA_67-2mm	EPA6010	2	mg/kg	Calcium	3388.19	
D-401-2A-101317-6-8	SA_67-2mm	EPA6010	2	mg/kg	Chromium	27.19	dup
D-401-2A-101317-6-8	SA_67-2mm	EPA6010	2	mg/kg	Cobalt	7.14	
D-401-2A-101317-6-8	SA_67-2mm	EPA6010	2	mg/kg	Copper	19.95	
D-401-2A-101317-6-8	SA_67-2mm	EPA6010	2	mg/kg	Iron	26649.01	
D-401-2A-101317-6-8	SA_67-2mm	EPA6010	2	mg/kg	Lead	13.50	
D-401-2A-101317-6-8	SA_67-2mm	EPA6010	2	mg/kg	Magnesium	3865.09	
D-401-2A-101317-6-8	SA_67-2mm	EPA6010	2	mg/kg	Manganese	471.26	
D-401-2A-101317-6-8	SA_67-2mm	EPA6010	2	mg/kg	Nickel	13.46	
D-401-2A-101317-6-8	SA_67-2mm	EPA6010	2	mg/kg	Phosphorus	1085.93	
D-401-2A-101317-6-8	SA_67-2mm	EPA6010	2	mg/kg	Potassium	1001.60	crm
D-401-2A-101317-6-8	SA_67-2mm	EPA6010	2	mg/kg	Selenium	2.90	rl
D-401-2A-101317-6-8	SA_67-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL
D-401-2A-101317-6-8	SA_67-2mm	EPA6010	2	mg/kg	Sodium	156.23	



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-2A-101317-6-8	SA_67-2mm	EPA6010	2	mg/kg	Thallium	0.77	rl
D-401-2A-101317-6-8	SA_67-2mm	EPA6010	2	mg/kg	Vanadium	66.36	
D-401-2A-101317-6-8	SA_67-2mm	EPA6010	2	mg/kg	Zinc	225.00	
D-401-2B-101317-6-8	SA_68-2mm	EPA6010	2	mg/kg	Aluminum	16460.32	
D-401-2B-101317-6-8	SA_68-2mm	EPA6010	2	mg/kg	Antimony	3.69	blk rl
D-401-2B-101317-6-8	SA_68-2mm	EPA6010	2	mg/kg	Arsenic	4.38	
D-401-2B-101317-6-8	SA_68-2mm	EPA6010	2	mg/kg	Barium	140.50	
D-401-2B-101317-6-8	SA_68-2mm	EPA6010	2	mg/kg	Beryllium	0.51	crm rl
D-401-2B-101317-6-8	SA_68-2mm	EPA6010	2	mg/kg	Cadmium	0.92	rl
D-401-2B-101317-6-8	SA_68-2mm	EPA6010	2	mg/kg	Calcium	3320.43	
D-401-2B-101317-6-8	SA_68-2mm	EPA6010	2	mg/kg	Chromium	33.20	dup
D-401-2B-101317-6-8	SA_68-2mm	EPA6010	2	mg/kg	Cobalt	6.21	
D-401-2B-101317-6-8	SA_68-2mm	EPA6010	2	mg/kg	Copper	14.06	
D-401-2B-101317-6-8	SA_68-2mm	EPA6010	2	mg/kg	Iron	28043.87	
D-401-2B-101317-6-8	SA_68-2mm	EPA6010	2	mg/kg	Lead	7.61	
D-401-2B-101317-6-8	SA_68-2mm	EPA6010	2	mg/kg	Magnesium	3180.43	
D-401-2B-101317-6-8	SA_68-2mm	EPA6010	2	mg/kg	Manganese	501.77	
D-401-2B-101317-6-8	SA_68-2mm	EPA6010	2	mg/kg	Nickel	13.40	
D-401-2B-101317-6-8	SA_68-2mm	EPA6010	2	mg/kg	Phosphorus	1100.06	
D-401-2B-101317-6-8	SA_68-2mm	EPA6010	2	mg/kg	Potassium	1147.09	crm
D-401-2B-101317-6-8	SA_68-2mm	EPA6010	2	mg/kg	Selenium	3.25	rl
D-401-2B-101317-6-8	SA_68-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL
D-401-2B-101317-6-8	SA_68-2mm	EPA6010	2	mg/kg	Sodium	188.49	
D-401-2B-101317-6-8	SA_68-2mm	EPA6010	2	mg/kg	Thallium	0.59	rl
D-401-2B-101317-6-8	SA_68-2mm	EPA6010	2	mg/kg	Vanadium	71.23	
D-401-2B-101317-6-8	SA_68-2mm	EPA6010	2	mg/kg	Zinc	308.99	
D-401-2D-101317-6-8	SA_69-2mm	EPA6010	2	mg/kg	Aluminum	18700.76	
D-401-2D-101317-6-8	SA_69-2mm	EPA6010	2	mg/kg	Antimony	8.38	blk



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-2D-101317-6-8	SA_69-2mm	EPA6010	2	mg/kg	Arsenic	15.45	
D-401-2D-101317-6-8	SA_69-2mm	EPA6010	2	mg/kg	Barium	156.99	
D-401-2D-101317-6-8	SA_69-2mm	EPA6010	2	mg/kg	Beryllium	0.59	crm rl
D-401-2D-101317-6-8	SA_69-2mm	EPA6010	2	mg/kg	Cadmium	1.92	
D-401-2D-101317-6-8	SA_69-2mm	EPA6010	2	mg/kg	Calcium	3588.91	
D-401-2D-101317-6-8	SA_69-2mm	EPA6010	2	mg/kg	Chromium	29.18	dup
D-401-2D-101317-6-8	SA_69-2mm	EPA6010	2	mg/kg	Cobalt	6.69	•
D-401-2D-101317-6-8	SA_69-2mm	EPA6010	2	mg/kg	Copper	17.19	
D-401-2D-101317-6-8	SA_69-2mm	EPA6010	2	mg/kg	Iron	27161.54	
D-401-2D-101317-6-8	SA_69-2mm	EPA6010	2	mg/kg	Lead	18.15	
D-401-2D-101317-6-8	SA_69-2mm	EPA6010	2	mg/kg	Magnesium	1743.09	
D-401-2D-101317-6-8	SA_69-2mm	EPA6010	2	mg/kg	Manganese	562.84	
D-401-2D-101317-6-8	SA_69-2mm	EPA6010	2	mg/kg	Nickel	14.08	
D-401-2D-101317-6-8	SA_69-2mm	EPA6010	2	mg/kg	Phosphorus	1226.37	
D-401-2D-101317-6-8	SA_69-2mm	EPA6010	2	mg/kg	Potassium	1366.74	crm
D-401-2D-101317-6-8	SA_69-2mm	EPA6010	2	mg/kg	Selenium	2.98	rl
D-401-2D-101317-6-8	SA_69-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL
D-401-2D-101317-6-8	SA_69-2mm	EPA6010	2	mg/kg	Sodium	197.84	
D-401-2D-101317-6-8	SA_69-2mm	EPA6010	2	mg/kg	Thallium	0.43	rl
D-401-2D-101317-6-8	SA_69-2mm	EPA6010	2	mg/kg	Vanadium	68.90	
D-401-2D-101317-6-8	SA_69-2mm	EPA6010	2	mg/kg	Zinc	349.72	
D-401-2C-101317-8-10	SA_70-2mm	EPA6010	2	mg/kg	Aluminum	17830.11	
D-401-2C-101317-8-10	SA_70-2mm	EPA6010	2	mg/kg	Antimony	3.76	blk rl
D-401-2C-101317-8-10	SA_70-2mm	EPA6010	2	mg/kg	Arsenic	4.09	
D-401-2C-101317-8-10	SA_70-2mm	EPA6010	2	mg/kg	Barium	110.34	
D-401-2C-101317-8-10	SA_70-2mm	EPA6010	2	mg/kg	Beryllium	0.57	crm rl
D-401-2C-101317-8-10	SA_70-2mm	EPA6010	2	mg/kg	Cadmium	0.53	rl
D-401-2C-101317-8-10	SA_70-2mm	EPA6010	2	mg/kg	Calcium	2931.86	



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Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-2C-101317-8-10	SA_70-2mm	EPA6010	2	mg/kg	Chromium	32.87	dup
D-401-2C-101317-8-10	SA_70-2mm	EPA6010	2	mg/kg	Cobalt	6.46	
D-401-2C-101317-8-10	SA_70-2mm	EPA6010	2	mg/kg	Copper	16.55	
D-401-2C-101317-8-10	SA_70-2mm	EPA6010	2	mg/kg	Iron	29384.15	
D-401-2C-101317-8-10	SA_70-2mm	EPA6010	2	mg/kg	Lead	10.21	
D-401-2C-101317-8-10	SA_70-2mm	EPA6010	2	mg/kg	Magnesium	3071.59	
D-401-2C-101317-8-10	SA_70-2mm	EPA6010	2	mg/kg	Manganese	426.64	
D-401-2C-101317-8-10	SA_70-2mm	EPA6010	2	mg/kg	Nickel	14.83	
D-401-2C-101317-8-10	SA_70-2mm	EPA6010	2	mg/kg	Phosphorus	999.53	
D-401-2C-101317-8-10	SA_70-2mm	EPA6010	2	mg/kg	Potassium	1006.49	crm
D-401-2C-101317-8-10	SA_70-2mm	EPA6010	2	mg/kg	Selenium	1.24	rl
D-401-2C-101317-8-10	SA_70-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL
D-401-2C-101317-8-10	SA_70-2mm	EPA6010	2	mg/kg	Sodium	186.11	
D-401-2C-101317-8-10	SA_70-2mm	EPA6010	2	mg/kg	Thallium	0.42	rl
D-401-2C-101317-8-10	SA_70-2mm	EPA6010	2	mg/kg	Vanadium	73.78	
D-401-2C-101317-8-10	SA_70-2mm	EPA6010	2	mg/kg	Zinc	337.21	
D-401-2D-101317-2-4	SA_71-2mm	EPA6010	2	mg/kg	Aluminum	12553.25	
D-401-2D-101317-2-4	SA_71-2mm	EPA6010	2	mg/kg	Antimony	33.83	blk
D-401-2D-101317-2-4	SA_71-2mm	EPA6010	2	mg/kg	Arsenic	41.96	
D-401-2D-101317-2-4	SA_71-2mm	EPA6010	2	mg/kg	Barium	123.72	
D-401-2D-101317-2-4	SA_71-2mm	EPA6010	2	mg/kg	Beryllium	0.41	crm rl
D-401-2D-101317-2-4	SA_71-2mm	EPA6010	2	mg/kg	Cadmium	11.90	
D-401-2D-101317-2-4	SA_71-2mm	EPA6010	2	mg/kg	Calcium	4151.87	
D-401-2D-101317-2-4	SA_71-2mm	EPA6010	2	mg/kg	Chromium	27.21	dup
D-401-2D-101317-2-4	SA_71-2mm	EPA6010	2	mg/kg	Cobalt	5.33	
D-401-2D-101317-2-4	SA_71-2mm	EPA6010	2	mg/kg	Copper	40.87	
D-401-2D-101317-2-4	SA_71-2mm	EPA6010	2	mg/kg	Iron	18185.58	
D-401-2D-101317-2-4	SA_71-2mm	EPA6010	2	mg/kg	Lead	901.07	



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-2D-101317-2-4	SA_71-2mm	EPA6010	2	mg/kg	Magnesium	2217.21	
D-401-2D-101317-2-4	SA_71-2mm	EPA6010	2	mg/kg	Manganese	537.53	
D-401-2D-101317-2-4	SA_71-2mm	EPA6010	2	mg/kg	Nickel	10.96	
D-401-2D-101317-2-4	SA_71-2mm	EPA6010	2	mg/kg	Phosphorus	1255.36	
D-401-2D-101317-2-4	SA_71-2mm	EPA6010	2	mg/kg	Potassium	1368.74	crm
D-401-2D-101317-2-4	SA_71-2mm	EPA6010	2	mg/kg	Selenium	3.19	rl
D-401-2D-101317-2-4	SA_71-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL
D-401-2D-101317-2-4	SA_71-2mm	EPA6010	2	mg/kg	Sodium	183.39	
D-401-2D-101317-2-4	SA_71-2mm	EPA6010	2	mg/kg	Thallium	1.18	rl
D-401-2D-101317-2-4	SA_71-2mm	EPA6010	2	mg/kg	Vanadium	42.74	
D-401-2D-101317-2-4	SA_71-2mm	EPA6010	2	mg/kg	Zinc	557.54	
D-401-2C-101317-4-6	SA_72-2mm	EPA6010	2	mg/kg	Aluminum	17616.79	
D-401-2C-101317-4-6	SA_72-2mm	EPA6010	2	mg/kg	Antimony	8.48	blk
D-401-2C-101317-4-6	SA_72-2mm	EPA6010	2	mg/kg	Arsenic	18.75	
D-401-2C-101317-4-6	SA_72-2mm	EPA6010	2	mg/kg	Barium	202.50	
D-401-2C-101317-4-6	SA_72-2mm	EPA6010	2	mg/kg	Beryllium	0.56	crm rl
D-401-2C-101317-4-6	SA_72-2mm	EPA6010	2	mg/kg	Cadmium	7.94	
D-401-2C-101317-4-6	SA_72-2mm	EPA6010	2	mg/kg	Calcium	2894.67	
D-401-2C-101317-4-6	SA_72-2mm	EPA6010	2	mg/kg	Chromium	32.44	dup
D-401-2C-101317-4-6	SA_72-2mm	EPA6010	2	mg/kg	Cobalt	6.47	
D-401-2C-101317-4-6	SA_72-2mm	EPA6010	2	mg/kg	Copper	20.50	
D-401-2C-101317-4-6	SA_72-2mm	EPA6010	2	mg/kg	Iron	25798.25	
D-401-2C-101317-4-6	SA_72-2mm	EPA6010	2	mg/kg	Lead	106.51	
D-401-2C-101317-4-6	SA_72-2mm	EPA6010	2	mg/kg	Magnesium	2840.25	
D-401-2C-101317-4-6	SA_72-2mm	EPA6010	2	mg/kg	Manganese	686.38	
D-401-2C-101317-4-6	SA_72-2mm	EPA6010	2	mg/kg	Nickel	14.59	
D-401-2C-101317-4-6	SA_72-2mm	EPA6010	2	mg/kg	Phosphorus	1098.45	
D-401-2C-101317-4-6	SA_72-2mm	EPA6010	2	mg/kg	Potassium	1121.77	crm



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-2C-101317-4-6	SA_72-2mm	EPA6010	2	mg/kg	Selenium	3.83	rl
D-401-2C-101317-4-6	SA_72-2mm	EPA6010	2	mg/kg	Silver	0.2	MDL
D-401-2C-101317-4-6	SA_72-2mm	EPA6010	2	mg/kg	Sodium	193.40	
D-401-2C-101317-4-6	SA_72-2mm	EPA6010	2	mg/kg	Thallium	0.88	rl
D-401-2C-101317-4-6	SA_72-2mm	EPA6010	2	mg/kg	Vanadium	65.90	
D-401-2C-101317-4-6	SA_72-2mm	EPA6010	2	mg/kg	Zinc	1221.88	
D-401-2A-101317-4-6	SA_73-2mm	EPA6010	3	mg/kg	Aluminum	17253.01	
D-401-2A-101317-4-6	SA_73-2mm	EPA6010	3	mg/kg	Antimony	5.21	
D-401-2A-101317-4-6	SA_73-2mm	EPA6010	3	mg/kg	Arsenic	6.62	
D-401-2A-101317-4-6	SA_73-2mm	EPA6010	3	mg/kg	Barium	154.42	
D-401-2A-101317-4-6	SA_73-2mm	EPA6010	3	mg/kg	Beryllium	0.56	crm rl
D-401-2A-101317-4-6	SA_73-2mm	EPA6010	3	mg/kg	Cadmium	3.79	
D-401-2A-101317-4-6	SA_73-2mm	EPA6010	3	mg/kg	Calcium	3342.18	
D-401-2A-101317-4-6	SA_73-2mm	EPA6010	3	mg/kg	Chromium	32.98	spk
D-401-2A-101317-4-6	SA_73-2mm	EPA6010	3	mg/kg	Cobalt	5.93	
D-401-2A-101317-4-6	SA_73-2mm	EPA6010	3	mg/kg	Copper	15.37	
D-401-2A-101317-4-6	SA_73-2mm	EPA6010	3	mg/kg	Iron	25942.85	
D-401-2A-101317-4-6	SA_73-2mm	EPA6010	3	mg/kg	Lead	13.41	
D-401-2A-101317-4-6	SA_73-2mm	EPA6010	3	mg/kg	Magnesium	2368.74	
D-401-2A-101317-4-6	SA_73-2mm	EPA6010	3	mg/kg	Manganese	570.83	
D-401-2A-101317-4-6	SA_73-2mm	EPA6010	3	mg/kg	Nickel	14.23	
D-401-2A-101317-4-6	SA_73-2mm	EPA6010	3	mg/kg	Phosphorus	1043.95	
D-401-2A-101317-4-6	SA_73-2mm	EPA6010	3	mg/kg	Potassium	1301.73	
D-401-2A-101317-4-6	SA_73-2mm	EPA6010	3	mg/kg	Selenium	3.31	blk rl
D-401-2A-101317-4-6	SA_73-2mm	EPA6010	3	mg/kg	Silver	0.2	MDL
D-401-2A-101317-4-6	SA_73-2mm	EPA6010	3	mg/kg	Sodium	246.57	
D-401-2A-101317-4-6	SA_73-2mm	EPA6010	3	mg/kg	Thallium	0.65	blk rl
D-401-2A-101317-4-6	SA_73-2mm	EPA6010	3	mg/kg	Vanadium	67.28	blk



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-2A-101317-4-6	SA_73-2mm	EPA6010	3	mg/kg	Zinc	385.51	
D-401-2B-101317-4-6	SA_74-2mm	EPA6010	3	mg/kg	Aluminum	17663.12	
D-401-2B-101317-4-6	SA_74-2mm	EPA6010	3	mg/kg	Antimony	8.04	
D-401-2B-101317-4-6	SA_74-2mm	EPA6010	3	mg/kg	Arsenic	15.07	
D-401-2B-101317-4-6	SA_74-2mm	EPA6010	3	mg/kg	Barium	149.43	
D-401-2B-101317-4-6	SA_74-2mm	EPA6010	3	mg/kg	Beryllium	0.57	crm rl
D-401-2B-101317-4-6	SA_74-2mm	EPA6010	3	mg/kg	Cadmium	12.83	
D-401-2B-101317-4-6	SA_74-2mm	EPA6010	3	mg/kg	Calcium	3053.20	
D-401-2B-101317-4-6	SA_74-2mm	EPA6010	3	mg/kg	Chromium	35.96	spk
D-401-2B-101317-4-6	SA_74-2mm	EPA6010	3	mg/kg	Cobalt	7.49	
D-401-2B-101317-4-6	SA_74-2mm	EPA6010	3	mg/kg	Copper	23.02	
D-401-2B-101317-4-6	SA_74-2mm	EPA6010	3	mg/kg	Iron	31674.77	
D-401-2B-101317-4-6	SA_74-2mm	EPA6010	3	mg/kg	Lead	72.12	
D-401-2B-101317-4-6	SA_74-2mm	EPA6010	3	mg/kg	Magnesium	3400.80	
D-401-2B-101317-4-6	SA_74-2mm	EPA6010	3	mg/kg	Manganese	750.71	
D-401-2B-101317-4-6	SA_74-2mm	EPA6010	3	mg/kg	Nickel	16.48	
D-401-2B-101317-4-6	SA_74-2mm	EPA6010	3	mg/kg	Phosphorus	1104.92	
D-401-2B-101317-4-6	SA_74-2mm	EPA6010	3	mg/kg	Potassium	1252.62	
D-401-2B-101317-4-6	SA_74-2mm	EPA6010	3	mg/kg	Selenium	1.38	blk rl
D-401-2B-101317-4-6	SA_74-2mm	EPA6010	3	mg/kg	Silver	0.2	MDL
D-401-2B-101317-4-6	SA_74-2mm	EPA6010	3	mg/kg	Sodium	226.66	
D-401-2B-101317-4-6	SA_74-2mm	EPA6010	3	mg/kg	Thallium	0.67	blk rl
D-401-2B-101317-4-6	SA_74-2mm	EPA6010	3	mg/kg	Vanadium	84.12	blk
D-401-2B-101317-4-6	SA_74-2mm	EPA6010	3	mg/kg	Zinc	334.94	
D-401-2D-101317-4-6	SA_75-2mm	EPA6010	3	mg/kg	Aluminum	17421.68	
D-401-2D-101317-4-6	SA_75-2mm	EPA6010	3	mg/kg	Antimony	23.95	
D-401-2D-101317-4-6	SA_75-2mm	EPA6010	3	mg/kg	Arsenic	54.20	
D-401-2D-101317-4-6	SA_75-2mm	EPA6010	3	mg/kg	Barium	177.19	



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-2D-101317-4-6	SA_75-2mm	EPA6010	3	mg/kg	Beryllium	0.55	crm rl
D-401-2D-101317-4-6	SA_75-2mm	EPA6010	3	mg/kg	Cadmium	12.58	
D-401-2D-101317-4-6	SA_75-2mm	EPA6010	3	mg/kg	Calcium	4291.79	
D-401-2D-101317-4-6	SA_75-2mm	EPA6010	3	mg/kg	Chromium	24.08	spk
D-401-2D-101317-4-6	SA_75-2mm	EPA6010	3	mg/kg	Cobalt	5.81	
D-401-2D-101317-4-6	SA_75-2mm	EPA6010	3	mg/kg	Copper	36.42	
D-401-2D-101317-4-6	SA_75-2mm	EPA6010	3	mg/kg	Iron	20942.04	
D-401-2D-101317-4-6	SA_75-2mm	EPA6010	3	mg/kg	Lead	564.07	
D-401-2D-101317-4-6	SA_75-2mm	EPA6010	3	mg/kg	Magnesium	2906.43	
D-401-2D-101317-4-6	SA_75-2mm	EPA6010	3	mg/kg	Manganese	710.37	
D-401-2D-101317-4-6	SA_75-2mm	EPA6010	3	mg/kg	Nickel	13.27	
D-401-2D-101317-4-6	SA_75-2mm	EPA6010	3	mg/kg	Phosphorus	1774.11	
D-401-2D-101317-4-6	SA_75-2mm	EPA6010	3	mg/kg	Potassium	1636.17	
D-401-2D-101317-4-6	SA_75-2mm	EPA6010	3	mg/kg	Selenium	3.73	blk rl
D-401-2D-101317-4-6	SA_75-2mm	EPA6010	3	mg/kg	Silver	0.2	MDL
D-401-2D-101317-4-6	SA_75-2mm	EPA6010	3	mg/kg	Sodium	250.24	
D-401-2D-101317-4-6	SA_75-2mm	EPA6010	3	mg/kg	Thallium	0.95	blk rl
D-401-2D-101317-4-6	SA_75-2mm	EPA6010	3	mg/kg	Vanadium	52.25	blk
D-401-2D-101317-4-6	SA_75-2mm	EPA6010	3	mg/kg	Zinc	580.27	
D-401-2B-101317-0-2	SA_76-2mm	EPA6010	3	mg/kg	Aluminum	16087.88	
D-401-2B-101317-0-2	SA_76-2mm	EPA6010	3	mg/kg	Antimony	15.74	
D-401-2B-101317-0-2	SA_76-2mm	EPA6010	3	mg/kg	Arsenic	34.84	
D-401-2B-101317-0-2	SA_76-2mm	EPA6010	3	mg/kg	Barium	130.36	
D-401-2B-101317-0-2	SA_76-2mm	EPA6010	3	mg/kg	Beryllium	0.51	crm rl
D-401-2B-101317-0-2	SA_76-2mm	EPA6010	3	mg/kg	Cadmium	8.28	
D-401-2B-101317-0-2	SA_76-2mm	EPA6010	3	mg/kg	Calcium	3754.55	
D-401-2B-101317-0-2	SA_76-2mm	EPA6010	3	mg/kg	Chromium	29.91	spk
D-401-2B-101317-0-2	SA_76-2mm	EPA6010	3	mg/kg	Cobalt	6.16	



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-2B-101317-0-2	SA_76-2mm	EPA6010	3	mg/kg	Copper	26.80	
D-401-2B-101317-0-2	SA_76-2mm	EPA6010	3	mg/kg	Iron	19917.84	
D-401-2B-101317-0-2	SA_76-2mm	EPA6010	3	mg/kg	Lead	329.02	
D-401-2B-101317-0-2	SA_76-2mm	EPA6010	3	mg/kg	Magnesium	2853.97	
D-401-2B-101317-0-2	SA_76-2mm	EPA6010	3	mg/kg	Manganese	582.16	
D-401-2B-101317-0-2	SA_76-2mm	EPA6010	3	mg/kg	Nickel	12.75	
D-401-2B-101317-0-2	SA_76-2mm	EPA6010	3	mg/kg	Phosphorus	1273.48	
D-401-2B-101317-0-2	SA_76-2mm	EPA6010	3	mg/kg	Potassium	1442.30	
D-401-2B-101317-0-2	SA_76-2mm	EPA6010	3	mg/kg	Selenium	3.77	blk rl
D-401-2B-101317-0-2	SA_76-2mm	EPA6010	3	mg/kg	Silver	0.2	MDL
D-401-2B-101317-0-2	SA_76-2mm	EPA6010	3	mg/kg	Sodium	251.94	
D-401-2B-101317-0-2	SA_76-2mm	EPA6010	3	mg/kg	Thallium	0.57	blk rl
D-401-2B-101317-0-2	SA_76-2mm	EPA6010	3	mg/kg	Vanadium	49.40	blk
D-401-2B-101317-0-2	SA_76-2mm	EPA6010	3	mg/kg	Zinc	425.66	
D-401-2D-101317-0-2	SA_77-2mm	EPA6010	3	mg/kg	Aluminum	12341.55	
D-401-2D-101317-0-2	SA_77-2mm	EPA6010	3	mg/kg	Antimony	32.08	
D-401-2D-101317-0-2	SA_77-2mm	EPA6010	3	mg/kg	Arsenic	35.63	
D-401-2D-101317-0-2	SA_77-2mm	EPA6010	3	mg/kg	Barium	116.31	
D-401-2D-101317-0-2	SA_77-2mm	EPA6010	3	mg/kg	Beryllium	0.39	crm rl
D-401-2D-101317-0-2	SA_77-2mm	EPA6010	3	mg/kg	Cadmium	11.40	
D-401-2D-101317-0-2	SA_77-2mm	EPA6010	3	mg/kg	Calcium	4674.18	
D-401-2D-101317-0-2	SA_77-2mm	EPA6010	3	mg/kg	Chromium	21.48	spk
D-401-2D-101317-0-2	SA_77-2mm	EPA6010	3	mg/kg	Cobalt	5.41	
D-401-2D-101317-0-2	SA_77-2mm	EPA6010	3	mg/kg	Copper	39.47	
D-401-2D-101317-0-2	SA_77-2mm	EPA6010	3	mg/kg	Iron	16952.40	
D-401-2D-101317-0-2	SA_77-2mm	EPA6010	3	mg/kg	Lead	842.63	
D-401-2D-101317-0-2	SA_77-2mm	EPA6010	3	mg/kg	Magnesium	2142.22	
D-401-2D-101317-0-2	SA_77-2mm	EPA6010	3	mg/kg	Manganese	504.67	



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-2D-101317-0-2	SA_77-2mm	EPA6010	3	mg/kg	Nickel	10.18	
D-401-2D-101317-0-2	SA_77-2mm	EPA6010	3	mg/kg	Phosphorus	1484.42	
D-401-2D-101317-0-2	SA_77-2mm	EPA6010	3	mg/kg	Potassium	1464.63	
D-401-2D-101317-0-2	SA_77-2mm	EPA6010	3	mg/kg	Selenium	3.13	blk rl
D-401-2D-101317-0-2	SA_77-2mm	EPA6010	3	mg/kg	Silver	0.2	MDL
D-401-2D-101317-0-2	SA_77-2mm	EPA6010	3	mg/kg	Sodium	209.68	
D-401-2D-101317-0-2	SA_77-2mm	EPA6010	3	mg/kg	Thallium	0.73	blk rl
D-401-2D-101317-0-2	SA_77-2mm	EPA6010	3	mg/kg	Vanadium	41.67	blk
D-401-2D-101317-0-2	SA_77-2mm	EPA6010	3	mg/kg	Zinc	541.46	
D-401-2C-101317-2-4	SA_78-2mm	EPA6010	3	mg/kg	Aluminum	18198.96	
D-401-2C-101317-2-4	SA_78-2mm	EPA6010	3	mg/kg	Antimony	17.86	
D-401-2C-101317-2-4	SA_78-2mm	EPA6010	3	mg/kg	Arsenic	69.63	
D-401-2C-101317-2-4	SA_78-2mm	EPA6010	3	mg/kg	Barium	164.11	
D-401-2C-101317-2-4	SA_78-2mm	EPA6010	3	mg/kg	Beryllium	0.64	crm rl
D-401-2C-101317-2-4	SA_78-2mm	EPA6010	3	mg/kg	Cadmium	19.54	
D-401-2C-101317-2-4	SA_78-2mm	EPA6010	3	mg/kg	Calcium	2745.11	
D-401-2C-101317-2-4	SA_78-2mm	EPA6010	3	mg/kg	Chromium	43.11	spk
D-401-2C-101317-2-4	SA_78-2mm	EPA6010	3	mg/kg	Cobalt	7.95	
D-401-2C-101317-2-4	SA_78-2mm	EPA6010	3	mg/kg	Copper	30.96	
D-401-2C-101317-2-4	SA_78-2mm	EPA6010	3	mg/kg	Iron	26455.26	
D-401-2C-101317-2-4	SA_78-2mm	EPA6010	3	mg/kg	Lead	335.22	
D-401-2C-101317-2-4	SA_78-2mm	EPA6010	3	mg/kg	Magnesium	2828.18	
D-401-2C-101317-2-4	SA_78-2mm	EPA6010	3	mg/kg	Manganese	919.97	
D-401-2C-101317-2-4	SA_78-2mm	EPA6010	3	mg/kg	Nickel	15.30	
D-401-2C-101317-2-4	SA_78-2mm	EPA6010	3	mg/kg	Phosphorus	1648.61	
D-401-2C-101317-2-4	SA_78-2mm	EPA6010	3	mg/kg	Potassium	1400.96	
D-401-2C-101317-2-4	SA_78-2mm	EPA6010	3	mg/kg	Selenium	2.88	blk rl
D-401-2C-101317-2-4	SA_78-2mm	EPA6010	3	mg/kg	Silver	0.2	MDL



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-2C-101317-2-4	SA_78-2mm	EPA6010	3	mg/kg	Sodium	230.94	
D-401-2C-101317-2-4	SA_78-2mm	EPA6010	3	mg/kg	Thallium	0.91	blk rl
D-401-2C-101317-2-4	SA_78-2mm	EPA6010	3	mg/kg	Vanadium	65.04	blk
D-401-2C-101317-2-4	SA_78-2mm	EPA6010	3	mg/kg	Zinc	367.30	
D-401-2A-101317-2-4	SA_79-2mm	EPA6010	3	mg/kg	Aluminum	17589.85	
D-401-2A-101317-2-4	SA_79-2mm	EPA6010	3	mg/kg	Antimony	7.62	
D-401-2A-101317-2-4	SA_79-2mm	EPA6010	3	mg/kg	Arsenic	19.13	
D-401-2A-101317-2-4	SA_79-2mm	EPA6010	3	mg/kg	Barium	176.55	
D-401-2A-101317-2-4	SA_79-2mm	EPA6010	3	mg/kg	Beryllium	0.58	crm rl
D-401-2A-101317-2-4	SA_79-2mm	EPA6010	3	mg/kg	Cadmium	9.69	
D-401-2A-101317-2-4	SA_79-2mm	EPA6010	3	mg/kg	Calcium	3010.12	
D-401-2A-101317-2-4	SA_79-2mm	EPA6010	3	mg/kg	Chromium	29.04	spk
D-401-2A-101317-2-4	SA_79-2mm	EPA6010	3	mg/kg	Cobalt	6.54	
D-401-2A-101317-2-4	SA_79-2mm	EPA6010	3	mg/kg	Copper	19.18	
D-401-2A-101317-2-4	SA_79-2mm	EPA6010	3	mg/kg	Iron	23068.80	
D-401-2A-101317-2-4	SA_79-2mm	EPA6010	3	mg/kg	Lead	71.53	
D-401-2A-101317-2-4	SA_79-2mm	EPA6010	3	mg/kg	Magnesium	2734.10	
D-401-2A-101317-2-4	SA_79-2mm	EPA6010	3	mg/kg	Manganese	691.87	
D-401-2A-101317-2-4	SA_79-2mm	EPA6010	3	mg/kg	Nickel	13.74	
D-401-2A-101317-2-4	SA_79-2mm	EPA6010	3	mg/kg	Phosphorus	1150.96	
D-401-2A-101317-2-4	SA_79-2mm	EPA6010	3	mg/kg	Potassium	1263.43	
D-401-2A-101317-2-4	SA_79-2mm	EPA6010	3	mg/kg	Selenium	2.34	blk rl
D-401-2A-101317-2-4	SA_79-2mm	EPA6010	3	mg/kg	Silver	0.2	MDL
D-401-2A-101317-2-4	SA_79-2mm	EPA6010	3	mg/kg	Sodium	226.53	
D-401-2A-101317-2-4	SA_79-2mm	EPA6010	3	mg/kg	Thallium	1.04	blk rl
D-401-2A-101317-2-4	SA_79-2mm	EPA6010	3	mg/kg	Vanadium	57.21	blk
D-401-2A-101317-2-4	SA_79-2mm	EPA6010	3	mg/kg	Zinc	754.26	
D-401-2B-101317-2-4	SA_80-2mm	EPA6010	3	mg/kg	Aluminum	11718.43	



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-2B-101317-2-4	SA_80-2mm	EPA6010	3	mg/kg	Antimony	36.45	
D-401-2B-101317-2-4	SA_80-2mm	EPA6010	3	mg/kg	Arsenic	26.02	
D-401-2B-101317-2-4	SA_80-2mm	EPA6010	3	mg/kg	Barium	102.75	
D-401-2B-101317-2-4	SA_80-2mm	EPA6010	3	mg/kg	Beryllium	0.35	crm rl
D-401-2B-101317-2-4	SA_80-2mm	EPA6010	3	mg/kg	Cadmium	7.79	
D-401-2B-101317-2-4	SA_80-2mm	EPA6010	3	mg/kg	Calcium	3810.80	
D-401-2B-101317-2-4	SA_80-2mm	EPA6010	3	mg/kg	Chromium	28.00	spk
D-401-2B-101317-2-4	SA_80-2mm	EPA6010	3	mg/kg	Cobalt	4.61	
D-401-2B-101317-2-4	SA_80-2mm	EPA6010	3	mg/kg	Copper	35.02	
D-401-2B-101317-2-4	SA_80-2mm	EPA6010	3	mg/kg	Iron	21660.36	
D-401-2B-101317-2-4	SA_80-2mm	EPA6010	3	mg/kg	Lead	869.03	
D-401-2B-101317-2-4	SA_80-2mm	EPA6010	3	mg/kg	Magnesium	2633.07	
D-401-2B-101317-2-4	SA_80-2mm	EPA6010	3	mg/kg	Manganese	346.84	
D-401-2B-101317-2-4	SA_80-2mm	EPA6010	3	mg/kg	Nickel	10.47	
D-401-2B-101317-2-4	SA_80-2mm	EPA6010	3	mg/kg	Phosphorus	948.94	
D-401-2B-101317-2-4	SA_80-2mm	EPA6010	3	mg/kg	Potassium	1269.40	
D-401-2B-101317-2-4	SA_80-2mm	EPA6010	3	mg/kg	Selenium	2.99	blk rl
D-401-2B-101317-2-4	SA_80-2mm	EPA6010	3	mg/kg	Silver	0.2	MDL
D-401-2B-101317-2-4	SA_80-2mm	EPA6010	3	mg/kg	Sodium	195.61	
D-401-2B-101317-2-4	SA_80-2mm	EPA6010	3	mg/kg	Thallium	1.09	blk rl
D-401-2B-101317-2-4	SA_80-2mm	EPA6010	3	mg/kg	Vanadium	56.15	blk
D-401-2B-101317-2-4	SA_80-2mm	EPA6010	3	mg/kg	Zinc	554.82	
D-258-3C-101317-4-6	SA_81-2mm	EPA6010	3	mg/kg	Aluminum	11960.73	
D-258-3C-101317-4-6	SA_81-2mm	EPA6010	3	mg/kg	Antimony	5.54	
D-258-3C-101317-4-6	SA_81-2mm	EPA6010	3	mg/kg	Arsenic	13.10	
D-258-3C-101317-4-6	SA_81-2mm	EPA6010	3	mg/kg	Barium	102.57	
D-258-3C-101317-4-6	SA_81-2mm	EPA6010	3	mg/kg	Beryllium	0.38	crm rl
D-258-3C-101317-4-6	SA_81-2mm	EPA6010	3	mg/kg	Cadmium	3.12	



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-258-3C-101317-4-6	SA_81-2mm	EPA6010	3	mg/kg	Calcium	4310.67	
D-258-3C-101317-4-6	SA_81-2mm	EPA6010	3	mg/kg	Chromium	16.90	spk
D-258-3C-101317-4-6	SA_81-2mm	EPA6010	3	mg/kg	Cobalt	4.07	
D-258-3C-101317-4-6	SA_81-2mm	EPA6010	3	mg/kg	Copper	15.87	
D-258-3C-101317-4-6	SA_81-2mm	EPA6010	3	mg/kg	Iron	12564.25	
D-258-3C-101317-4-6	SA_81-2mm	EPA6010	3	mg/kg	Lead	112.49	
D-258-3C-101317-4-6	SA_81-2mm	EPA6010	3	mg/kg	Magnesium	2392.36	
D-258-3C-101317-4-6	SA_81-2mm	EPA6010	3	mg/kg	Manganese	353.22	
D-258-3C-101317-4-6	SA_81-2mm	EPA6010	3	mg/kg	Nickel	8.34	
D-258-3C-101317-4-6	SA_81-2mm	EPA6010	3	mg/kg	Phosphorus	1493.78	
D-258-3C-101317-4-6	SA_81-2mm	EPA6010	3	mg/kg	Potassium	1208.53	
D-258-3C-101317-4-6	SA_81-2mm	EPA6010	3	mg/kg	Selenium	3.04	blk rl
D-258-3C-101317-4-6	SA_81-2mm	EPA6010	3	mg/kg	Silver	0.2	MDL
D-258-3C-101317-4-6	SA_81-2mm	EPA6010	3	mg/kg	Sodium	187.78	
D-258-3C-101317-4-6	SA_81-2mm	EPA6010	3	mg/kg	Thallium	0.42	blk rl
D-258-3C-101317-4-6	SA_81-2mm	EPA6010	3	mg/kg	Vanadium	36.57	blk
D-258-3C-101317-4-6	SA_81-2mm	EPA6010	3	mg/kg	Zinc	146.11	
D-258-3C-101317-2-4	SA_82-2mm	EPA6010	3	mg/kg	Aluminum	11160.18	
D-258-3C-101317-2-4	SA_82-2mm	EPA6010	3	mg/kg	Antimony	6.98	
D-258-3C-101317-2-4	SA_82-2mm	EPA6010	3	mg/kg	Arsenic	15.87	
D-258-3C-101317-2-4	SA_82-2mm	EPA6010	3	mg/kg	Barium	107.29	
D-258-3C-101317-2-4	SA_82-2mm	EPA6010	3	mg/kg	Beryllium	0.36	crm rl
D-258-3C-101317-2-4	SA_82-2mm	EPA6010	3	mg/kg	Cadmium	4.59	
D-258-3C-101317-2-4	SA_82-2mm	EPA6010	3	mg/kg	Calcium	3283.69	
D-258-3C-101317-2-4	SA_82-2mm	EPA6010	3	mg/kg	Chromium	18.39	spk
D-258-3C-101317-2-4	SA_82-2mm	EPA6010	3	mg/kg	Cobalt	4.05	
D-258-3C-101317-2-4	SA_82-2mm	EPA6010	3	mg/kg	Copper	17.94	
D-258-3C-101317-2-4	SA_82-2mm	EPA6010	3	mg/kg	Iron	12062.40	



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-258-3C-101317-2-4	SA_82-2mm	EPA6010	3	mg/kg	Lead	242.72	
D-258-3C-101317-2-4	SA_82-2mm	EPA6010	3	mg/kg	Magnesium	2354.49	
D-258-3C-101317-2-4	SA_82-2mm	EPA6010	3	mg/kg	Manganese	331.77	
D-258-3C-101317-2-4	SA_82-2mm	EPA6010	3	mg/kg	Nickel	8.21	
D-258-3C-101317-2-4	SA_82-2mm	EPA6010	3	mg/kg	Phosphorus	1161.43	
D-258-3C-101317-2-4	SA_82-2mm	EPA6010	3	mg/kg	Potassium	1082.72	
D-258-3C-101317-2-4	SA_82-2mm	EPA6010	3	mg/kg	Selenium	1.84	blk rl
D-258-3C-101317-2-4	SA_82-2mm	EPA6010	3	mg/kg	Silver	0.2	MDL
D-258-3C-101317-2-4	SA_82-2mm	EPA6010	3	mg/kg	Sodium	168.54	
D-258-3C-101317-2-4	SA_82-2mm	EPA6010	3	mg/kg	Thallium	0.38	blk rl
D-258-3C-101317-2-4	SA_82-2mm	EPA6010	3	mg/kg	Vanadium	28.76	blk
D-258-3C-101317-2-4	SA_82-2mm	EPA6010	3	mg/kg	Zinc	197.84	
D-258-3C-101317-0-2	SA_83-2mm	EPA6010	3	mg/kg	Aluminum	11055.09	
D-258-3C-101317-0-2	SA_83-2mm	EPA6010	3	mg/kg	Antimony	3.85	rl
D-258-3C-101317-0-2	SA_83-2mm	EPA6010	3	mg/kg	Arsenic	9.35	
D-258-3C-101317-0-2	SA_83-2mm	EPA6010	3	mg/kg	Barium	110.70	
D-258-3C-101317-0-2	SA_83-2mm	EPA6010	3	mg/kg	Beryllium	0.36	crm rl
D-258-3C-101317-0-2	SA_83-2mm	EPA6010	3	mg/kg	Cadmium	3.19	
D-258-3C-101317-0-2	SA_83-2mm	EPA6010	3	mg/kg	Calcium	4006.68	
D-258-3C-101317-0-2	SA_83-2mm	EPA6010	3	mg/kg	Chromium	16.66	spk
D-258-3C-101317-0-2	SA_83-2mm	EPA6010	3	mg/kg	Cobalt	4.08	
D-258-3C-101317-0-2	SA_83-2mm	EPA6010	3	mg/kg	Copper	14.38	
D-258-3C-101317-0-2	SA_83-2mm	EPA6010	3	mg/kg	Iron	13025.50	
D-258-3C-101317-0-2	SA_83-2mm	EPA6010	3	mg/kg	Lead	101.78	
D-258-3C-101317-0-2	SA_83-2mm	EPA6010	3	mg/kg	Magnesium	2515.36	
D-258-3C-101317-0-2	SA_83-2mm	EPA6010	3	mg/kg	Manganese	391.07	
D-258-3C-101317-0-2	SA_83-2mm	EPA6010	3	mg/kg	Nickel	9.75	
D-258-3C-101317-0-2	SA_83-2mm	EPA6010	3	mg/kg	Phosphorus	1145.59	



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-258-3C-101317-0-2	SA_83-2mm	EPA6010	3	mg/kg	Potassium	1071.04	
D-258-3C-101317-0-2	SA_83-2mm	EPA6010	3	mg/kg	Selenium	3.70	blk rl
D-258-3C-101317-0-2	SA_83-2mm	EPA6010	3	mg/kg	Silver	0.2	MDL
D-258-3C-101317-0-2	SA_83-2mm	EPA6010	3	mg/kg	Sodium	166.07	
D-258-3C-101317-0-2	SA_83-2mm	EPA6010	3	mg/kg	Thallium	0.51	blk rl
D-258-3C-101317-0-2	SA_83-2mm	EPA6010	3	mg/kg	Vanadium	28.49	blk
D-258-3C-101317-0-2	SA_83-2mm	EPA6010	3	mg/kg	Zinc	213.48	
D-401-2C-101317-0-2	SA_84-2mm	EPA6010	3	mg/kg	Aluminum	16062.79	
D-401-2C-101317-0-2	SA_84-2mm	EPA6010	3	mg/kg	Antimony	37.05	
D-401-2C-101317-0-2	SA_84-2mm	EPA6010	3	mg/kg	Arsenic	62.63	
D-401-2C-101317-0-2	SA_84-2mm	EPA6010	3	mg/kg	Barium	93.72	
D-401-2C-101317-0-2	SA_84-2mm	EPA6010	3	mg/kg	Beryllium	0.50	crm rl
D-401-2C-101317-0-2	SA_84-2mm	EPA6010	3	mg/kg	Cadmium	6.84	
D-401-2C-101317-0-2	SA_84-2mm	EPA6010	3	mg/kg	Calcium	3144.57	
D-401-2C-101317-0-2	SA_84-2mm	EPA6010	3	mg/kg	Chromium	28.46	spk
D-401-2C-101317-0-2	SA_84-2mm	EPA6010	3	mg/kg	Cobalt	6.21	
D-401-2C-101317-0-2	SA_84-2mm	EPA6010	3	mg/kg	Copper	38.32	
D-401-2C-101317-0-2	SA_84-2mm	EPA6010	3	mg/kg	Iron	24387.30	
D-401-2C-101317-0-2	SA_84-2mm	EPA6010	3	mg/kg	Lead	996.12	
D-401-2C-101317-0-2	SA_84-2mm	EPA6010	3	mg/kg	Magnesium	2832.23	
D-401-2C-101317-0-2	SA_84-2mm	EPA6010	3	mg/kg	Manganese	529.15	
D-401-2C-101317-0-2	SA_84-2mm	EPA6010	3	mg/kg	Nickel	12.99	
D-401-2C-101317-0-2	SA_84-2mm	EPA6010	3	mg/kg	Phosphorus	1765.53	
D-401-2C-101317-0-2	SA_84-2mm	EPA6010	3	mg/kg	Potassium	1218.55	
D-401-2C-101317-0-2	SA_84-2mm	EPA6010	3	mg/kg	Selenium	3.56	blk rl
D-401-2C-101317-0-2	SA_84-2mm	EPA6010	3	mg/kg	Silver	0.2	MDL
D-401-2C-101317-0-2	SA_84-2mm	EPA6010	3	mg/kg	Sodium	208.68	
D-401-2C-101317-0-2	SA_84-2mm	EPA6010	3	mg/kg	Thallium	0.62	blk rl



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-401-2C-101317-0-2	SA_84-2mm	EPA6010	3	mg/kg	Vanadium	60.89	blk
D-401-2C-101317-0-2	SA_84-2mm	EPA6010	3	mg/kg	Zinc	289.30	
D-401-2A-101317-0-2	SA_85-2mm	EPA6010	3	mg/kg	Aluminum	17521.46	
D-401-2A-101317-0-2	SA_85-2mm	EPA6010	3	mg/kg	Antimony	26.89	
D-401-2A-101317-0-2	SA_85-2mm	EPA6010	3	mg/kg	Arsenic	75.70	
D-401-2A-101317-0-2	SA_85-2mm	EPA6010	3	mg/kg	Barium	164.01	
D-401-2A-101317-0-2	SA_85-2mm	EPA6010	3	mg/kg	Beryllium	0.61	crm rl
D-401-2A-101317-0-2	SA_85-2mm	EPA6010	3	mg/kg	Cadmium	23.43	
D-401-2A-101317-0-2	SA_85-2mm	EPA6010	3	mg/kg	Calcium	3065.70	
D-401-2A-101317-0-2	SA_85-2mm	EPA6010	3	mg/kg	Chromium	23.33	spk
D-401-2A-101317-0-2	SA_85-2mm	EPA6010	3	mg/kg	Cobalt	7.96	
D-401-2A-101317-0-2	SA_85-2mm	EPA6010	3	mg/kg	Copper	48.46	
D-401-2A-101317-0-2	SA_85-2mm	EPA6010	3	mg/kg	Iron	20853.49	
D-401-2A-101317-0-2	SA_85-2mm	EPA6010	3	mg/kg	Lead	384.23	
D-401-2A-101317-0-2	SA_85-2mm	EPA6010	3	mg/kg	Magnesium	2548.96	
D-401-2A-101317-0-2	SA_85-2mm	EPA6010	3	mg/kg	Manganese	998.05	
D-401-2A-101317-0-2	SA_85-2mm	EPA6010	3	mg/kg	Nickel	12.75	
D-401-2A-101317-0-2	SA_85-2mm	EPA6010	3	mg/kg	Phosphorus	1619.57	
D-401-2A-101317-0-2	SA_85-2mm	EPA6010	3	mg/kg	Potassium	1416.39	
D-401-2A-101317-0-2	SA_85-2mm	EPA6010	3	mg/kg	Selenium	3.85	blk rl
D-401-2A-101317-0-2	SA_85-2mm	EPA6010	3	mg/kg	Silver	0.2	MDL
D-401-2A-101317-0-2	SA_85-2mm	EPA6010	3	mg/kg	Sodium	232.37	
D-401-2A-101317-0-2	SA_85-2mm	EPA6010	3	mg/kg	Thallium	1.12	blk rl
D-401-2A-101317-0-2	SA_85-2mm	EPA6010	3	mg/kg	Vanadium	50.56	blk
D-401-2A-101317-0-2	SA_85-2mm	EPA6010	3	mg/kg	Zinc	460.53	
D-258-3B-101317-2-4	SA_86-2mm	EPA6010	3	mg/kg	Aluminum	14324.80	
D-258-3B-101317-2-4	SA_86-2mm	EPA6010	3	mg/kg	Antimony	5.22	
D-258-3B-101317-2-4	SA_86-2mm	EPA6010	3	mg/kg	Arsenic	11.57	



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Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-258-3B-101317-2-4	SA_86-2mm	EPA6010	3	mg/kg	Barium	146.37	
D-258-3B-101317-2-4	SA_86-2mm	EPA6010	3	mg/kg	Beryllium	0.43	crm rl
D-258-3B-101317-2-4	SA_86-2mm	EPA6010	3	mg/kg	Cadmium	2.83	
D-258-3B-101317-2-4	SA_86-2mm	EPA6010	3	mg/kg	Calcium	3819.82	
D-258-3B-101317-2-4	SA_86-2mm	EPA6010	3	mg/kg	Chromium	13.41	spk
D-258-3B-101317-2-4	SA_86-2mm	EPA6010	3	mg/kg	Cobalt	4.16	
D-258-3B-101317-2-4	SA_86-2mm	EPA6010	3	mg/kg	Copper	13.61	
D-258-3B-101317-2-4	SA_86-2mm	EPA6010	3	mg/kg	Iron	12326.21	
D-258-3B-101317-2-4	SA_86-2mm	EPA6010	3	mg/kg	Lead	30.75	
D-258-3B-101317-2-4	SA_86-2mm	EPA6010	3	mg/kg	Magnesium	2454.43	
D-258-3B-101317-2-4	SA_86-2mm	EPA6010	3	mg/kg	Manganese	452.72	
D-258-3B-101317-2-4	SA_86-2mm	EPA6010	3	mg/kg	Nickel	9.03	
D-258-3B-101317-2-4	SA_86-2mm	EPA6010	3	mg/kg	Phosphorus	1181.65	
D-258-3B-101317-2-4	SA_86-2mm	EPA6010	3	mg/kg	Potassium	1117.54	
D-258-3B-101317-2-4	SA_86-2mm	EPA6010	3	mg/kg	Selenium	2.73	blk rl
D-258-3B-101317-2-4	SA_86-2mm	EPA6010	3	mg/kg	Silver	0.2	MDL
D-258-3B-101317-2-4	SA_86-2mm	EPA6010	3	mg/kg	Sodium	236.45	
D-258-3B-101317-2-4	SA_86-2mm	EPA6010	3	mg/kg	Thallium	0.57	blk rl
D-258-3B-101317-2-4	SA_86-2mm	EPA6010	3	mg/kg	Vanadium	28.88	blk
D-258-3B-101317-2-4	SA_86-2mm	EPA6010	3	mg/kg	Zinc	598.05	
D-258-3B-101317-0-2	SA_87-2mm	EPA6010	3	mg/kg	Aluminum	13852.65	
D-258-3B-101317-0-2	SA_87-2mm	EPA6010	3	mg/kg	Antimony	9.10	
D-258-3B-101317-0-2	SA_87-2mm	EPA6010	3	mg/kg	Arsenic	35.81	
D-258-3B-101317-0-2	SA_87-2mm	EPA6010	3	mg/kg	Barium	131.93	
D-258-3B-101317-0-2	SA_87-2mm	EPA6010	3	mg/kg	Beryllium	0.43	crm rl
D-258-3B-101317-0-2	SA_87-2mm	EPA6010	3	mg/kg	Cadmium	12.44	
D-258-3B-101317-0-2	SA_87-2mm	EPA6010	3	mg/kg	Calcium	3315.02	
D-258-3B-101317-0-2	SA_87-2mm	EPA6010	3	mg/kg	Chromium	12.35	spk



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Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-258-3B-101317-0-2	SA_87-2mm	EPA6010	3	mg/kg	Cobalt	4.83	
D-258-3B-101317-0-2	SA_87-2mm	EPA6010	3	mg/kg	Copper	25.01	
D-258-3B-101317-0-2	SA_87-2mm	EPA6010	3	mg/kg	Iron	11909.08	
D-258-3B-101317-0-2	SA_87-2mm	EPA6010	3	mg/kg	Lead	215.79	
D-258-3B-101317-0-2	SA_87-2mm	EPA6010	3	mg/kg	Magnesium	2421.44	
D-258-3B-101317-0-2	SA_87-2mm	EPA6010	3	mg/kg	Manganese	562.25	
D-258-3B-101317-0-2	SA_87-2mm	EPA6010	3	mg/kg	Nickel	9.65	
D-258-3B-101317-0-2	SA_87-2mm	EPA6010	3	mg/kg	Phosphorus	1347.39	
D-258-3B-101317-0-2	SA_87-2mm	EPA6010	3	mg/kg	Potassium	1136.51	
D-258-3B-101317-0-2	SA_87-2mm	EPA6010	3	mg/kg	Selenium	2.33	blk rl
D-258-3B-101317-0-2	SA_87-2mm	EPA6010	3	mg/kg	Silver	0.2	MDL
D-258-3B-101317-0-2	SA_87-2mm	EPA6010	3	mg/kg	Sodium	208.10	
D-258-3B-101317-0-2	SA_87-2mm	EPA6010	3	mg/kg	Thallium	0.48	blk rl
D-258-3B-101317-0-2	SA_87-2mm	EPA6010	3	mg/kg	Vanadium	26.71	blk
D-258-3B-101317-0-2	SA_87-2mm	EPA6010	3	mg/kg	Zinc	455.58	
D-258-3C-101317-10-12	SA_88-2mm	EPA6010	3	mg/kg	Aluminum	14514.74	
D-258-3C-101317-10-12	SA_88-2mm	EPA6010	3	mg/kg	Antimony	2.05	rl
D-258-3C-101317-10-12	SA_88-2mm	EPA6010	3	mg/kg	Arsenic	3.01	
D-258-3C-101317-10-12	SA_88-2mm	EPA6010	3	mg/kg	Barium	81.42	
D-258-3C-101317-10-12	SA_88-2mm	EPA6010	3	mg/kg	Beryllium	0.47	crm rl
D-258-3C-101317-10-12	SA_88-2mm	EPA6010	3	mg/kg	Cadmium	0.33	rl
D-258-3C-101317-10-12	SA_88-2mm	EPA6010	3	mg/kg	Calcium	2867.86	
D-258-3C-101317-10-12	SA_88-2mm	EPA6010	3	mg/kg	Chromium	16.59	spk
D-258-3C-101317-10-12	SA_88-2mm	EPA6010	3	mg/kg	Cobalt	4.46	
D-258-3C-101317-10-12	SA_88-2mm	EPA6010	3	mg/kg	Copper	10.29	
D-258-3C-101317-10-12	SA_88-2mm	EPA6010	3	mg/kg	Iron	13842.16	
D-258-3C-101317-10-12	SA_88-2mm	EPA6010	3	mg/kg	Lead	4.71	
D-258-3C-101317-10-12	SA_88-2mm	EPA6010	3	mg/kg	Magnesium	2383.40	



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-258-3C-101317-10-12	SA_88-2mm	EPA6010	3	mg/kg	Manganese	295.35	
D-258-3C-101317-10-12	SA_88-2mm	EPA6010	3	mg/kg	Nickel	9.03	
D-258-3C-101317-10-12	SA_88-2mm	EPA6010	3	mg/kg	Phosphorus	834.71	
D-258-3C-101317-10-12	SA_88-2mm	EPA6010	3	mg/kg	Potassium	1114.22	
D-258-3C-101317-10-12	SA_88-2mm	EPA6010	3	mg/kg	Selenium	2.09	blk rl
D-258-3C-101317-10-12	SA_88-2mm	EPA6010	3	mg/kg	Silver	0.2	MDL
D-258-3C-101317-10-12	SA_88-2mm	EPA6010	3	mg/kg	Sodium	235.83	
D-258-3C-101317-10-12	SA_88-2mm	EPA6010	3	mg/kg	Thallium	0.36	blk rl
D-258-3C-101317-10-12	SA_88-2mm	EPA6010	3	mg/kg	Vanadium	34.78	blk
D-258-3C-101317-10-12	SA_88-2mm	EPA6010	3	mg/kg	Zinc	35.33	
D-258-3C-101317-8-10	SA_89-2mm	EPA6010	3	mg/kg	Aluminum	14241.91	
D-258-3C-101317-8-10	SA_89-2mm	EPA6010	3	mg/kg	Antimony	1.97	rl
D-258-3C-101317-8-10	SA_89-2mm	EPA6010	3	mg/kg	Arsenic	2.89	
D-258-3C-101317-8-10	SA_89-2mm	EPA6010	3	mg/kg	Barium	86.05	
D-258-3C-101317-8-10	SA_89-2mm	EPA6010	3	mg/kg	Beryllium	0.43	crm rl
D-258-3C-101317-8-10	SA_89-2mm	EPA6010	3	mg/kg	Cadmium	0.40	rl
D-258-3C-101317-8-10	SA_89-2mm	EPA6010	3	mg/kg	Calcium	2753.04	
D-258-3C-101317-8-10	SA_89-2mm	EPA6010	3	mg/kg	Chromium	15.18	spk
D-258-3C-101317-8-10	SA_89-2mm	EPA6010	3	mg/kg	Cobalt	4.71	
D-258-3C-101317-8-10	SA_89-2mm	EPA6010	3	mg/kg	Copper	10.08	
D-258-3C-101317-8-10	SA_89-2mm	EPA6010	3	mg/kg	Iron	13826.87	
D-258-3C-101317-8-10	SA_89-2mm	EPA6010	3	mg/kg	Lead	6.77	
D-258-3C-101317-8-10	SA_89-2mm	EPA6010	3	mg/kg	Magnesium	2604.09	
D-258-3C-101317-8-10	SA_89-2mm	EPA6010	3	mg/kg	Manganese	307.19	
D-258-3C-101317-8-10	SA_89-2mm	EPA6010	3	mg/kg	Nickel	9.83	
D-258-3C-101317-8-10	SA_89-2mm	EPA6010	3	mg/kg	Phosphorus	914.47	
D-258-3C-101317-8-10	SA_89-2mm	EPA6010	3	mg/kg	Potassium	1031.40	
D-258-3C-101317-8-10	SA_89-2mm	EPA6010	3	mg/kg	Selenium	2.43	blk rl



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-258-3C-101317-8-10	SA_89-2mm	EPA6010	3	mg/kg	Silver	0.2	MDL
D-258-3C-101317-8-10	SA_89-2mm	EPA6010	3	mg/kg	Sodium	212.88	
D-258-3C-101317-8-10	SA_89-2mm	EPA6010	3	mg/kg	Thallium	0.54	blk rl
D-258-3C-101317-8-10	SA_89-2mm	EPA6010	3	mg/kg	Vanadium	31.67	blk
D-258-3C-101317-8-10	SA_89-2mm	EPA6010	3	mg/kg	Zinc	58.24	
D-258-3C-101317-6-8	SA_90-2mm	EPA6010	3	mg/kg	Aluminum	11924.25	
D-258-3C-101317-6-8	SA_90-2mm	EPA6010	3	mg/kg	Antimony	2.63	rl
D-258-3C-101317-6-8	SA_90-2mm	EPA6010	3	mg/kg	Arsenic	3.63	
D-258-3C-101317-6-8	SA_90-2mm	EPA6010	3	mg/kg	Barium	80.90	
D-258-3C-101317-6-8	SA_90-2mm	EPA6010	3	mg/kg	Beryllium	0.40	crm rl
D-258-3C-101317-6-8	SA_90-2mm	EPA6010	3	mg/kg	Cadmium	0.62	rl
D-258-3C-101317-6-8	SA_90-2mm	EPA6010	3	mg/kg	Calcium	2595.08	
D-258-3C-101317-6-8	SA_90-2mm	EPA6010	3	mg/kg	Chromium	13.86	spk
D-258-3C-101317-6-8	SA_90-2mm	EPA6010	3	mg/kg	Cobalt	4.23	
D-258-3C-101317-6-8	SA_90-2mm	EPA6010	3	mg/kg	Copper	9.97	
D-258-3C-101317-6-8	SA_90-2mm	EPA6010	3	mg/kg	Iron	13067.26	
D-258-3C-101317-6-8	SA_90-2mm	EPA6010	3	mg/kg	Lead	9.32	
D-258-3C-101317-6-8	SA_90-2mm	EPA6010	3	mg/kg	Magnesium	2298.76	
D-258-3C-101317-6-8	SA_90-2mm	EPA6010	3	mg/kg	Manganese	304.21	
D-258-3C-101317-6-8	SA_90-2mm	EPA6010	3	mg/kg	Nickel	8.47	
D-258-3C-101317-6-8	SA_90-2mm	EPA6010	3	mg/kg	Phosphorus	909.10	
D-258-3C-101317-6-8	SA_90-2mm	EPA6010	3	mg/kg	Potassium	1002.74	
D-258-3C-101317-6-8	SA_90-2mm	EPA6010	3	mg/kg	Selenium	3.13	blk rl
D-258-3C-101317-6-8	SA_90-2mm	EPA6010	3	mg/kg	Silver	0.2	MDL
D-258-3C-101317-6-8	SA_90-2mm	EPA6010	3	mg/kg	Sodium	175.33	
D-258-3C-101317-6-8	SA_90-2mm	EPA6010	3	mg/kg	Thallium	0.77	blk rl
D-258-3C-101317-6-8	SA_90-2mm	EPA6010	3	mg/kg	Vanadium	30.61	blk
D-258-3C-101317-6-8	SA_90-2mm	EPA6010	3	mg/kg	Zinc	98.97	



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Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-441-1D-101317-4-6	SA_91-2mm	EPA6010	3	mg/kg	Aluminum	25157.47	
D-441-1D-101317-4-6	SA_91-2mm	EPA6010	3	mg/kg	Antimony	6.89	
D-441-1D-101317-4-6	SA_91-2mm	EPA6010	3	mg/kg	Arsenic	7.37	
D-441-1D-101317-4-6	SA_91-2mm	EPA6010	3	mg/kg	Barium	254.65	
D-441-1D-101317-4-6	SA_91-2mm	EPA6010	3	mg/kg	Beryllium	0.76	crm rl
D-441-1D-101317-4-6	SA_91-2mm	EPA6010	3	mg/kg	Cadmium	0.99	rl
D-441-1D-101317-4-6	SA_91-2mm	EPA6010	3	mg/kg	Calcium	6556.09	
D-441-1D-101317-4-6	SA_91-2mm	EPA6010	3	mg/kg	Chromium	33.94	spk
D-441-1D-101317-4-6	SA_91-2mm	EPA6010	3	mg/kg	Cobalt	9.51	
D-441-1D-101317-4-6	SA_91-2mm	EPA6010	3	mg/kg	Copper	27.97	
D-441-1D-101317-4-6	SA_91-2mm	EPA6010	3	mg/kg	Iron	20667.50	
D-441-1D-101317-4-6	SA_91-2mm	EPA6010	3	mg/kg	Lead	19.21	
D-441-1D-101317-4-6	SA_91-2mm	EPA6010	3	mg/kg	Magnesium	4645.15	
D-441-1D-101317-4-6	SA_91-2mm	EPA6010	3	mg/kg	Manganese	755.51	
D-441-1D-101317-4-6	SA_91-2mm	EPA6010	3	mg/kg	Nickel	21.54	
D-441-1D-101317-4-6	SA_91-2mm	EPA6010	3	mg/kg	Phosphorus	1920.95	
D-441-1D-101317-4-6	SA_91-2mm	EPA6010	3	mg/kg	Potassium	2407.85	
D-441-1D-101317-4-6	SA_91-2mm	EPA6010	3	mg/kg	Selenium	4.10	blk rl
D-441-1D-101317-4-6	SA_91-2mm	EPA6010	3	mg/kg	Silver	0.2	MDL
D-441-1D-101317-4-6	SA_91-2mm	EPA6010	3	mg/kg	Sodium	459.62	
D-441-1D-101317-4-6	SA_91-2mm	EPA6010	3	mg/kg	Thallium	0.72	blk rl
D-441-1D-101317-4-6	SA_91-2mm	EPA6010	3	mg/kg	Vanadium	49.80	blk
D-441-1D-101317-4-6	SA_91-2mm	EPA6010	3	mg/kg	Zinc	92.62	
D-441-1D-101317-6-8	SA_92-2mm	EPA6010	3	mg/kg	Aluminum	22743.51	
D-441-1D-101317-6-8	SA_92-2mm	EPA6010	3	mg/kg	Antimony	3.69	rl
D-441-1D-101317-6-8	SA_92-2mm	EPA6010	3	mg/kg	Arsenic	5.82	
D-441-1D-101317-6-8	SA_92-2mm	EPA6010	3	mg/kg	Barium	233.16	
D-441-1D-101317-6-8	SA_92-2mm	EPA6010	3	mg/kg	Beryllium	0.71	crm rl



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-441-1D-101317-6-8	SA_92-2mm	EPA6010	3	mg/kg	Cadmium	0.58	rl
D-441-1D-101317-6-8	SA_92-2mm	EPA6010	3	mg/kg	Calcium	5376.60	
D-441-1D-101317-6-8	SA_92-2mm	EPA6010	3	mg/kg	Chromium	30.96	spk
D-441-1D-101317-6-8	SA_92-2mm	EPA6010	3	mg/kg	Cobalt	8.53	
D-441-1D-101317-6-8	SA_92-2mm	EPA6010	3	mg/kg	Copper	22.18	
D-441-1D-101317-6-8	SA_92-2mm	EPA6010	3	mg/kg	Iron	19151.60	
D-441-1D-101317-6-8	SA_92-2mm	EPA6010	3	mg/kg	Lead	9.85	
D-441-1D-101317-6-8	SA_92-2mm	EPA6010	3	mg/kg	Magnesium	4501.03	
D-441-1D-101317-6-8	SA_92-2mm	EPA6010	3	mg/kg	Manganese	674.07	
D-441-1D-101317-6-8	SA_92-2mm	EPA6010	3	mg/kg	Nickel	20.04	
D-441-1D-101317-6-8	SA_92-2mm	EPA6010	3	mg/kg	Phosphorus	1625.59	
D-441-1D-101317-6-8	SA_92-2mm	EPA6010	3	mg/kg	Potassium	2077.59	
D-441-1D-101317-6-8	SA_92-2mm	EPA6010	3	mg/kg	Selenium	3.10	blk rl
D-441-1D-101317-6-8	SA_92-2mm	EPA6010	3	mg/kg	Silver	0.2	MDL
D-441-1D-101317-6-8	SA_92-2mm	EPA6010	3	mg/kg	Sodium	388.36	
D-441-1D-101317-6-8	SA_92-2mm	EPA6010	3	mg/kg	Thallium	1.09	blk rl
D-441-1D-101317-6-8	SA_92-2mm	EPA6010	3	mg/kg	Vanadium	46.02	blk
D-441-1D-101317-6-8	SA_92-2mm	EPA6010	3	mg/kg	Zinc	70.59	
D-441-1D-101317-8-10	SA_93-2mm	EPA6010	3	mg/kg	Aluminum	25470.09	
D-441-1D-101317-8-10	SA_93-2mm	EPA6010	3	mg/kg	Antimony	1.89	rl
D-441-1D-101317-8-10	SA_93-2mm	EPA6010	3	mg/kg	Arsenic	6.23	
D-441-1D-101317-8-10	SA_93-2mm	EPA6010	3	mg/kg	Barium	247.24	
D-441-1D-101317-8-10	SA_93-2mm	EPA6010	3	mg/kg	Beryllium	0.78	crm rl
D-441-1D-101317-8-10	SA_93-2mm	EPA6010	3	mg/kg	Cadmium	0.57	rl
D-441-1D-101317-8-10	SA_93-2mm	EPA6010	3	mg/kg	Calcium	5845.24	
D-441-1D-101317-8-10	SA_93-2mm	EPA6010	3	mg/kg	Chromium	26.44	spk
D-441-1D-101317-8-10	SA_93-2mm	EPA6010	3	mg/kg	Cobalt	8.90	
D-441-1D-101317-8-10	SA_93-2mm	EPA6010	3	mg/kg	Copper	24.55	



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Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-441-1D-101317-8-10	SA_93-2mm	EPA6010	3	mg/kg	Iron	19414.58	
D-441-1D-101317-8-10	SA_93-2mm	EPA6010	3	mg/kg	Lead	9.46	
D-441-1D-101317-8-10	SA_93-2mm	EPA6010	3	mg/kg	Magnesium	4206.37	
D-441-1D-101317-8-10	SA_93-2mm	EPA6010	3	mg/kg	Manganese	683.26	
D-441-1D-101317-8-10	SA_93-2mm	EPA6010	3	mg/kg	Nickel	20.37	
D-441-1D-101317-8-10	SA_93-2mm	EPA6010	3	mg/kg	Phosphorus	1728.45	
D-441-1D-101317-8-10	SA_93-2mm	EPA6010	3	mg/kg	Potassium	2177.20	
D-441-1D-101317-8-10	SA_93-2mm	EPA6010	3	mg/kg	Selenium	1.56	blk rl
D-441-1D-101317-8-10	SA_93-2mm	EPA6010	3	mg/kg	Silver	0.2	MDL
D-441-1D-101317-8-10	SA_93-2mm	EPA6010	3	mg/kg	Sodium	479.99	
D-441-1D-101317-8-10	SA_93-2mm	EPA6010	3	mg/kg	Thallium	0.98	blk rl
D-441-1D-101317-8-10	SA_93-2mm	EPA6010	3	mg/kg	Vanadium	47.69	blk
D-441-1D-101317-8-10	SA_93-2mm	EPA6010	3	mg/kg	Zinc	72.26	
D-441-1D-101317-10-12	SA_94-2mm	EPA6010	3	mg/kg	Aluminum	24940.61	
D-441-1D-101317-10-12	SA_94-2mm	EPA6010	3	mg/kg	Antimony	2.46	rl
D-441-1D-101317-10-12	SA_94-2mm	EPA6010	3	mg/kg	Arsenic	5.90	
D-441-1D-101317-10-12	SA_94-2mm	EPA6010	3	mg/kg	Barium	223.85	
D-441-1D-101317-10-12	SA_94-2mm	EPA6010	3	mg/kg	Beryllium	0.75	crm rl
D-441-1D-101317-10-12	SA_94-2mm	EPA6010	3	mg/kg	Cadmium	0.49	rl
D-441-1D-101317-10-12	SA_94-2mm	EPA6010	3	mg/kg	Calcium	5307.39	
D-441-1D-101317-10-12	SA_94-2mm	EPA6010	3	mg/kg	Chromium	28.11	spk
D-441-1D-101317-10-12	SA_94-2mm	EPA6010	3	mg/kg	Cobalt	8.35	
D-441-1D-101317-10-12	SA_94-2mm	EPA6010	3	mg/kg	Copper	23.82	
D-441-1D-101317-10-12	SA_94-2mm	EPA6010	3	mg/kg	Iron	20676.88	
D-441-1D-101317-10-12	SA_94-2mm	EPA6010	3	mg/kg	Lead	8.78	
D-441-1D-101317-10-12	SA_94-2mm	EPA6010	3	mg/kg	Magnesium	4809.85	
D-441-1D-101317-10-12	SA_94-2mm	EPA6010	3	mg/kg	Manganese	594.65	
D-441-1D-101317-10-12	SA_94-2mm	EPA6010	3	mg/kg	Nickel	22.23	



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-441-1D-101317-10-12	SA_94-2mm	EPA6010	3	mg/kg	Phosphorus	1563.53	-
D-441-1D-101317-10-12	SA_94-2mm	EPA6010	3	mg/kg	Potassium	2300.22	
D-441-1D-101317-10-12	SA_94-2mm	EPA6010	3	mg/kg	Selenium	3.47	blk rl
D-441-1D-101317-10-12	SA_94-2mm	EPA6010	3	mg/kg	Silver	0.2	MDL
D-441-1D-101317-10-12	SA_94-2mm	EPA6010	3	mg/kg	Sodium	433.81	
D-441-1D-101317-10-12	SA_94-2mm	EPA6010	3	mg/kg	Thallium	0.74	blk rl
D-441-1D-101317-10-12	SA_94-2mm	EPA6010	3	mg/kg	Vanadium	48.76	blk
D-441-1D-101317-10-12	SA_94-2mm	EPA6010	3	mg/kg	Zinc	69.82	
D-441-1A-101317-0-2	SA_95-2mm	EPA6010	3	mg/kg	Aluminum	17351.37	
D-441-1A-101317-0-2	SA_95-2mm	EPA6010	3	mg/kg	Antimony	15.60	
D-441-1A-101317-0-2	SA_95-2mm	EPA6010	3	mg/kg	Arsenic	22.52	
D-441-1A-101317-0-2	SA_95-2mm	EPA6010	3	mg/kg	Barium	368.71	
D-441-1A-101317-0-2	SA_95-2mm	EPA6010	3	mg/kg	Beryllium	0.59	crm rl
D-441-1A-101317-0-2	SA_95-2mm	EPA6010	3	mg/kg	Cadmium	27.02	
D-441-1A-101317-0-2	SA_95-2mm	EPA6010	3	mg/kg	Calcium	16524.95	
D-441-1A-101317-0-2	SA_95-2mm	EPA6010	3	mg/kg	Chromium	29.18	spk
D-441-1A-101317-0-2	SA_95-2mm	EPA6010	3	mg/kg	Cobalt	8.81	
D-441-1A-101317-0-2	SA_95-2mm	EPA6010	3	mg/kg	Copper	85.68	
D-441-1A-101317-0-2	SA_95-2mm	EPA6010	3	mg/kg	Iron	18440.87	
D-441-1A-101317-0-2	SA_95-2mm	EPA6010	3	mg/kg	Lead	1023.32	
D-441-1A-101317-0-2	SA_95-2mm	EPA6010	3	mg/kg	Magnesium	4673.80	
D-441-1A-101317-0-2	SA_95-2mm	EPA6010	3	mg/kg	Manganese	1568.39	
D-441-1A-101317-0-2	SA_95-2mm	EPA6010	3	mg/kg	Nickel	19.13	
D-441-1A-101317-0-2	SA_95-2mm	EPA6010	3	mg/kg	Phosphorus	2605.36	
D-441-1A-101317-0-2	SA_95-2mm	EPA6010	3	mg/kg	Potassium	3419.14	
D-441-1A-101317-0-2	SA_95-2mm	EPA6010	3	mg/kg	Selenium	4.17	blk rl
D-441-1A-101317-0-2	SA_95-2mm	EPA6010	3	mg/kg	Silver	0.2	MDL
D-441-1A-101317-0-2	SA_95-2mm	EPA6010	3	mg/kg	Sodium	224.89	



Sample ID	Analysis ID	d_labresult.method_code	Datah	d_labresult.units	d_labresult.analyte	voluo	flogs
Sample ID D-441-1A-101317-0-2	Analysis ID SA_95-2mm	EPA6010	Batch 3	mg/kg	Thallium	value 1.37	flags blk rl
D-441-1A-101317-0-2	SA_95-2mm SA_95-2mm	EPA6010	3	mg/kg	Vanadium	44.48	blk
D-441-1A-101317-0-2			3		Zinc	978.37	UIK
	SA_95-2mm	EPA6010	3	mg/kg	Aluminum		
D-441-1A-101317-2-4	SA_96-2mm	EPA6010	3	mg/kg		22239.65	
D-441-1A-101317-2-4	SA_96-2mm	EPA6010		mg/kg	Antimony	7.07	
D-441-1A-101317-2-4	SA_96-2mm	EPA6010	3	mg/kg	Arsenic	19.80	
D-441-1A-101317-2-4	SA_96-2mm	EPA6010	3	mg/kg	Barium	282.28	
D-441-1A-101317-2-4	SA_96-2mm	EPA6010	3	mg/kg	Beryllium	0.78	crm rl
D-441-1A-101317-2-4	SA_96-2mm	EPA6010	3	mg/kg	Cadmium	4.46	
D-441-1A-101317-2-4	SA_96-2mm	EPA6010	3	mg/kg	Calcium	10305.34	
D-441-1A-101317-2-4	SA_96-2mm	EPA6010	3	mg/kg	Chromium	46.25	spk
D-441-1A-101317-2-4	SA_96-2mm	EPA6010	3	mg/kg	Cobalt	11.02	
D-441-1A-101317-2-4	SA_96-2mm	EPA6010	3	mg/kg	Copper	46.96	
D-441-1A-101317-2-4	SA_96-2mm	EPA6010	3	mg/kg	Iron	23409.42	
D-441-1A-101317-2-4	SA_96-2mm	EPA6010	3	mg/kg	Lead	104.99	
D-441-1A-101317-2-4	SA_96-2mm	EPA6010	3	mg/kg	Magnesium	8032.18	
D-441-1A-101317-2-4	SA_96-2mm	EPA6010	3	mg/kg	Manganese	1255.74	
D-441-1A-101317-2-4	SA_96-2mm	EPA6010	3	mg/kg	Nickel	26.92	
D-441-1A-101317-2-4	SA_96-2mm	EPA6010	3	mg/kg	Phosphorus	3093.37	
D-441-1A-101317-2-4	SA_96-2mm	EPA6010	3	mg/kg	Potassium	3430.52	
D-441-1A-101317-2-4	SA_96-2mm	EPA6010	3	mg/kg	Selenium	3.25	blk rl
D-441-1A-101317-2-4	SA_96-2mm	EPA6010	3	mg/kg	Silver	0.2	MDL
D-441-1A-101317-2-4	SA_96-2mm	EPA6010	3	mg/kg	Sodium	270.96	
D-441-1A-101317-2-4	SA_96-2mm	EPA6010	3	mg/kg	Thallium	0.61	blk rl
D-441-1A-101317-2-4	SA_96-2mm	EPA6010	3	mg/kg	Vanadium	55.45	blk
D-441-1A-101317-2-4	SA_96-2mm	EPA6010	3	mg/kg	Zinc	363.68	
D-441-1A-101317-4-6	SA_97-2mm	EPA6010	3	mg/kg	Aluminum	23487.74	
D-441-1A-101317-4-6	SA_97-2mm	EPA6010	3	mg/kg	Antimony	5.77	



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-441-1A-101317-4-6	SA_97-2mm	EPA6010	3	mg/kg	Arsenic	16.73	
D-441-1A-101317-4-6	SA_97-2mm	EPA6010	3	mg/kg	Barium	256.51	
D-441-1A-101317-4-6	SA_97-2mm	EPA6010	3	mg/kg	Beryllium	0.79	crm rl
D-441-1A-101317-4-6	SA_97-2mm	EPA6010	3	mg/kg	Cadmium	1.83	
D-441-1A-101317-4-6	SA_97-2mm	EPA6010	3	mg/kg	Calcium	7626.65	
D-441-1A-101317-4-6	SA_97-2mm	EPA6010	3	mg/kg	Chromium	46.71	spk
D-441-1A-101317-4-6	SA_97-2mm	EPA6010	3	mg/kg	Cobalt	11.57	
D-441-1A-101317-4-6	SA_97-2mm	EPA6010	3	mg/kg	Copper	36.98	
D-441-1A-101317-4-6	SA_97-2mm	EPA6010	3	mg/kg	Iron	26236.43	
D-441-1A-101317-4-6	SA_97-2mm	EPA6010	3	mg/kg	Lead	37.17	
D-441-1A-101317-4-6	SA_97-2mm	EPA6010	3	mg/kg	Magnesium	7601.82	
D-441-1A-101317-4-6	SA_97-2mm	EPA6010	3	mg/kg	Manganese	1042.03	
D-441-1A-101317-4-6	SA_97-2mm	EPA6010	3	mg/kg	Nickel	28.28	
D-441-1A-101317-4-6	SA_97-2mm	EPA6010	3	mg/kg	Phosphorus	3201.91	
D-441-1A-101317-4-6	SA_97-2mm	EPA6010	3	mg/kg	Potassium	3195.33	
D-441-1A-101317-4-6	SA_97-2mm	EPA6010	3	mg/kg	Selenium	2.69	blk rl
D-441-1A-101317-4-6	SA_97-2mm	EPA6010	3	mg/kg	Silver	0.2	MDL
D-441-1A-101317-4-6	SA_97-2mm	EPA6010	3	mg/kg	Sodium	287.20	
D-441-1A-101317-4-6	SA_97-2mm	EPA6010	3	mg/kg	Thallium	0.86	blk rl
D-441-1A-101317-4-6	SA_97-2mm	EPA6010	3	mg/kg	Vanadium	66.99	blk
D-441-1A-101317-4-6	SA_97-2mm	EPA6010	3	mg/kg	Zinc	172.61	
D-441-1A-101317-6-8	SA_98-2mm	EPA6010	3	mg/kg	Aluminum	21528.84	
D-441-1A-101317-6-8	SA_98-2mm	EPA6010	3	mg/kg	Antimony	5.15	
D-441-1A-101317-6-8	SA_98-2mm	EPA6010	3	mg/kg	Arsenic	15.73	
D-441-1A-101317-6-8	SA_98-2mm	EPA6010	3	mg/kg	Barium	215.70	
D-441-1A-101317-6-8	SA_98-2mm	EPA6010	3	mg/kg	Beryllium	0.72	crm rl
D-441-1A-101317-6-8	SA_98-2mm	EPA6010	3	mg/kg	Cadmium	1.48	
D-441-1A-101317-6-8	SA_98-2mm	EPA6010	3	mg/kg	Calcium	6345.82	



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-441-1A-101317-6-8	SA_98-2mm	EPA6010	3	mg/kg	Chromium	40.03	spk
D-441-1A-101317-6-8	SA_98-2mm	EPA6010	3	mg/kg	Cobalt	9.83	
D-441-1A-101317-6-8	SA_98-2mm	EPA6010	3	mg/kg	Copper	33.47	
D-441-1A-101317-6-8	SA_98-2mm	EPA6010	3	mg/kg	Iron	22908.20	
D-441-1A-101317-6-8	SA_98-2mm	EPA6010	3	mg/kg	Lead	29.56	
D-441-1A-101317-6-8	SA_98-2mm	EPA6010	3	mg/kg	Magnesium	5158.19	
D-441-1A-101317-6-8	SA_98-2mm	EPA6010	3	mg/kg	Manganese	872.87	
D-441-1A-101317-6-8	SA_98-2mm	EPA6010	3	mg/kg	Nickel	26.82	
D-441-1A-101317-6-8	SA_98-2mm	EPA6010	3	mg/kg	Phosphorus	2760.47	
D-441-1A-101317-6-8	SA_98-2mm	EPA6010	3	mg/kg	Potassium	2729.95	
D-441-1A-101317-6-8	SA_98-2mm	EPA6010	3	mg/kg	Selenium	3.02	blk rl
D-441-1A-101317-6-8	SA_98-2mm	EPA6010	3	mg/kg	Silver	0.2	MDL
D-441-1A-101317-6-8	SA_98-2mm	EPA6010	3	mg/kg	Sodium	214.82	
D-441-1A-101317-6-8	SA_98-2mm	EPA6010	3	mg/kg	Thallium	0.47	blk rl
D-441-1A-101317-6-8	SA_98-2mm	EPA6010	3	mg/kg	Vanadium	58.88	blk
D-441-1A-101317-6-8	SA_98-2mm	EPA6010	3	mg/kg	Zinc	138.45	
D-441-1A-101317-8-10	SA_99-2mm	EPA6010	3	mg/kg	Aluminum	24192.49	
D-441-1A-101317-8-10	SA_99-2mm	EPA6010	3	mg/kg	Antimony	4.29	rl
D-441-1A-101317-8-10	SA_99-2mm	EPA6010	3	mg/kg	Arsenic	16.71	
D-441-1A-101317-8-10	SA_99-2mm	EPA6010	3	mg/kg	Barium	208.53	
D-441-1A-101317-8-10	SA_99-2mm	EPA6010	3	mg/kg	Beryllium	0.78	crm rl
D-441-1A-101317-8-10	SA_99-2mm	EPA6010	3	mg/kg	Cadmium	0.80	rl
D-441-1A-101317-8-10	SA_99-2mm	EPA6010	3	mg/kg	Calcium	6670.38	
D-441-1A-101317-8-10	SA_99-2mm	EPA6010	3	mg/kg	Chromium	41.09	spk
D-441-1A-101317-8-10	SA_99-2mm	EPA6010	3	mg/kg	Cobalt	11.03	
D-441-1A-101317-8-10	SA_99-2mm	EPA6010	3	mg/kg	Copper	34.36	
D-441-1A-101317-8-10	SA_99-2mm	EPA6010	3	mg/kg	Iron	24790.04	
D-441-1A-101317-8-10	SA_99-2mm	EPA6010	3	mg/kg	Lead	13.83	



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-441-1A-101317-8-10	SA_99-2mm	EPA6010	3	mg/kg	Magnesium	5315.97	
D-441-1A-101317-8-10	SA_99-2mm	EPA6010	3	mg/kg	Manganese	825.66	
D-441-1A-101317-8-10	SA_99-2mm	EPA6010	3	mg/kg	Nickel	27.09	
D-441-1A-101317-8-10	SA_99-2mm	EPA6010	3	mg/kg	Phosphorus	2624.57	
D-441-1A-101317-8-10	SA_99-2mm	EPA6010	3	mg/kg	Potassium	3212.33	
D-441-1A-101317-8-10	SA_99-2mm	EPA6010	3	mg/kg	Selenium	3.29	blk rl
D-441-1A-101317-8-10	SA_99-2mm	EPA6010	3	mg/kg	Silver	0.2	MDL
D-441-1A-101317-8-10	SA_99-2mm	EPA6010	3	mg/kg	Sodium	260.57	
D-441-1A-101317-8-10	SA_99-2mm	EPA6010	3	mg/kg	Thallium	0.85	blk rl
D-441-1A-101317-8-10	SA_99-2mm	EPA6010	3	mg/kg	Vanadium	65.99	blk
D-441-1A-101317-8-10	SA_99-2mm	EPA6010	3	mg/kg	Zinc	98.55	
D-441-1A-101317-10-12	SA_100-2mm	EPA6010	3	mg/kg	Aluminum	23043.26	
D-441-1A-101317-10-12	SA_100-2mm	EPA6010	3	mg/kg	Antimony	3.64	rl
D-441-1A-101317-10-12	SA_100-2mm	EPA6010	3	mg/kg	Arsenic	12.69	
D-441-1A-101317-10-12	SA_100-2mm	EPA6010	3	mg/kg	Barium	159.95	
D-441-1A-101317-10-12	SA_100-2mm	EPA6010	3	mg/kg	Beryllium	0.76	crm rl
D-441-1A-101317-10-12	SA_100-2mm	EPA6010	3	mg/kg	Cadmium	0.63	rl
D-441-1A-101317-10-12	SA_100-2mm	EPA6010	3	mg/kg	Calcium	5117.56	
D-441-1A-101317-10-12	SA_100-2mm	EPA6010	3	mg/kg	Chromium	34.87	spk
D-441-1A-101317-10-12	SA_100-2mm	EPA6010	3	mg/kg	Cobalt	10.82	
D-441-1A-101317-10-12	SA_100-2mm	EPA6010	3	mg/kg	Copper	30.73	
D-441-1A-101317-10-12	SA_100-2mm	EPA6010	3	mg/kg	Iron	24846.99	
D-441-1A-101317-10-12	SA_100-2mm	EPA6010	3	mg/kg	Lead	13.06	
D-441-1A-101317-10-12	SA_100-2mm	EPA6010	3	mg/kg	Magnesium	6044.27	
D-441-1A-101317-10-12	SA_100-2mm	EPA6010	3	mg/kg	Manganese	590.15	
D-441-1A-101317-10-12	SA_100-2mm	EPA6010	3	mg/kg	Nickel	25.12	
D-441-1A-101317-10-12	SA_100-2mm	EPA6010	3	mg/kg	Phosphorus	1885.81	
D-441-1A-101317-10-12	SA_100-2mm	EPA6010	3	mg/kg	Potassium	3248.32	



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
D-441-1A-101317-10-12	SA_100-2mm	EPA6010	3	mg/kg	Selenium	3.80	blk rl
D-441-1A-101317-10-12	SA_100-2mm	EPA6010	3	mg/kg	Silver	0.2	MDL
D-441-1A-101317-10-12	SA_100-2mm	EPA6010	3	mg/kg	Sodium	245.09	
D-441-1A-101317-10-12	SA_100-2mm	EPA6010	3	mg/kg	Thallium	0.94	blk rl
D-441-1A-101317-10-12	SA_100-2mm	EPA6010	3	mg/kg	Vanadium	65.28	blk
D-441-1A-101317-10-12	SA_100-2mm	EPA6010	3	mg/kg	Zinc	78.37	
D-401-1C-100417-0-6	SA_101-core	D2166_MOD	1	%	WatStorCap	46.77	
D-401-2B-100517-0-6	SA_102-core	D2166_MOD	1	%	WatStorCap	29.70	
D-401-2C-100517-0-6	SA_103-core	D2166_MOD	1	%	WatStorCap	30.21	
D-258-3D-100717-0-6	SA_104-core	D2166_MOD	1	%	WatStorCap	38.88	
D-441-1A-100617-0-6	SA_105-core	D2166_MOD	1	%	WatStorCap	47.97	
D-258-3C-100717-0-6	SA_106-core	D2166_MOD	1	%	WatStorCap	51.29	
D-401-2A-100517-0-6	SA_107-core	D2166_MOD	1	%	WatStorCap	36.22	
D-401-2D-100517-0-6	SA_108-core	D2166_MOD	1	%	WatStorCap	49.24	
D-258-3A-100717-0-6	SA_109-core	D2166_MOD	1	%	WatStorCap	58.36	
D-441-1D-100617-0-6	SA_110-core	D2166_MOD	1	%	WatStorCap	52.21	
D-441-1B-100617-0-6	SA_111-core	D2166_MOD	1	%	WatStorCap	31.55	
D-401-1A-100417-0-6	SA_112-core	D2166_MOD	1	%	WatStorCap	46.81	
D-441-1C-100617-0-6	SA_113-core	D2166_MOD	1	%	WatStorCap	41.84	
D-401-1D-100417-0-6	SA_114-core	D2166_MOD	1	%	WatStorCap	33.59	
D-401-1B-100417-0-6	SA_115-core	D2166_MOD	1	%	WatStorCap	46.43	
D-258-3B-100717-0-6	SA_116-core	D2166_MOD	1	%	WatStorCap	36.40	



SWEL – Soil Water Environ	mentai Lab	Detailed	Incremen	ital Composite Samp	<u>le Results</u>		
Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC-401-1A-101017	SA_117-bulk	SM2510B	1	mS/m	Conductivity	7.70	ht
IC-401-1A-101017	SA_117-bulk	рН	1		рН	4.60	ht
IC-401-1A-101017	SA_117-150um	EPA6010_MEHLICH3	8	mg/kg	Lead	285.60	
IC-401-1A-101017	SA_117-150um	EPA6010_MEHLICH3	8	mg/kg	Phosphorus	106.20	
IC-401-1A-101017	SA_117-150um	EPA6010_9200Bio2.5	1	mg/kg	Arsenic	3.88	
IC-401-1A-101017	SA_117-150um	EPA6010_9200Bio2.5	1	mg/kg	Lead	429.19	
IC-401-1A-101017	SA_117-150um	EPA6010_9200Bio1.5	1	mg/kg	Arsenic	12.01	
IC-401-1A-101017	SA_117-150um	EPA6010_9200Bio1.5	1	mg/kg	Lead	838.34	
IC-401-1A-101017	SA_117-150um	EPA6010	4	mg/kg	Aluminum	21678.10	ht
IC-401-1A-101017	SA_117-2mm	EPA6010	5	mg/kg	Aluminum	11970.35	crm ht
IC-401-1A-101017	SA_117-150um	EPA6010	4	mg/kg	Antimony	31.44	ht
IC-401-1A-101017	SA_117-2mm	EPA6010	5	mg/kg	Antimony	15.03	ht
IC-401-1A-101017	SA_117-150um	EPA6010	4	mg/kg	Arsenic	68.39	ht
IC-401-1A-101017	SA_117-2mm	EPA6010	5	mg/kg	Arsenic	28.08	ht
IC-401-1A-101017	SA_117-150um	EPA6010	4	mg/kg	Barium	204.02	ht
IC-401-1A-101017	SA_117-2mm	EPA6010	5	mg/kg	Barium	77.51	ht
							MDL
IC-401-1A-101017	SA_117-2mm	EPA6010	5	mg/kg	Beryllium	0.00	crm ht
IC-401-1A-101017	SA 117-150um	EPA6010	4	ma/ka	Beryllium	0.82	crm rl ht
IC-401-1A-101017	SA_117-150um	EPA6010 EPA6010	4	mg/kg mg/kg	Cadmium	14.57	ht
IC-401-1A-101017	SA_117-130um SA_117-2mm	EPA6010 EPA6010	5	mg/kg	Cadmium	5.37	ht
	_	EPA6010 EPA6010			Calcium	4014.25	
IC-401-1A-101017 IC-401-1A-101017	SA_117-150um SA_117-2mm	EPA6010 EPA6010	5	mg/kg	Calcium	2860.44	ht ht
	_		4	mg/kg		t	
IC-401-1A-101017	SA_117-150um	EPA6010	4	mg/kg	Chromium	54.30	ht dup
IC-401-1A-101017	SA_117-2mm	EPA6010	5	mg/kg	Chromium	29.92	ht
IC-401-1A-101017	SA 117-150um	EPA6010	4	mg/kg	Cobalt	8.75	ht
IC-401-1A-101017	SA_117-2mm	EPA6010	5	mg/kg	Cobalt	5.37	ht
IC-401-1A-101017	SA_117-150um	EPA6010	4	mg/kg	Copper	64.70	ht
IC-401-1A-101017	SA_117-2mm	EPA6010	5	mg/kg	Copper	22.69	ht



SWEL – Soil Water Environ	nmental Lab	Detailed 1	Incremen	tal Composite Samp	mple Results			
Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags	
IC-401-1A-101017	SA_117-150um	EPA6010	4	mg/kg	Iron	39862.30	ht	
IC-401-1A-101017	SA_117-2mm	EPA6010	5	mg/kg	Iron	23470.95	ht	
IC-401-1A-101017	SA_117-150um	EPA6010	4	mg/kg	Lead	1127.06	ht	
IC-401-1A-101017	SA_117-2mm	EPA6010	5	mg/kg	Lead	411.19	ht	
							crm	
IC-401-1A-101017	SA_117-2mm	EPA6010	5	mg/kg	Magnesium	2881.23	ht	
IC-401-1A-101017	SA_117-150um	EPA6010	4	mg/kg	Magnesium	2790.15	ht	
IC-401-1A-101017	SA_117-150um	EPA6010	4	mg/kg	Manganese	748.38	ht	
IC-401-1A-101017	SA_117-2mm	EPA6010	5	mg/kg	Manganese	375.62	ht	
IC-401-1A-101017	SA_117-150um	EPA6010	4	mg/kg	Nickel	19.36	ht	
IC-401-1A-101017	SA_117-2mm	EPA6010	5	mg/kg	Nickel	11.34	ht	
IC-401-1A-101017	SA_117-150um	EPA6010	4	mg/kg	Phosphorus	1849.81	ht	
IC-401-1A-101017	SA_117-2mm	EPA6010	5	mg/kg	Phosphorus	893.23	ht	
IC-401-1A-101017	SA_117-150um	EPA6010	4	mg/kg	Potassium	1977.54	crm ht	
IC-401-1A-101017	SA_117-2mm	EPA6010	5	mg/kg	Potassium	1170.75	ht	
IC-401-1A-101017	SA_117-2mm	EPA6010	5	mg/kg	Selenium	0.70	ht	
IC-401-1A-101017	SA_117-150um	EPA6010	4	mg/kg	Selenium	3.53	rl ht	
							MDL	
IC-401-1A-101017	SA_117-150um	EPA6010	4	mg/kg	Silver	0.20	ht	
70 101 11 101017	~	77.4.404.0	_		a.,	0.00	MDL	
IC-401-1A-101017	SA_117-2mm	EPA6010	5	mg/kg	Silver	0.20	ht	
IC-401-1A-101017	SA_117-150um	EPA6010	4	mg/kg	Sodium	435.07	ht	
IC-401-1A-101017	SA_117-2mm	EPA6010	5	mg/kg	Sodium	154.66	ht	
IC-401-1A-101017	SA 117-150um	EPA6010	1	m a/Ira	Thallium	1.13	blk rl ht	
	_		4	mg/kg	Thallium			
IC-401-1A-101017	SA_117-150	EPA6010	5	mg/kg		0.27	rl ht	
IC-401-1A-101017	SA_117-150um	EPA6010	4	mg/kg	Vanadium	106.59	ht	
IC-401-1A-101017	SA_117-150	EPA 6010	5	mg/kg	Vanadium	63.96	ht	
IC-401-1A-101017	SA_117-150um	EPA 6010	4	mg/kg	Zinc	549.74	ht	
IC-401-1A-101017	SA_117-2mm	EPA6010	5	mg/kg	Zinc	221.14	ht	
IC-401-1A-101017	SA_117-2mm	EPA_300.0	1	mg/kg	Chloride	18.64	ht	



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC-401-1A-101017	SA_117-2mm	EPA_300.0	1	mg/kg	Sulfate	100.17	ht
IC-401-1A-101017	SA_117-bulk	D422	1	%	Fines	3.50	
IC-401-1A-101017	SA_117-bulk	D422	1	%	Gravel	14.82	
IC-401-1A-101017	SA_117-bulk	D422	1	%	Sand	83.60	
IC-401-1A-101017	SA_117-bulk	D422	1	%	Silt	12.90	
IC-401-1A-101017	SA_117-150um	Bioaccess2.5pH	1	%	Arsenic	5.67	
IC-401-1A-101017	SA_117-150um	Bioaccess2.5pH	1	%	Lead	38.08	
IC-401-1A-101017	SA_117-150um	Bioaccess1.5pH	1	%	Arsenic	17.56	
IC-401-1A-101017	SA_117-150um	Bioaccess1.5pH	1	%	Lead	74.38	
IC-401-1A-101017	SA_117-2mm	NELSON82	2	%	Carbon_total	2.80	ht
IC-401-1A-101017	SA_117-2mm	BREMNER82	2	%	Nitrogen_total	0.12	ht
IC-401-1B-101017	SA_118-bulk	SM2510B	1	mS/m	Conductivity	4.52	ht
IC-401-1B-101017	SA_118-bulk	рН	1		pН	4.94	ht
IC-401-1B-101017	SA_118-150um	EPA6010_MEHLICH3	8	mg/kg	Lead	229.35	
IC-401-1B-101017	SA_118-150um	EPA6010_MEHLICH3	8	mg/kg	Phosphorus	64.23	
IC-401-1B-101017	SA_118-150um	EPA6010_9200Bio2.5	1	mg/kg	Arsenic	5.13	
IC-401-1B-101017	SA_118-150um	EPA6010_9200Bio2.5	1	mg/kg	Lead	373.87	
IC-401-1B-101017	SA_118-150um	EPA6010_9200Bio1.5	1	mg/kg	Arsenic	14.62	
IC-401-1B-101017	SA_118-150um	EPA6010_9200Bio1.5	1	mg/kg	Lead	805.47	
IC-401-1B-101017	SA_118-150um	EPA6010	4	mg/kg	Aluminum	26138.48	ht
IC-401-1B-101017	SA_118-2mm	EPA6010	5	mg/kg	Aluminum	15205.98	crm ht
IC-401-1B-101017	SA_118-150um	EPA6010	4	mg/kg	Antimony	34.64	ht
IC-401-1B-101017	SA_118-2mm	EPA6010	5	mg/kg	Antimony	20.56	ht
IC-401-1B-101017	SA_118-150um	EPA6010	4	mg/kg	Arsenic	87.51	ht
IC-401-1B-101017	SA_118-2mm	EPA6010	5	mg/kg	Arsenic	37.64	ht
IC-401-1B-101017	SA_118-150um	EPA6010	4	mg/kg	Barium	265.03	ht
IC-401-1B-101017	SA_118-2mm	EPA6010	5	mg/kg	Barium	116.60	ht
							MDL
IC-401-1B-101017	SA_118-2mm	EPA6010	5	mg/kg	Beryllium	0.00	crm ht
IC-401-1B-101017	SA_118-150um	EPA6010	4	mg/kg	Beryllium	0.94	crm rl ht



SWEL – Soil Water Environ	mental Lab	Detailed 1	Incremen	ntal Composite Samp			
Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC-401-1B-101017	SA_118-150um	EPA6010	4	mg/kg	Cadmium	21.06	ht
IC-401-1B-101017	SA_118-2mm	EPA6010	5	mg/kg	Cadmium	9.07	ht
IC-401-1B-101017	SA_118-150um	EPA6010	4	mg/kg	Calcium	4162.71	ht
IC-401-1B-101017	SA_118-2mm	EPA6010	5	mg/kg	Calcium	3093.26	ht
IC-401-1B-101017	SA_118-150um	EPA6010	4	mg/kg	Chromium	39.76	ht
		TD 4 4040	_		~ ·	20.12	dup
IC-401-1B-101017	SA_118-2mm	EPA6010	5	mg/kg	Chromium	30.12	ht
IC-401-1B-101017	SA_118-150um	EPA6010	4	mg/kg	Cobalt	9.61	ht
IC-401-1B-101017	SA_118-2mm	EPA6010	5	mg/kg	Cobalt	6.18	ht
IC-401-1B-101017	SA_118-150um	EPA6010	4	mg/kg	Copper	75.17	ht
IC-401-1B-101017	SA_118-2mm	EPA6010	5	mg/kg	Copper	30.40	ht
IC-401-1B-101017	SA_118-150um	EPA6010	4	mg/kg	Iron	31398.11	ht
IC-401-1B-101017	SA_118-2mm	EPA6010	5	mg/kg	Iron	23925.04	ht
IC-401-1B-101017	SA_118-150um	EPA6010	4	mg/kg	Lead	1232.63	ht
IC-401-1B-101017	SA_118-2mm	EPA6010	5	mg/kg	Lead	516.32	ht
IC-401-1B-101017	SA_118-150um	EPA6010	4	mg/kg	Magnesium	3249.94	ht
							crm
IC-401-1B-101017	SA_118-2mm	EPA6010	5	mg/kg	Magnesium	3092.10	ht
IC-401-1B-101017	SA_118-150um	EPA6010	4	mg/kg	Manganese	1090.24	ht
IC-401-1B-101017	SA_118-2mm	EPA6010	5	mg/kg	Manganese	536.67	ht
IC-401-1B-101017	SA_118-150um	EPA6010	4	mg/kg	Nickel	18.05	ht
IC-401-1B-101017	SA_118-2mm	EPA6010	5	mg/kg	Nickel	12.87	ht
IC-401-1B-101017	SA_118-150um	EPA6010	4	mg/kg	Phosphorus	2224.69	ht
IC-401-1B-101017	SA_118-2mm	EPA6010	5	mg/kg	Phosphorus	1155.53	ht
IC-401-1B-101017	SA_118-150um	EPA6010	4	mg/kg	Potassium	2003.30	crm ht
IC-401-1B-101017	SA_118-2mm	EPA6010	5	mg/kg	Potassium	1318.40	ht
IC-401-1B-101017	SA_118-2mm	EPA6010	5	mg/kg	Selenium	0.70	ht
IC-401-1B-101017	SA_118-150um	EPA6010	4	mg/kg	Selenium	3.68	rl ht
							MDL
IC-401-1B-101017	SA_118-150um	EPA6010	4	mg/kg	Silver	0.20	ht



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
							MDL
IC-401-1B-101017	SA_118-2mm	EPA6010	5	mg/kg	Silver	0.20	ht
IC-401-1B-101017	SA_118-150um	EPA6010	4	mg/kg	Sodium	485.37	ht
IC-401-1B-101017	SA_118-2mm	EPA6010	5	mg/kg	Sodium	179.65	ht
IC-401-1B-101017	SA_118-150um	EPA6010	4	ma/ka	Thallium	0.77	blk rl ht
IC-401-1B-101017		EPA6010 EPA6010	5	mg/kg	Thallium	0.77	
	SA_118-2mm			mg/kg		1	rl ht
IC-401-1B-101017	SA_118-150um	EPA6010	4	mg/kg	Vanadium	79.06	ht
IC-401-1B-101017	SA_118-2mm	EPA6010	5	mg/kg	Vanadium	57.86	ht
IC-401-1B-101017	SA_118-150um	EPA6010	4	mg/kg	Zinc	744.77	ht
IC-401-1B-101017	SA_118-2mm	EPA6010	5	mg/kg	Zinc	339.18	ht
IC-401-1B-101017	SA_118-2mm	EPA_300.0	1	mg/kg	Chloride	16.91	ht
IC-401-1B-101017	SA_118-2mm	EPA_300.0	1	mg/kg	Sulfate	60.89	ht
IC-401-1B-101017	SA_118-bulk	D422	1	%	Fines	3.57	
IC-401-1B-101017	SA_118-bulk	D422	1	%	Gravel	31.49	
IC-401-1B-101017	SA_118-bulk	D422	1	%	Sand	79.40	
IC-401-1B-101017	SA_118-bulk	D422	1	%	Silt	17.03	
IC-401-1B-101017	SA_118-150um	Bioaccess2.5pH	1	%	Arsenic	5.87	
IC-401-1B-101017	SA_118-150um	Bioaccess2.5pH	1	%	Lead	30.33	
IC-401-1B-101017	SA_118-150um	Bioaccess1.5pH	1	%	Arsenic	16.71	
IC-401-1B-101017	SA_118-150um	Bioaccess1.5pH	1	%	Lead	65.35	
IC-401-1B-101017	SA_118-2mm	NELSON82	2	%	Carbon_total	5.06	ht
IC-401-1B-101017	SA_118-2mm	BREMNER82	2	%	Nitrogen_total	0.22	ht
IC-401-1C-101117	SA_119-bulk	SM2510B	1	mS/m	Conductivity	5.63	ht
IC-401-1C-101117	SA_119-bulk	рН	1		рН	4.78	ht
IC-401-1C-101117	SA_119-150um	EPA6010_MEHLICH3	8	mg/kg	Lead	309.99	
IC-401-1C-101117	SA_119-150um	EPA6010_MEHLICH3	8	mg/kg	Phosphorus	77.22	
IC-401-1C-101117	SA_119-150um	EPA6010_9200Bio2.5	1	mg/kg	Arsenic	5.34	
IC-401-1C-101117	SA_119-150um	EPA6010_9200Bio2.5	1	mg/kg	Lead	503.36	
IC-401-1C-101117	SA_119-150um	EPA6010_9200Bio1.5	1	mg/kg	Arsenic	14.02	
IC-401-1C-101117	SA_119-150um	EPA6010_9200Bio1.5	1	mg/kg	Lead	1035.84	



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC-401-1C-101117	SA_119-150um	EPA6010	4	mg/kg	Aluminum	23926.00	ht
IC-401-1C-101117	SA_119-2mm	EPA6010	5	mg/kg	Aluminum	12853.05	crm ht
IC-401-1C-101117	SA_119-150um	EPA6010	4	mg/kg	Antimony	34.61	ht
IC-401-1C-101117	SA_119-2mm	EPA6010	5	mg/kg	Antimony	16.32	ht
IC-401-1C-101117	SA_119-150um	EPA6010	4	mg/kg	Arsenic	80.15	ht
IC-401-1C-101117	SA_119-2mm	EPA6010	5	mg/kg	Arsenic	29.39	ht
IC-401-1C-101117	SA_119-150um	EPA6010	4	mg/kg	Barium	258.83	ht
IC-401-1C-101117	SA_119-2mm	EPA6010	5	mg/kg	Barium	90.94	ht
							MDL
IC-401-1C-101117	SA_119-2mm	EPA6010	5	mg/kg	Beryllium	0.00	crm ht
IC 401 1C 101117	GA 110 150	EDA (010	4	Л	D 11'	0.00	crm rl
IC-401-1C-101117	SA_119-150um	EPA 6010	4	mg/kg	Beryllium	0.89	ht
IC-401-1C-101117	SA_119-150um	EPA6010	4	mg/kg	Cadmium	22.04	ht
IC-401-1C-101117	SA_119-2mm	EPA6010	5	mg/kg	Cadmium	7.41	ht
IC-401-1C-101117	SA_119-150um	EPA6010	4	mg/kg	Calcium	4771.29	ht
IC-401-1C-101117	SA_119-2mm	EPA6010	5	mg/kg	Calcium	3385.27	ht
IC-401-1C-101117	SA_119-150um	EPA6010	4	mg/kg	Chromium	43.23	ht
			_	_			dup
IC-401-1C-101117	SA_119-2mm	EPA6010	5	mg/kg	Chromium	30.09	ht
IC-401-1C-101117	SA_119-150um	EPA6010	4	mg/kg	Cobalt	9.06	ht
IC-401-1C-101117	SA_119-2mm	EPA6010	5	mg/kg	Cobalt	5.47	ht
IC-401-1C-101117	SA_119-150um	EPA6010	4	mg/kg	Copper	72.16	ht
IC-401-1C-101117	SA_119-2mm	EPA6010	5	mg/kg	Copper	24.83	ht
IC-401-1C-101117	SA_119-150um	EPA6010	4	mg/kg	Iron	34798.90	ht
IC-401-1C-101117	SA_119-2mm	EPA6010	5	mg/kg	Iron	21840.86	ht
IC-401-1C-101117	SA_119-150um	EPA6010	4	mg/kg	Lead	1321.22	ht
IC-401-1C-101117	SA_119-2mm	EPA6010	5	mg/kg	Lead	453.48	ht
IC-401-1C-101117	SA_119-150um	EPA6010	4	mg/kg	Magnesium	3183.36	ht
							crm
IC-401-1C-101117	SA_119-2mm	EPA6010	5	mg/kg	Magnesium	3098.60	ht
IC-401-1C-101117	SA_119-150um	EPA6010	4	mg/kg	Manganese	988.05	ht



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC-401-1C-101117	SA_119-2mm	EPA6010	5	mg/kg	Manganese	433.84	ht
IC-401-1C-101117	SA_119-150um	EPA6010	4	mg/kg	Nickel	18.37	ht
IC-401-1C-101117	SA_119-2mm	EPA6010	5	mg/kg	Nickel	12.23	ht
IC-401-1C-101117	SA_119-150um	EPA6010	4	mg/kg	Phosphorus	2136.47	ht
IC-401-1C-101117	SA_119-2mm	EPA6010	5	mg/kg	Phosphorus	1031.57	ht
IC-401-1C-101117	SA_119-150um	EPA6010	4	mg/kg	Potassium	2050.22	crm ht
IC-401-1C-101117	SA_119-2mm	EPA6010	5	mg/kg	Potassium	1200.47	ht
IC-401-1C-101117	SA_119-150um	EPA6010	4	mg/kg	Selenium	3.30	rl ht
IC-401-1C-101117	SA_119-2mm	EPA6010	5	mg/kg	Selenium	1.12	rl ht
							MDL
IC-401-1C-101117	SA_119-150um	EPA6010	4	mg/kg	Silver	0.20	ht
IC-401-1C-101117	SA_119-2mm	EPA6010	5	mg/kg	Silver	0.20	MDL ht
IC-401-1C-101117	SA_119-211111 SA 119-150um	EPA6010	4	mg/kg	Sodium	467.64	ht
IC-401-1C-101117	SA_119-130um SA_119-2mm	EPA6010	5	mg/kg	Sodium	155.26	ht
1C-401-1C-101117	5A_117-211111	LI A0010	3	mg/kg	Soutum	133.20	blk rl
IC-401-1C-101117	SA_119-150um	EPA6010	4	mg/kg	Thallium	0.54	ht
IC-401-1C-101117	SA_119-2mm	EPA6010	5	mg/kg	Thallium	0.52	rl ht
IC-401-1C-101117	SA_119-150um	EPA6010	4	mg/kg	Vanadium	90.24	ht
IC-401-1C-101117	SA_119-2mm	EPA6010	5	mg/kg	Vanadium	53.57	ht
IC-401-1C-101117	SA_119-150um	EPA6010	4	mg/kg	Zinc	782.91	ht
IC-401-1C-101117	SA_119-2mm	EPA6010	5	mg/kg	Zinc	292.72	ht
IC-401-1C-101117	SA_119-2mm	EPA_300.0	1	mg/kg	Chloride	15.95	ht
IC-401-1C-101117	SA_119-2mm	EPA_300.0	1	mg/kg	Sulfate	72.53	ht
IC-401-1C-101117	SA_119-bulk	D422	1	%	Fines	2.80	
IC-401-1C-101117	SA_119-bulk	D422	1	%	Gravel	24.66	
IC-401-1C-101117	SA_119-bulk	D422	1	%	Sand	81.60	
IC-401-1C-101117	SA_119-bulk	D422	1	%	Silt	15.60	
IC-401-1C-101117	SA_119-150um	Bioaccess2.5pH	1	%	Arsenic	6.67	
IC-401-1C-101117	SA_119-150um	Bioaccess2.5pH	1	%	Lead	38.10	
IC-401-1C-101117	SA_119-150um	Bioaccess1.5pH	1	%	Arsenic	17.49	



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC-401-1C-101117	SA_119-150um	Bioaccess1.5pH	1	%	Lead	78.40	
IC-401-1C-101117	SA_119-2mm	NELSON82	2	%	Carbon_total	5.20	ht
IC-401-1C-101117	SA_119-2mm	BREMNER82	2	%	Nitrogen_total	0.24	ht
IC-401-1C-101117-D	SA_120-bulk	SM2510B	1	mS/m	Conductivity	4.96	ht
IC-401-1C-101117-D	SA_120-bulk	рН	1		рН	5.15	ht
IC-401-1C-101117-D	SA_120-150um	EPA6010_MEHLICH3	8	mg/kg	Lead	316.75	
IC-401-1C-101117-D	SA_120-150um	EPA6010_MEHLICH3	8	mg/kg	Phosphorus	76.62	
IC-401-1C-101117-D	SA_120-150um	EPA6010_9200Bio2.5	1	mg/kg	Arsenic	5.17	
IC-401-1C-101117-D	SA_120-150um	EPA6010_9200Bio2.5	1	mg/kg	Lead	498.62	
IC-401-1C-101117-D	SA_120-150um	EPA6010_9200Bio1.5	1	mg/kg	Arsenic	14.16	
IC-401-1C-101117-D	SA_120-150um	EPA6010_9200Bio1.5	1	mg/kg	Lead	1084.42	
IC-401-1C-101117-D	SA_120-150um	EPA6010	4	mg/kg	Aluminum	24882.59	ht
IC-401-1C-101117-D	SA_120-2mm	EPA6010	5	mg/kg	Aluminum	12920.10	crm ht
IC-401-1C-101117-D	SA_120-150um	EPA6010	4	mg/kg	Antimony	35.54	ht
IC-401-1C-101117-D	SA_120-2mm	EPA6010	5	mg/kg	Antimony	18.34	ht
IC-401-1C-101117-D	SA_120-150um	EPA6010	4	mg/kg	Arsenic	82.15	ht
IC-401-1C-101117-D	SA_120-2mm	EPA6010	5	mg/kg	Arsenic	33.36	ht
IC-401-1C-101117-D	SA_120-150um	EPA6010	4	mg/kg	Barium	258.10	ht
IC-401-1C-101117-D	SA_120-2mm	EPA6010	5	mg/kg	Barium	95.52	ht
IC-401-1C-101117-D	SA_120-2mm	EPA6010	5	mg/kg	Beryllium	0.00	MDL crm ht
	_			<u> </u>			crm rl
IC-401-1C-101117-D	SA_120-150um	EPA6010	4	mg/kg	Beryllium	0.93	ht
IC-401-1C-101117-D	SA_120-150um	EPA6010	4	mg/kg	Cadmium	21.85	ht
IC-401-1C-101117-D	SA_120-2mm	EPA6010	5	mg/kg	Cadmium	7.89	ht
IC-401-1C-101117-D	SA_120-150um	EPA6010	4	mg/kg	Calcium	4974.25	ht
IC-401-1C-101117-D	SA_120-2mm	EPA6010	5	mg/kg	Calcium	3213.96	ht
							dup
IC-401-1C-101117-D	SA_120-2mm	EPA6010	5	mg/kg	Chromium	43.47	ht
IC-401-1C-101117-D	SA_120-150um	EPA6010	4	mg/kg	Chromium	43.14	ht
IC-401-1C-101117-D	SA_120-150um	EPA6010	4	mg/kg	Cobalt	9.43	ht



Appendix C Detailed Incremental Composite Sample Results SWEL – Soil Water Environmental Lab

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC-401-1C-101117-D	SA_120-2mm	EPA6010	5	mg/kg	Cobalt	5.91	ht
IC-401-1C-101117-D	SA_120-150um	EPA6010	4	mg/kg	Copper	73.87	ht
IC-401-1C-101117-D	SA_120-2mm	EPA6010	5	mg/kg	Copper	25.09	ht
IC-401-1C-101117-D	SA_120-150um	EPA6010	4	mg/kg	Iron	32683.66	ht
IC-401-1C-101117-D	SA_120-2mm	EPA6010	5	mg/kg	Iron	21665.73	ht
IC-401-1C-101117-D	SA_120-150um	EPA6010	4	mg/kg	Lead	1380.77	ht
IC-401-1C-101117-D	SA_120-2mm	EPA6010	5	mg/kg	Lead	503.17	ht
IC-401-1C-101117-D	SA_120-150um	EPA6010	4	mg/kg	Magnesium	3300.03	ht
							crm
IC-401-1C-101117-D	SA_120-2mm	EPA6010	5	mg/kg	Magnesium	2814.49	ht
IC-401-1C-101117-D	SA_120-150um	EPA6010	4	mg/kg	Manganese	987.48	ht
IC-401-1C-101117-D	SA_120-2mm	EPA6010	5	mg/kg	Manganese	435.80	ht
IC-401-1C-101117-D	SA_120-150um	EPA6010	4	mg/kg	Nickel	18.18	ht
IC-401-1C-101117-D	SA_120-2mm	EPA6010	5	mg/kg	Nickel	12.56	ht
IC-401-1C-101117-D	SA_120-150um	EPA6010	4	mg/kg	Phosphorus	2150.75	ht
IC-401-1C-101117-D	SA_120-2mm	EPA6010	5	mg/kg	Phosphorus	1016.17	ht
IC-401-1C-101117-D	SA_120-150um	EPA6010	4	mg/kg	Potassium	2187.88	crm ht
IC-401-1C-101117-D	SA_120-2mm	EPA6010	5	mg/kg	Potassium	1127.23	ht
IC-401-1C-101117-D	SA_120-150um	EPA6010	4	mg/kg	Selenium	3.53	rl ht
IC-401-1C-101117-D	SA_120-2mm	EPA6010	5	mg/kg	Selenium	0.98	rl ht
							MDL
IC-401-1C-101117-D	SA_120-150um	EPA6010	4	mg/kg	Silver	0.20	ht
10 101 10 10111 5 D	G	FD / 6010	_	a	Q.11	0.00	MDL
IC-401-1C-101117-D	SA_120-2mm	EPA6010	5	mg/kg	Silver	0.20	ht
IC-401-1C-101117-D	SA_120-150um	EPA6010	4	mg/kg	Sodium	552.96	ht
IC-401-1C-101117-D	SA_120-2mm	EPA6010	5	mg/kg	Sodium	160.36	ht
IC-401-1C-101117-D	SA_120-150um	EPA6010	4	mg/kg	Thallium	0.75	blk rl ht
IC-401-1C-101117-D	SA_120-130um	EPA6010	5	mg/kg	Thallium	0.73	rl ht
IC-401-1C-101117-D	SA_120-211111 SA_120-150um	EPA6010	4	mg/kg	Vanadium	84.61	ht
	_		5		Vanadium	t	
IC-401-1C-101117-D	SA_120-2mm	EPA6010	J	mg/kg	v anadium	55.54	ht



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC-401-1C-101117-D	SA_120-150um	EPA6010	4	mg/kg	Zinc	808.29	ht
IC-401-1C-101117-D	SA_120-2mm	EPA6010	5	mg/kg	Zinc	307.35	ht
IC-401-1C-101117-D	SA_120-2mm	EPA_300.0	1	mg/kg	Chloride	27.36	ht
IC-401-1C-101117-D	SA_120-2mm	EPA_300.0	1	mg/kg	Sulfate	65.45	ht
IC-401-1C-101117-D	SA_120-bulk	D422	1	%	Fines	3.06	
IC-401-1C-101117-D	SA_120-bulk	D422	1	%	Gravel	20.65	
IC-401-1C-101117-D	SA_120-bulk	D422	1	%	Sand	82.20	
IC-401-1C-101117-D	SA_120-bulk	D422	1	%	Silt	14.74	
IC-401-1C-101117-D	SA_120-150um	Bioaccess2.5pH	1	%	Arsenic	6.30	
IC-401-1C-101117-D	SA_120-150um	Bioaccess2.5pH	1	%	Lead	36.11	
IC-401-1C-101117-D	SA_120-150um	Bioaccess1.5pH	1	%	Arsenic	17.24	
IC-401-1C-101117-D	SA_120-150um	Bioaccess1.5pH	1	%	Lead	78.54	
IC-401-1C-101117 -D	SA_120-2mm	NELSON82	2	%	Carbon_total	4.55	ht
IC-401-1C-101117 -D	SA_120-2mm	BREMNER82	2	%	Nitrogen_total	0.21	ht
IC-401-1D-101117	SA_121-bulk	SM2510B	1	mS/m	Conductivity	6.10	ht
IC-401-1D-101117	SA_121-bulk	рН	1		рН	4.92	ht
IC-401-1D-101117	SA_121-150um	EPA6010_MEHLICH3	9	mg/kg	Lead	330.22	
IC-401-1D-101117	SA_121-150um	EPA6010_MEHLICH3	9	mg/kg	Phosphorus	90.38	
IC-401-1D-101117	SA_121-150um	EPA6010_9200Bio2.5	1	mg/kg	Arsenic	5.72	
IC-401-1D-101117	SA_121-150um	EPA6010_9200Bio2.5	1	mg/kg	Lead	482.37	
IC-401-1D-101117	SA_121-150um	EPA6010_9200Bio1.5	1	mg/kg	Arsenic	16.22	
IC-401-1D-101117	SA_121-150um	EPA6010_9200Bio1.5	1	mg/kg	Lead	1060.37	
IC-401-1D-101117	SA_121-150um	EPA6010	4	mg/kg	Aluminum	23141.78	ht
IC-401-1D-101117	SA_121-2mm	EPA6010	5	mg/kg	Aluminum	13680.62	crm ht
IC-401-1D-101117	SA_121-150um	EPA6010	4	mg/kg	Antimony	37.24	ht
IC-401-1D-101117	SA_121-2mm	EPA6010	5	mg/kg	Antimony	25.73	ht
IC-401-1D-101117	SA_121-150um	EPA6010	4	mg/kg	Arsenic	92.35	ht
IC-401-1D-101117	SA_121-2mm	EPA6010	5	mg/kg	Arsenic	42.72	ht
IC-401-1D-101117	SA_121-150um	EPA6010	4	mg/kg	Barium	236.53	ht
IC-401-1D-101117	SA_121-2mm	EPA6010	5	mg/kg	Barium	114.50	ht



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
							MDL
IC-401-1D-101117	SA_121-2mm	EPA6010	5	mg/kg	Beryllium	0.00	crm ht
IC 401 1D 101117	G + 121 150	ED 1 6010	4	и	D 11:	0.04	crm rl
IC-401-1D-101117	SA_121-150um	EPA6010	4	mg/kg	Beryllium	0.84	ht
IC-401-1D-101117	SA_121-150um	EPA6010	4	mg/kg	Cadmium	19.49	ht
IC-401-1D-101117	SA_121-2mm	EPA6010	5	mg/kg	Cadmium	9.72	ht
IC-401-1D-101117	SA_121-150um	EPA6010	4	mg/kg	Calcium	4483.67	ht
IC-401-1D-101117	SA_121-2mm	EPA6010	5	mg/kg	Calcium	3635.90	ht
IC-401-1D-101117	SA_121-150um	EPA6010	4	mg/kg	Chromium	39.69	ht
70 101 17 101117	a	777.1.404.0	_		~.	2.4.20	dup
IC-401-1D-101117	SA_121-2mm	EPA6010	5	mg/kg	Chromium	34.29	ht
IC-401-1D-101117	SA_121-150um	EPA6010	4	mg/kg	Cobalt	8.89	ht
IC-401-1D-101117	SA_121-2mm	EPA6010	5	mg/kg	Cobalt	5.75	ht
IC-401-1D-101117	SA_121-150um	EPA6010	4	mg/kg	Copper	81.52	ht
IC-401-1D-101117	SA_121-2mm	EPA6010	5	mg/kg	Copper	36.28	ht
IC-401-1D-101117	SA_121-150um	EPA6010	4	mg/kg	Iron	30456.39	ht
IC-401-1D-101117	SA_121-2mm	EPA6010	5	mg/kg	Iron	25731.06	ht
IC-401-1D-101117	SA_121-150um	EPA6010	4	mg/kg	Lead	1445.07	ht
IC-401-1D-101117	SA_121-2mm	EPA6010	5	mg/kg	Lead	751.49	ht
IC-401-1D-101117	SA_121-150um	EPA6010	4	mg/kg	Magnesium	3043.46	ht
							crm
IC-401-1D-101117	SA_121-2mm	EPA6010	5	mg/kg	Magnesium	2859.55	ht
IC-401-1D-101117	SA_121-150um	EPA6010	4	mg/kg	Manganese	864.24	ht
IC-401-1D-101117	SA_121-2mm	EPA6010	5	mg/kg	Manganese	486.77	ht
IC-401-1D-101117	SA_121-150um	EPA6010	4	mg/kg	Nickel	17.40	ht
IC-401-1D-101117	SA_121-2mm	EPA6010	5	mg/kg	Nickel	13.00	ht
IC-401-1D-101117	SA_121-150um	EPA6010	4	mg/kg	Phosphorus	2148.26	ht
IC-401-1D-101117	SA_121-2mm	EPA6010	5	mg/kg	Phosphorus	1130.42	ht
IC-401-1D-101117	SA_121-150um	EPA6010	4	mg/kg	Potassium	2033.35	crm ht
IC-401-1D-101117	SA_121-2mm	EPA6010	5	mg/kg	Potassium	1279.42	ht
IC-401-1D-101117	SA_121-150um	EPA6010	4	mg/kg	Selenium	3.04	rl ht



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC-401-1D-101117	SA_121-2mm	EPA6010	5	mg/kg	Selenium	1.08	rl ht
							MDL
IC-401-1D-101117	SA_121-150um	EPA6010	4	mg/kg	Silver	0.20	ht
			_	_			MDL
IC-401-1D-101117	SA_121-2mm	EPA6010	5	mg/kg	Silver	0.20	ht
IC-401-1D-101117	SA_121-150um	EPA6010	4	mg/kg	Sodium	473.72	ht
IC-401-1D-101117	SA_121-2mm	EPA6010	5	mg/kg	Sodium	185.70	ht
10 101 15 101115	G . 121 150	FD 1 5010		a	m 111	1.04	blk rl
IC-401-1D-101117	SA_121-150um	EPA6010	4	mg/kg	Thallium	1.04	ht
IC-401-1D-101117	SA_121-2mm	EPA6010	5	mg/kg	Thallium	0.44	rl ht
IC-401-1D-101117	SA_121-150um	EPA6010	4	mg/kg	Vanadium	76.88	ht
IC-401-1D-101117	SA_121-2mm	EPA6010	5	mg/kg	Vanadium	64.51	ht
IC-401-1D-101117	SA_121-150um	EPA6010	4	mg/kg	Zinc	743.66	ht
IC-401-1D-101117	SA_121-2mm	EPA6010	5	mg/kg	Zinc	416.08	ht
IC-401-1D-101117	SA_121-2mm	EPA_300.0	1	mg/kg	Chloride	17.95	ht
IC-401-1D-101117	SA_121-2mm	EPA_300.0	1	mg/kg	Sulfate	57.83	ht
IC-401-1D-101117	SA_121-bulk	D422	1	%	Fines	3.57	
IC-401-1D-101117	SA_121-bulk	D422	1	%	Gravel	32.45	
IC-401-1D-101117	SA_121-bulk	D422	1	%	Sand	77.80	
IC-401-1D-101117	SA_121-bulk	D422	1	%	Silt	18.63	
IC-401-1D-101117	SA_121-150um	Bioaccess2.5pH	1	%	Arsenic	6.19	
IC-401-1D-101117	SA_121-150um	Bioaccess2.5pH	1	%	Lead	33.38	
IC-401-1D-101117	SA_121-150um	Bioaccess1.5pH	1	%	Arsenic	17.56	
IC-401-1D-101117	SA_121-150um	Bioaccess1.5pH	1	%	Lead	73.38	
IC-401-1D-101117	SA_121-2mm	NELSON82	2	%	Carbon_total	10.48	ht
IC-401-1D-101117	SA_121-2mm	BREMNER82	2	%	Nitrogen_total	0.44	ht
IC-401-2B-101117	SA_122-bulk	SM2510B	1	mS/m	Conductivity	5.50	ht
IC-401-2B-101117	SA_122-bulk	рН	1		рН	5.15	ht
IC-401-2B-101117	SA_122-150um	EPA6010_MEHLICH3	9	mg/kg	Lead	243.58	
IC-401-2B-101117	SA_122-150um	EPA6010_MEHLICH3	9	mg/kg	Phosphorus	58.94	
IC-401-2B-101117	SA_122-150um	EPA6010_9200Bio2.5	1	mg/kg	Arsenic	5.38	



Appendix C

Detailed Incremental Composite Sample Results SWEL - Soil Water Environmental Lab d labresult.method code Batch d labresult.units Sample ID Analysis ID d_labresult.analyte value flags IC-401-2B-101117 383.53 SA_122-150um EPA6010_9200Bio2.5 mg/kg Lead IC-401-2B-101117 SA 122-150um EPA6010 9200Bio1.5 14.17 mg/kg Arsenic IC-401-2B-101117 SA 122-150um EPA6010 9200Bio1.5 792.26 mg/kg Lead IC-401-2B-101117 SA_122-150um EPA6010 26082.06 4 mg/kg Aluminum ht IC-401-2B-101117 SA 122-2mm 5 Aluminum 17693.23 EPA6010 mg/kg crm ht IC-401-2B-101117 SA 122-150um EPA6010 4 mg/kg Antimony 30.47 ht IC-401-2B-101117 SA_122-2mm EPA6010 5 Antimony 18.22 mg/kg ht IC-401-2B-101117 SA 122-150um EPA6010 4 mg/kg Arsenic 83.83 ht IC-401-2B-101117 SA_122-2mm EPA6010 5 mg/kg Arsenic 41.99 ht 254.07 SA 122-150um IC-401-2B-101117 EPA6010 1 Rarium mo/ko ht

IC-401-2B-101117	SA_122-150um	EPA6010	4	mg/kg	Barium	254.07	nt
IC-401-2B-101117	SA_122-2mm	EPA6010	5	mg/kg	Barium	130.21	ht
							MDL
IC-401-2B-101117	SA_122-2mm	EPA6010	5	mg/kg	Beryllium	0.00	crm ht
							crm rl
IC-401-2B-101117	SA_122-150um	EPA6010	4	mg/kg	Beryllium	0.89	ht
IC-401-2B-101117	SA_122-150um	EPA6010	4	mg/kg	Cadmium	20.36	ht
IC-401-2B-101117	SA_122-2mm	EPA6010	5	mg/kg	Cadmium	11.34	ht
IC-401-2B-101117	SA_122-150um	EPA6010	4	mg/kg	Calcium	4807.24	ht
IC-401-2B-101117	SA_122-2mm	EPA6010	5	mg/kg	Calcium	4136.17	ht
							dup
IC-401-2B-101117	SA_122-2mm	EPA6010	5	mg/kg	Chromium	39.71	ht
IC-401-2B-101117	SA_122-150um	EPA6010	4	mg/kg	Chromium	35.44	ht
IC-401-2B-101117	SA_122-150um	EPA6010	4	mg/kg	Cobalt	8.89	ht
IC-401-2B-101117	SA_122-2mm	EPA6010	5	mg/kg	Cobalt	6.91	ht
IC-401-2B-101117	SA_122-150um	EPA6010	4	mg/kg	Copper	64.14	ht
IC-401-2B-101117	SA_122-2mm	EPA6010	5	mg/kg	Copper	32.25	ht
IC-401-2B-101117	SA_122-2mm	EPA6010	5	mg/kg	Iron	26556.52	ht
IC-401-2B-101117	SA_122-150um	EPA6010	4	mg/kg	Iron	26545.39	ht
IC-401-2B-101117	SA_122-150um	EPA6010	4	mg/kg	Lead	963.82	ht
IC-401-2B-101117	SA_122-2mm	EPA6010	5	mg/kg	Lead	553.59	ht



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
							crm
IC-401-2B-101117	SA_122-2mm	EPA6010	5	mg/kg	Magnesium	2958.83	ht
IC-401-2B-101117	SA_122-150um	EPA6010	4	mg/kg	Magnesium	2920.85	ht
IC-401-2B-101117	SA_122-150um	EPA6010	4	mg/kg	Manganese	1060.67	ht
IC-401-2B-101117	SA_122-2mm	EPA6010	5	mg/kg	Manganese	652.84	ht
IC-401-2B-101117	SA_122-150um	EPA6010	4	mg/kg	Nickel	16.45	ht
IC-401-2B-101117	SA_122-2mm	EPA6010	5	mg/kg	Nickel	14.23	ht
IC-401-2B-101117	SA_122-150um	EPA6010	4	mg/kg	Phosphorus	2265.73	ht
IC-401-2B-101117	SA_122-2mm	EPA6010	5	mg/kg	Phosphorus	1350.86	ht
IC-401-2B-101117	SA_122-150um	EPA6010	4	mg/kg	Potassium	2038.52	crm ht
IC-401-2B-101117	SA_122-2mm	EPA6010	5	mg/kg	Potassium	1797.77	ht
IC-401-2B-101117	SA_122-2mm	EPA6010	5	mg/kg	Selenium	0.70	ht
IC-401-2B-101117	SA_122-150um	EPA6010	4	mg/kg	Selenium	3.20	rl ht
							MDL
IC-401-2B-101117	SA_122-150um	EPA6010	4	mg/kg	Silver	0.20	ht
TG 404 2D 40444	G	777.1.404.0	_		~		MDL
IC-401-2B-101117	SA_122-2mm	EPA6010	5	mg/kg	Silver	0.20	ht
IC-401-2B-101117	SA_122-150um	EPA6010	4	mg/kg	Sodium	627.47	ht
IC-401-2B-101117	SA_122-2mm	EPA6010	5	mg/kg	Sodium	316.89	ht
IG 401 2D 101117	GA 100 150	ED 4 6010	4	п	771 11°	1.07	blk rl
IC-401-2B-101117	SA_122-150um	EPA6010	4	mg/kg	Thallium	1.07	ht
IC-401-2B-101117	SA_122-2mm	EPA6010	5	mg/kg	Thallium	0.72	rl ht
IC-401-2B-101117	SA_122-2mm	EPA6010	5	mg/kg	Vanadium	66.97	ht
IC-401-2B-101117	SA_122-150um	EPA6010	4	mg/kg	Vanadium	66.41	ht
IC-401-2B-101117	SA_122-150um	EPA6010	4	mg/kg	Zinc	816.49	ht
IC-401-2B-101117	SA_122-2mm	EPA6010	5	mg/kg	Zinc	471.08	ht
IC-401-2B-101117	SA_122-2mm	EPA_300.0	1	mg/kg	Chloride	17.50	ht
IC-401-2B-101117	SA_122-2mm	EPA_300.0	1	mg/kg	Sulfate	62.30	ht
IC-401-2B-101117	SA_122-bulk	D422	1	%	Fines	3.89	
IC-401-2B-101117	SA_122-bulk	D422	1	%	Gravel	36.69	
IC-401-2B-101117	SA_122-bulk	D422	1	%	Sand	74.70	



IC1-401-2A-101217

SA 123-2mm

Appendix C

Detailed Incremental Composite Sample Results SWEL - Soil Water Environmental Lab Sample ID d labresult.method code d labresult.analyte Analysis ID Batch d labresult.units value flags IC-401-2B-101117 SA 122-bulk D422 % Silt 21.41 IC-401-2B-101117 % 6.42 SA 122-150um Bioaccess2.5pH Arsenic IC-401-2B-101117 % 39.79 SA 122-150um Bioaccess2.5pH Lead % IC-401-2B-101117 SA_122-150um 16.90 Bioaccess1.5pH 1 Arsenic IC-401-2B-101117 % 82.20 SA 122-150um Bioaccess1.5pH 1 Lead IC-401-2B-101117 SA 122-2mm NELSON82 2 % Carbon total 9.14 ht % Nitrogen total IC-401-2B-101117 SA 122-2mm BREMNER82 0.45 ht IC1-401-2A-101217 SA 123-bulk SM2510B 1 mS/m Conductivity 6.02 ht IC1-401-2A-101217 рH SA 123-bulk рH 4.56 ht IC1-401-2A-101217 SA 123-150um EPA6010 MEHLICH3 9 mg/kg Lead 453.91 IC1-401-2A-101217 SA 123-150um EPA6010 MEHLICH3 9 109.64 mg/kg Phosphorus IC1-401-2A-101217 SA 123-150um EPA6010 9200Bio2.5 10.47 mg/kg Arsenic IC1-401-2A-101217 SA 123-150um EPA6010 9200Bio2.5 mg/kg Lead 689.93 IC1-401-2A-101217 mg/kg 24.87 SA 123-150um EPA6010 9200Bio1.5 Arsenic EPA6010 9200Bio1.5 mg/kg 1399.61 IC1-401-2A-101217 SA 123-150um Lead EPA6010 IC1-401-2A-101217 SA 123-150um 4 mg/kg Aluminum 22665.93 ht IC1-401-2A-101217 SA 123-2mm EPA6010 5 Aluminum 14893.12 mg/kg crm ht SA 123-150um EPA6010 4 54.01 IC1-401-2A-101217 Antimony mg/kg ht IC1-401-2A-101217 SA 123-2mm EPA6010 5 41.74 Antimony mg/kg ht SA 123-150um EPA6010 4 117.13 mg/kg ht IC1-401-2A-101217 Arsenic IC1-401-2A-101217 SA 123-2mm EPA6010 5 mg/kg Arsenic 57.97 ht Barium IC1-401-2A-101217 SA 123-150um 4 mg/kg EPA6010 229.70 ht IC1-401-2A-101217 SA 123-2mm EPA6010 5 Barium 114.29 ht mg/kg MDL IC1-401-2A-101217 SA 123-2mm EPA6010 5 mg/kg Beryllium 0.00 crm ht crm rl IC1-401-2A-101217 SA 123-150um EPA6010 4 mg/kg Beryllium 0.80 ht 4 IC1-401-2A-101217 SA 123-150um EPA6010 mg/kg Cadmium 26.96 ht IC1-401-2A-101217 SA 123-2mm 5 mg/kg Cadmium EPA6010 13.57 ht 3673.65 IC1-401-2A-101217 SA 123-150um EPA6010 4 mg/kg Calcium ht

5

mg/kg

Calcium

3143.62

ht

EPA6010



Appendix C

Detailed Incremental Composite Sample Results SWEL - Soil Water Environmental Lab d labresult.method code Sample ID Analysis ID d labresult.analyte Batch d labresult.units value flags IC1-401-2A-101217 SA 123-150um EPA6010 4 mg/kg Chromium 35.26 ht dup Chromium IC1-401-2A-101217 SA 123-2mm EPA6010 5 mg/kg 32.74 ht SA 123-150um EPA6010 4 8.54 Cobalt IC1-401-2A-101217 mg/kg ht SA 123-2mm EPA6010 5 6.27 IC1-401-2A-101217 Cobalt mg/kg ht IC1-401-2A-101217 SA 123-150um EPA6010 4 mg/kg Copper 86.47 ht IC1-401-2A-101217 SA 123-2mm EPA6010 5 42.60 mg/kg Copper ht IC1-401-2A-101217 SA 123-150um EPA6010 4 mg/kg Iron 27723.28 ht IC1-401-2A-101217 SA_123-2mm EPA6010 5 mg/kg 23177.56 Iron ht IC1-401-2A-101217 SA_123-150um EPA6010 4 mg/kg Lead 1787.53 ht IC1-401-2A-101217 SA 123-2mm EPA6010 5 1087.31 mg/kg Lead ht crm IC1-401-2A-101217 SA 123-2mm EPA6010 2995.43 5 mg/kg Magnesium ht IC1-401-2A-101217 SA 123-150um EPA6010 4 mg/kg Magnesium 2792.73 ht IC1-401-2A-101217 SA 123-150um Manganese 1028.47 mg/kg EPA6010 4 ht IC1-401-2A-101217 SA 123-2mm 5 Manganese EPA6010 mg/kg 567.94 ht Nickel IC1-401-2A-101217 SA 123-150um EPA6010 4 mg/kg 16.38 ht IC1-401-2A-101217 SA 123-2mm EPA6010 5 mg/kg Nickel 13.16 ht SA 123-150um EPA6010 4 2333.32 IC1-401-2A-101217 mg/kg Phosphorus ht 5 IC1-401-2A-101217 SA 123-2mm EPA6010 1371.16 **Phosphorus** ht mg/kg IC1-401-2A-101217 SA 123-150um EPA6010 4 1855.53 mg/kg Potassium crm ht IC1-401-2A-101217 SA 123-2mm EPA6010 5 mg/kg Potassium 1452.81 ht IC1-401-2A-101217 Selenium SA 123-150um EPA6010 4 mg/kg 4.25 rl ht 5 IC1-401-2A-101217 SA 123-2mm EPA6010 1.69 rl ht mg/kg Selenium MDL EPA6010 4 mg/kg Silver 0.20 IC1-401-2A-101217 SA 123-150um ht **MDL** IC1-401-2A-101217 SA 123-2mm EPA6010 5 mg/kg Silver 0.20 ht IC1-401-2A-101217 SA 123-150um EPA6010 4 mg/kg Sodium 445.67 ht IC1-401-2A-101217 SA 123-2mm 5 EPA6010 mg/kg Sodium 204.97 ht blk rl SA 123-150um 0.98 IC1-401-2A-101217 EPA6010 4 mg/kg Thallium ht



Appendix C Detailed Incremental Composite Sample Results SWEL - Soil Water Environmental Lab

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC1-401-2A-101217	SA_123-2mm	EPA6010	5	mg/kg	Thallium	0.78	rl ht
IC1-401-2A-101217	SA_123-150um	EPA6010	4	mg/kg	Vanadium	68.23	ht
IC1-401-2A-101217	SA_123-2mm	EPA6010	5	mg/kg	Vanadium	57.25	ht
IC1-401-2A-101217	SA_123-150um	EPA6010	4	mg/kg	Zinc	827.21	ht
IC1-401-2A-101217	SA_123-2mm	EPA6010	5	mg/kg	Zinc	446.10	ht
IC1-401-2A-101217	SA_123-2mm	EPA_300.0	1	mg/kg	Chloride	17.03	ht
IC1-401-2A-101217	SA_123-2mm	EPA_300.0	1	mg/kg	Sulfate	65.73	ht
IC1-401-2A-101217	SA_123-bulk	D422	1	%	Fines	3.89	
IC1-401-2A-101217	SA_123-bulk	D422	1	%	Gravel	27.05	
IC1-401-2A-101217	SA_123-bulk	D422	1	%	Sand	78.10	
IC1-401-2A-101217	SA_123-bulk	D422	1	%	Silt	18.01	
IC1-401-2A-101217	SA_123-150um	Bioaccess2.5pH	1	%	Arsenic	8.94	
IC1-401-2A-101217	SA_123-150um	Bioaccess2.5pH	1	%	Lead	38.60	
IC1-401-2A-101217	SA_123-150um	Bioaccess1.5pH	1	%	Arsenic	21.23	
IC1-401-2A-101217	SA_123-150um	Bioaccess1.5pH	1	%	Lead	78.30	
IC1-401-2A-101217	SA_123-2mm	NELSON82	2	%	Carbon_total	6.55	ht
IC1-401-2A-101217	SA_123-2mm	BREMNER82	2	%	Nitrogen_total	0.27	ht
IC2-401-2A-101217	SA_124-bulk	SM2510B	1	mS/m	Conductivity	5.62	ht
IC2-401-2A-101217	SA_124-bulk	рН	1		рН	4.56	ht
IC2-401-2A-101217	SA_124-150um	EPA6010_MEHLICH3	9	mg/kg	Lead	400.93	
IC2-401-2A-101217	SA_124-150um	EPA6010_MEHLICH3	9	mg/kg	Phosphorus	115.23	
IC2-401-2A-101217	SA_124-150um	EPA6010_9200Bio2.5	2	mg/kg	Arsenic	11.35	
IC2-401-2A-101217	SA_124-150um	EPA6010_9200Bio2.5	2	mg/kg	Lead	622.53	
IC2-401-2A-101217	SA_124-150um	EPA6010_9200Bio1.5	2	mg/kg	Arsenic	25.00	
IC2-401-2A-101217	SA_124-150um	EPA6010_9200Bio1.5	2	mg/kg	Lead	1160.82	
IC2-401-2A-101217	SA_124-150um	EPA6010	4	mg/kg	Aluminum	23672.30	ht
IC2-401-2A-101217	SA_124-2mm	EPA6010	5	mg/kg	Aluminum	15941.75	crm ht
IC2-401-2A-101217	SA_124-150um	EPA6010	4	mg/kg	Antimony	48.18	ht
IC2-401-2A-101217	SA_124-2mm	EPA6010	5	mg/kg	Antimony	33.33	ht
IC2-401-2A-101217	SA_124-150um	EPA6010	4	mg/kg	Arsenic	115.59	ht



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC2-401-2A-101217	SA_124-2mm	EPA6010	5	mg/kg	Arsenic	55.50	ht
IC2-401-2A-101217	SA_124-150um	EPA6010	4	mg/kg	Barium	231.45	ht
IC2-401-2A-101217	SA_124-2mm	EPA6010	5	mg/kg	Barium	113.82	ht
							MDL
IC2-401-2A-101217	SA_124-2mm	EPA6010	5	mg/kg	Beryllium	0.00	crm ht
102 401 24 101217	GA 124 150	ED 4 6010	4	п	D 11'	0.02	crm rl
IC2-401-2A-101217	SA_124-150um	EPA6010	4	mg/kg	Beryllium	0.83	ht
IC2-401-2A-101217	SA_124-150um	EPA6010	4	mg/kg	Cadmium	25.64	ht
IC2-401-2A-101217	SA_124-2mm	EPA6010	5	mg/kg	Cadmium	12.95	ht
IC2-401-2A-101217	SA_124-150um	EPA6010	4	mg/kg	Calcium	3587.16	ht
IC2-401-2A-101217	SA_124-2mm	EPA6010	5	mg/kg	Calcium	3417.34	ht
							dup
IC2-401-2A-101217	SA_124-2mm	EPA6010	5	mg/kg	Chromium	33.65	ht
IC2-401-2A-101217	SA_124-150um	EPA6010	4	mg/kg	Chromium	30.96	ht
IC2-401-2A-101217	SA_124-150um	EPA6010	4	mg/kg	Cobalt	8.63	ht
IC2-401-2A-101217	SA_124-2mm	EPA6010	5	mg/kg	Cobalt	6.06	ht
IC2-401-2A-101217	SA_124-150um	EPA6010	4	mg/kg	Copper	82.37	ht
IC2-401-2A-101217	SA_124-2mm	EPA6010	5	mg/kg	Copper	38.90	ht
IC2-401-2A-101217	SA_124-150um	EPA6010	4	mg/kg	Iron	26701.99	ht
IC2-401-2A-101217	SA_124-2mm	EPA6010	5	mg/kg	Iron	23644.37	ht
IC2-401-2A-101217	SA_124-150um	EPA6010	4	mg/kg	Lead	1530.51	ht
IC2-401-2A-101217	SA_124-2mm	EPA6010	5	mg/kg	Lead	794.96	ht
IC2-401-2A-101217	SA_124-150um	EPA6010	4	mg/kg	Magnesium	2914.15	ht
							crm
IC2-401-2A-101217	SA_124-2mm	EPA6010	5	mg/kg	Magnesium	2812.28	ht
IC2-401-2A-101217	SA_124-150um	EPA6010	4	mg/kg	Manganese	1082.39	ht
IC2-401-2A-101217	SA_124-2mm	EPA6010	5	mg/kg	Manganese	613.66	ht
IC2-401-2A-101217	SA_124-150um	EPA6010	4	mg/kg	Nickel	16.51	ht
IC2-401-2A-101217	SA_124-2mm	EPA6010	5	mg/kg	Nickel	13.00	ht
IC2-401-2A-101217	SA_124-150um	EPA6010	4	mg/kg	Phosphorus	2449.15	ht
IC2-401-2A-101217	SA_124-2mm	EPA6010	5	mg/kg	Phosphorus	1438.87	ht



SWEL – Soil Water Environmental Lab Detaile			Appendix C I Incremental Composite Sample Results				
Sample ID	Analysis ID	d labresult.method code	Batch	d labresult.units	d labresult.analyte	value	flags
IC2-401-2A-101217	SA_124-150um	EPA6010	4	mg/kg	Potassium	1918.53	crm ht
IC2-401-2A-101217	SA_124-2mm	EPA6010	5	mg/kg	Potassium	1607.69	ht
IC2-401-2A-101217	SA_124-150um	EPA6010	4	mg/kg	Selenium	3.68	rl ht
IC2-401-2A-101217	SA_124-2mm	EPA6010	5	mg/kg	Selenium	0.99	rl ht
IC2-401-2A-101217	SA_124-150um	EPA6010	4	mg/kg	Silver	0.20	MDL ht
IC2-401-2A-101217	SA_124-2mm	EPA6010	5	mg/kg	Silver	0.20	MDL ht
IC2-401-2A-101217	SA_124-150um	EPA6010	4	mg/kg	Sodium	490.88	ht
IC2-401-2A-101217	SA_124-2mm	EPA6010	5	mg/kg	Sodium	251.49	ht
IC2-401-2A-101217	SA_124-150um	EPA6010	4	mg/kg	Thallium	1.10	blk rl ht
IC2-401-2A-101217	SA_124-2mm	EPA6010	5	mg/kg	Thallium	0.91	rl ht
IC2-401-2A-101217	SA_124-150um	EPA6010	4	mg/kg	Vanadium	65.01	ht
IC2-401-2A-101217	SA_124-2mm	EPA6010	5	mg/kg	Vanadium	58.14	ht
IC2-401-2A-101217	SA_124-150um	EPA6010	4	mg/kg	Zinc	746.11	ht
IC2-401-2A-101217	SA_124-2mm	EPA6010	5	mg/kg	Zinc	419.61	ht
IC2-401-2A-101217	SA_124-2mm	EPA_300.0	1	mg/kg	Chloride	17.74	ht
IC2-401-2A-101217	SA_124-2mm	EPA_300.0	1	mg/kg	Sulfate	66.20	ht
IC2-401-2A-101217	SA_124-bulk	D422	1	%	Fines	4.40	
IC2-401-2A-101217	SA_124-bulk	D422	1	%	Gravel	24.80	
IC2-401-2A-101217	SA_124-bulk	D422	1	%	Sand	75.10	
IC2-401-2A-101217	SA_124-bulk	D422	1	%	Silt	20.50	
IC2-401-2A-101217	SA_124-150um	Bioaccess2.5pH	2	%	Arsenic	9.82	
IC2-401-2A-101217	SA_124-150um	Bioaccess2.5pH	2	%	Lead	40.67	
IC2-401-2A-101217	SA_124-150um	Bioaccess1.5pH	2	%	Arsenic	21.63	
IC2-401-2A-101217	SA_124-150um	Bioaccess1.5pH	2	%	Lead	75.85	
IC2-401-2A-101217	SA_124-2mm	NELSON82	2	%	Carbon_total	5.02	ht
IC2-401-2A-101217	SA_124-2mm	BREMNER82	2	%	Nitrogen_total	0.22	ht
IC3-401-2A-101217	SA_125-bulk	SM2510B	1	mS/m	Conductivity	5.20	ht
IC3-401-2A-101217	SA_125-bulk	рН	1		рН	4.72	ht



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Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC3-401-2A-101217	SA_125-150um	EPA6010_MEHLICH3	10	mg/kg	Lead	364.14	
IC3-401-2A-101217	SA_125-150um	EPA6010_MEHLICH3	10	mg/kg	Phosphorus	99.38	
IC3-401-2A-101217	SA_125-150um	EPA6010_9200Bio2.5	2	mg/kg	Arsenic	10.94	
IC3-401-2A-101217	SA_125-150um	EPA6010_9200Bio2.5	2	mg/kg	Lead	598.44	
IC3-401-2A-101217	SA_125-150um	EPA6010_9200Bio1.5	2	mg/kg	Arsenic	24.01	
IC3-401-2A-101217	SA_125-150um	EPA6010_9200Bio1.5	2	mg/kg	Lead	1093.74	
IC3-401-2A-101217	SA_125-150um	EPA6010	4	mg/kg	Aluminum	23964.97	ht
IC3-401-2A-101217	SA_125-2mm	EPA6010	5	mg/kg	Aluminum	15276.07	crm ht
IC3-401-2A-101217	SA_125-150um	EPA6010	4	mg/kg	Antimony	48.15	ht
IC3-401-2A-101217	SA_125-2mm	EPA6010	5	mg/kg	Antimony	32.96	ht
IC3-401-2A-101217	SA_125-150um	EPA6010	4	mg/kg	Arsenic	111.20	ht
IC3-401-2A-101217	SA_125-2mm	EPA6010	5	mg/kg	Arsenic	52.85	ht
IC3-401-2A-101217	SA_125-150um	EPA6010	4	mg/kg	Barium	237.00	ht
IC3-401-2A-101217	SA_125-2mm	EPA6010	5	mg/kg	Barium	107.81	ht
							MDL
IC3-401-2A-101217	SA_125-2mm	EPA6010	5	mg/kg	Beryllium	0.00	crm ht
700 101 01 101017	a	777.1.404.0			- ···	0.04	crm rl
IC3-401-2A-101217	SA_125-150um	EPA6010	4	mg/kg	Beryllium	0.84	ht
IC3-401-2A-101217	SA_125-150um	EPA6010	4	mg/kg	Cadmium	29.64	ht
IC3-401-2A-101217	SA_125-2mm	EPA6010	5	mg/kg	Cadmium	13.44	ht
IC3-401-2A-101217	SA_125-2mm	EPA6010	5	mg/kg	Calcium	3946.37	ht
IC3-401-2A-101217	SA_125-150um	EPA6010	4	mg/kg	Calcium	3751.81	ht
							dup
IC3-401-2A-101217	SA_125-2mm	EPA6010	5	mg/kg	Chromium	46.19	ht
IC3-401-2A-101217	SA_125-150um	EPA6010	4	mg/kg	Chromium	34.78	ht
IC3-401-2A-101217	SA_125-150um	EPA6010	4	mg/kg	Cobalt	8.75	ht
IC3-401-2A-101217	SA_125-2mm	EPA6010	5	mg/kg	Cobalt	6.27	ht
IC3-401-2A-101217	SA_125-150um	EPA6010	4	mg/kg	Copper	79.58	ht
IC3-401-2A-101217	SA_125-2mm	EPA6010	5	mg/kg	Copper	37.14	ht
IC3-401-2A-101217	SA_125-150um	EPA6010	4	mg/kg	Iron	29035.93	ht
IC3-401-2A-101217	SA_125-2mm	EPA6010	5	mg/kg	Iron	24077.11	ht



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC3-401-2A-101217	SA_125-150um	EPA6010	4	mg/kg	Lead	1439.92	ht
IC3-401-2A-101217	SA_125-2mm	EPA6010	5	mg/kg	Lead	767.44	ht
IC3-401-2A-101217	SA_125-150um	EPA6010	4	mg/kg	Magnesium	2920.53	ht
							crm
IC3-401-2A-101217	SA_125-2mm	EPA6010	5	mg/kg	Magnesium	2859.17	ht
IC3-401-2A-101217	SA_125-150um	EPA6010	4	mg/kg	Manganese	1124.46	ht
IC3-401-2A-101217	SA_125-2mm	EPA6010	5	mg/kg	Manganese	588.66	ht
IC3-401-2A-101217	SA_125-150um	EPA6010	4	mg/kg	Nickel	16.91	ht
IC3-401-2A-101217	SA_125-2mm	EPA6010	5	mg/kg	Nickel	12.75	ht
IC3-401-2A-101217	SA_125-150um	EPA6010	4	mg/kg	Phosphorus	2395.65	ht
IC3-401-2A-101217	SA_125-2mm	EPA6010	5	mg/kg	Phosphorus	1342.21	ht
IC3-401-2A-101217	SA_125-150um	EPA6010	4	mg/kg	Potassium	1950.62	crm ht
IC3-401-2A-101217	SA_125-2mm	EPA6010	5	mg/kg	Potassium	1510.51	ht
IC3-401-2A-101217	SA_125-150um	EPA6010	4	mg/kg	Selenium	3.99	rl ht
IC3-401-2A-101217	SA_125-2mm	EPA6010	5	mg/kg	Selenium	0.81	rl ht
							MDL
IC3-401-2A-101217	SA_125-150um	EPA6010	4	mg/kg	Silver	0.20	ht
100 101 01 101017	G . 125 2	FD 1 5010	_	a	G.1	0.00	MDL
IC3-401-2A-101217	SA_125-2mm	EPA6010	5	mg/kg	Silver	0.20	ht
IC3-401-2A-101217	SA_125-150um	EPA6010	4	mg/kg	Sodium	489.94	ht
IC3-401-2A-101217	SA_125-2mm	EPA6010	5	mg/kg	Sodium	227.33	ht
IC3-401-2A-101217	SA 125-150um	EPA6010	4	m a/lra	Thallium	1.55	blk rl ht
IC3-401-2A-101217	SA_125-130um SA 125-2mm	EPA6010 EPA6010	5	mg/kg	Thallium	0.63	rl ht
IC3-401-2A-101217	_	EPA6010 EPA6010	4	mg/kg	Vanadium		
	SA_125-150um			mg/kg		72.07	ht
IC3-401-2A-101217	SA_125-2mm	EPA 6010	5	mg/kg	Vanadium	62.20	ht
IC3-401-2A-101217	SA_125-150um	EPA6010	4	mg/kg	Zinc	841.79	ht
IC3-401-2A-101217	SA_125-2mm	EPA6010	5	mg/kg	Zinc	414.96	ht
IC3-401-2A-101217	SA_125-2mm	EPA_300.0	1	mg/kg	Chloride	17.96	ht
IC3-401-2A-101217	SA_125-2mm	EPA_300.0	1	mg/kg	Sulfate	66.27	ht
IC3-401-2A-101217	SA_125-bulk	D422	1	%	Fines	4.21	



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC3-401-2A-101217	SA_125-bulk	D422	1	%	Gravel	33.52	
IC3-401-2A-101217	SA_125-bulk	D422	1	%	Sand	76.50	
IC3-401-2A-101217	SA_125-bulk	D422	1	%	Silt	19.29	
IC3-401-2A-101217	SA_125-150um	Bioaccess2.5pH	2	%	Arsenic	9.84	
IC3-401-2A-101217	SA_125-150um	Bioaccess2.5pH	2	%	Lead	41.56	
IC3-401-2A-101217	SA_125-150um	Bioaccess1.5pH	2	%	Arsenic	21.59	
IC3-401-2A-101217	SA_125-150um	Bioaccess1.5pH	2	%	Lead	75.96	
IC3-401-2A-101217	SA_125-2mm	NELSON82	2	%	Carbon_total	5.75	ht
IC3-401-2A-101217	SA_125-2mm	BREMNER82	2	%	Nitrogen_total	0.25	ht
IC-401-2C-101217	SA_126-bulk	SM2510B	1	mS/m	Conductivity	5.13	ht
IC-401-2C-101217	SA_126-bulk	рН	1		рН	4.86	ht
IC-401-2C-101217	SA_126-150um	EPA6010_MEHLICH3	10	mg/kg	Lead	294.13	
IC-401-2C-101217	SA_126-150um	EPA6010_MEHLICH3	10	mg/kg	Phosphorus	72.92	
IC-401-2C-101217	SA_126-150um	EPA6010_9200Bio2.5	2	mg/kg	Arsenic	6.78	
IC-401-2C-101217	SA_126-150um	EPA6010_9200Bio2.5	2	mg/kg	Lead	486.53	
IC-401-2C-101217	SA_126-150um	EPA6010_9200Bio1.5	2	mg/kg	Arsenic	16.59	
IC-401-2C-101217	SA_126-150um	EPA6010_9200Bio1.5	2	mg/kg	Lead	929.86	
IC-401-2C-101217	SA_126-150um	EPA6010	4	mg/kg	Aluminum	24667.37	ht
IC-401-2C-101217	SA_126-2mm	EPA6010	5	mg/kg	Aluminum	16902.33	crm ht
IC-401-2C-101217	SA_126-150um	EPA6010	4	mg/kg	Antimony	39.97	ht
IC-401-2C-101217	SA_126-2mm	EPA6010	5	mg/kg	Antimony	27.21	ht
IC-401-2C-101217	SA_126-150um	EPA6010	4	mg/kg	Arsenic	99.24	ht
IC-401-2C-101217	SA_126-2mm	EPA6010	5	mg/kg	Arsenic	48.92	ht
IC-401-2C-101217	SA_126-150um	EPA6010	4	mg/kg	Barium	254.41	ht
IC-401-2C-101217	SA_126-2mm	EPA6010	5	mg/kg	Barium	142.89	ht
							MDL
IC-401-2C-101217	SA_126-2mm	EPA6010	5	mg/kg	Beryllium	0.00	crm ht
IC-401-2C-101217	SA_126-150um	EPA6010	1	ma/ka	Beryllium	0.86	crm rl ht
IC-401-2C-101217	SA_126-150um	EPA6010 EPA6010	4	mg/kg	Cadmium	23.64	ht
	_		5	mg/kg		 	
IC-401-2C-101217	SA_126-2mm	EPA6010)	mg/kg	Cadmium	11.91	ht



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC-401-2C-101217	SA_126-150um	EPA6010	4	mg/kg	Calcium	4006.63	ht
IC-401-2C-101217	SA_126-2mm	EPA6010	5	mg/kg	Calcium	3800.96	ht
							dup
IC-401-2C-101217	SA_126-2mm	EPA6010	5	mg/kg	Chromium	36.17	ht
IC-401-2C-101217	SA_126-150um	EPA6010	4	mg/kg	Chromium	35.96	ht
IC-401-2C-101217	SA_126-150um	EPA6010	4	mg/kg	Cobalt	9.19	ht
IC-401-2C-101217	SA_126-2mm	EPA6010	5	mg/kg	Cobalt	6.65	ht
IC-401-2C-101217	SA_126-150um	EPA6010	4	mg/kg	Copper	73.29	ht
IC-401-2C-101217	SA_126-2mm	EPA6010	5	mg/kg	Copper	36.44	ht
IC-401-2C-101217	SA_126-150um	EPA6010	4	mg/kg	Iron	27024.37	ht
IC-401-2C-101217	SA_126-2mm	EPA6010	5	mg/kg	Iron	25779.72	ht
IC-401-2C-101217	SA_126-150um	EPA6010	4	mg/kg	Lead	1349.04	ht
IC-401-2C-101217	SA_126-2mm	EPA6010	5	mg/kg	Lead	696.26	ht
							crm
IC-401-2C-101217	SA_126-2mm	EPA6010	5	mg/kg	Magnesium	3076.50	ht
IC-401-2C-101217	SA_126-150um	EPA6010	4	mg/kg	Magnesium	2986.11	ht
IC-401-2C-101217	SA_126-150um	EPA6010	4	mg/kg	Manganese	1022.83	ht
IC-401-2C-101217	SA_126-2mm	EPA6010	5	mg/kg	Manganese	598.78	ht
IC-401-2C-101217	SA_126-150um	EPA6010	4	mg/kg	Nickel	16.72	ht
IC-401-2C-101217	SA_126-2mm	EPA6010	5	mg/kg	Nickel	14.25	ht
IC-401-2C-101217	SA_126-150um	EPA6010	4	mg/kg	Phosphorus	2193.05	ht
IC-401-2C-101217	SA_126-2mm	EPA6010	5	mg/kg	Phosphorus	1317.35	ht
IC-401-2C-101217	SA_126-150um	EPA6010	4	mg/kg	Potassium	1915.06	crm ht
IC-401-2C-101217	SA_126-2mm	EPA6010	5	mg/kg	Potassium	1516.58	ht
IC-401-2C-101217	SA_126-150um	EPA6010	4	mg/kg	Selenium	4.01	rl ht
IC-401-2C-101217	SA_126-2mm	EPA6010	5	mg/kg	Selenium	1.16	rl ht
				<u> </u>			MDL
IC-401-2C-101217	SA_126-150um	EPA6010	4	mg/kg	Silver	0.20	ht
							MDL
IC-401-2C-101217	SA_126-2mm	EPA6010	5	mg/kg	Silver	0.20	ht
IC-401-2C-101217	SA_126-150um	EPA6010	4	mg/kg	Sodium	511.94	ht



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC-401-2C-101217	SA_126-2mm	EPA6010	5	mg/kg	Sodium	257.94	ht
							blk rl
IC-401-2C-101217	SA_126-150um	EPA6010	4	mg/kg	Thallium	1.20	ht
IC-401-2C-101217	SA_126-2mm	EPA6010	5	mg/kg	Thallium	0.87	rl ht
IC-401-2C-101217	SA_126-2mm	EPA6010	5	mg/kg	Vanadium	68.02	ht
IC-401-2C-101217	SA_126-150um	EPA6010	4	mg/kg	Vanadium	66.98	ht
IC-401-2C-101217	SA_126-150um	EPA6010	4	mg/kg	Zinc	820.04	ht
IC-401-2C-101217	SA_126-2mm	EPA6010	5	mg/kg	Zinc	450.76	ht
IC-401-2C-101217	SA_126-2mm	EPA_300.0	1	mg/kg	Chloride	29.10	ht
IC-401-2C-101217	SA_126-2mm	EPA_300.0	1	mg/kg	Sulfate	74.07	ht
IC-401-2C-101217	SA_126-bulk	D422	1	%	Fines	3.82	
IC-401-2C-101217	SA_126-bulk	D422	1	%	Gravel	42.72	
IC-401-2C-101217	SA_126-bulk	D422	1	%	Sand	75.70	
IC-401-2C-101217	SA_126-bulk	D422	1	%	Silt	20.48	
IC-401-2C-101217	SA_126-150um	Bioaccess2.5pH	2	%	Arsenic	6.83	
IC-401-2C-101217	SA_126-150um	Bioaccess2.5pH	2	%	Lead	36.06	
IC-401-2C-101217	SA_126-150um	Bioaccess1.5pH	2	%	Arsenic	16.72	
IC-401-2C-101217	SA_126-150um	Bioaccess1.5pH	2	%	Lead	68.93	
IC-401-2C-101217	SA_126-2mm	NELSON82	2	%	Carbon_total	6.59	ht
IC-401-2C-101217	SA_126-2mm	BREMNER82	2	%	Nitrogen_total	0.30	ht
IC-401-2D-101217	SA_127-bulk	SM2510B	1	mS/m	Conductivity	11.60	ht
IC-401-2D-101217	SA_127-bulk	рН	1		pН	4.55	ht
IC-401-2D-101217	SA_127-150um	EPA6010_MEHLICH3	10	mg/kg	Lead	300.26	
IC-401-2D-101217	SA_127-150um	EPA6010_MEHLICH3	10	mg/kg	Phosphorus	63.70	
IC-401-2D-101217	SA_127-150um	EPA6010_9200Bio2.5	2	mg/kg	Arsenic	6.45	
IC-401-2D-101217	SA_127-150um	EPA6010_9200Bio2.5	2	mg/kg	Lead	473.73	
IC-401-2D-101217	SA_127-150um	EPA6010_9200Bio1.5	2	mg/kg	Arsenic	16.40	
IC-401-2D-101217	SA_127-150um	EPA6010_9200Bio1.5	2	mg/kg	Lead	915.89	
IC-401-2D-101217	SA_127-150um	EPA6010	4	mg/kg	Aluminum	24989.18	ht
IC-401-2D-101217	SA_127-2mm	EPA6010	5	mg/kg	Aluminum	15541.75	crm ht
IC-401-2D-101217	SA_127-150um	EPA6010	4	mg/kg	Antimony	34.22	ht



Appendix C
Detailed Incremental Composite Sample Results SWEL – Soil Water Environmental Lab

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC-401-2D-101217	SA_127-2mm	EPA6010	5	mg/kg	Antimony	29.69	ht
IC-401-2D-101217	SA_127-150um	EPA6010	4	mg/kg	Arsenic	87.80	ht
IC-401-2D-101217	SA_127-2mm	EPA6010	5	mg/kg	Arsenic	47.53	ht
IC-401-2D-101217	SA_127-150um	EPA6010	4	mg/kg	Barium	227.16	ht
IC-401-2D-101217	SA_127-2mm	EPA6010	5	mg/kg	Barium	116.04	ht
							MDL
IC-401-2D-101217	SA_127-2mm	EPA6010	5	mg/kg	Beryllium	0.00	crm ht
IC-401-2D-101217	SA_127-150um	EPA6010	4	mg/kg	Beryllium	0.81	crm rl ht
IC-401-2D-101217	SA 127-150um	EPA6010	4	mg/kg	Cadmium	22.36	ht
IC-401-2D-101217	SA_127-2mm	EPA6010	5	mg/kg	Cadmium	12.69	ht
IC-401-2D-101217	SA_127-150um	EPA6010	4	mg/kg	Calcium	4622.28	ht
IC-401-2D-101217	SA 127-2mm	EPA6010	5	mg/kg	Calcium	3730.48	ht
IC-401-2D-101217	SA_127-150um	EPA6010	4	mg/kg	Chromium	35.97	ht
10 101 22 10121,	D11_12 / 10 0 0 111	21110010				00.57	dup
IC-401-2D-101217	SA_127-2mm	EPA6010	5	mg/kg	Chromium	29.83	ht
IC-401-2D-101217	SA_127-150um	EPA6010	4	mg/kg	Cobalt	8.23	ht
IC-401-2D-101217	SA_127-2mm	EPA6010	5	mg/kg	Cobalt	5.76	ht
IC-401-2D-101217	SA_127-150um	EPA6010	4	mg/kg	Copper	67.99	ht
IC-401-2D-101217	SA_127-2mm	EPA6010	5	mg/kg	Copper	37.55	ht
IC-401-2D-101217	SA_127-150um	EPA6010	4	mg/kg	Iron	25628.83	ht
IC-401-2D-101217	SA_127-2mm	EPA6010	5	mg/kg	Iron	22982.84	ht
IC-401-2D-101217	SA_127-150um	EPA6010	4	mg/kg	Lead	1181.58	ht
IC-401-2D-101217	SA_127-2mm	EPA6010	5	mg/kg	Lead	779.81	ht
IC-401-2D-101217	SA_127-150um	EPA6010	4	mg/kg	Magnesium	2744.60	ht
							crm
IC-401-2D-101217	SA_127-2mm	EPA6010	5	mg/kg	Magnesium	2744.28	ht
IC-401-2D-101217	SA_127-150um	EPA6010	4	mg/kg	Manganese	979.26	ht
IC-401-2D-101217	SA_127-2mm	EPA6010	5	mg/kg	Manganese	557.00	ht
IC-401-2D-101217	SA_127-150um	EPA6010	4	mg/kg	Nickel	15.43	ht
IC-401-2D-101217	SA_127-2mm	EPA6010	5	mg/kg	Nickel	12.12	ht



Appendix C
Detailed Incremental Composite Sample Results SWEL - Soil Water Environmental Lab

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Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC-401-2D-101217	SA_127-150um	EPA6010	4	mg/kg	Phosphorus	2152.11	ht
IC-401-2D-101217	SA_127-2mm	EPA6010	5	mg/kg	Phosphorus	1239.29	ht
IC-401-2D-101217	SA_127-150um	EPA6010	4	mg/kg	Potassium	1995.08	crm ht
IC-401-2D-101217	SA_127-2mm	EPA6010	5	mg/kg	Potassium	1606.72	ht
IC-401-2D-101217	SA_127-150um	EPA6010	4	mg/kg	Selenium	3.84	rl ht
IC-401-2D-101217	SA_127-2mm	EPA6010	5	mg/kg	Selenium	1.22	rl ht
							MDL
IC-401-2D-101217	SA_127-150um	EPA6010	4	mg/kg	Silver	0.20	ht
							MDL
IC-401-2D-101217	SA_127-2mm	EPA6010	5	mg/kg	Silver	0.20	ht
IC-401-2D-101217	SA_127-150um	EPA6010	4	mg/kg	Sodium	542.96	ht
IC-401-2D-101217	SA_127-2mm	EPA6010	5	mg/kg	Sodium	240.78	ht
				_			blk rl
IC-401-2D-101217	SA_127-150um	EPA6010	4	mg/kg	Thallium	1.32	ht
IC-401-2D-101217	SA_127-2mm	EPA6010	5	mg/kg	Thallium	0.60	rl ht
IC-401-2D-101217	SA_127-150um	EPA6010	4	mg/kg	Vanadium	62.99	ht
IC-401-2D-101217	SA_127-2mm	EPA6010	5	mg/kg	Vanadium	57.74	ht
IC-401-2D-101217	SA_127-150um	EPA6010	4	mg/kg	Zinc	799.94	ht
IC-401-2D-101217	SA_127-2mm	EPA6010	5	mg/kg	Zinc	511.18	ht
IC-401-2D-101217	SA_127-2mm	EPA_300.0	1	mg/kg	Chloride	18.09	ht
IC-401-2D-101217	SA_127-2mm	EPA_300.0	1	mg/kg	Sulfate	57.92	ht
IC-401-2D-101217	SA_127-bulk	D422	1	%	Fines	4.52	
IC-401-2D-101217	SA_127-bulk	D422	1	%	Gravel	44.30	
IC-401-2D-101217	SA_127-bulk	D422	1	%	Sand	70.40	
IC-401-2D-101217	SA_127-bulk	D422	1	%	Silt	25.08	
IC-401-2D-101217	SA_127-150um	Bioaccess2.5pH	2	%	Arsenic	7.35	
IC-401-2D-101217	SA_127-150um	Bioaccess2.5pH	2	%	Lead	40.09	
IC-401-2D-101217	SA_127-150um	Bioaccess1.5pH	2	%	Arsenic	18.68	
IC-401-2D-101217	SA_127-150um	Bioaccess1.5pH	2	%	Lead	77.51	
IC-401-2D-101217	SA_127-2mm	NELSON82	2	%	Carbon_total	8.02	ht
IC-401-2D-101217	_				_		



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC-258-3A-101717	SA_128-bulk	SM2510B	1	mS/m	Conductivity	7.90	ht
IC-258-3A-101717	SA_128-bulk	рН	1		рН	5.40	ht
IC-258-3A-101717	SA_128-150um	EPA6010_MEHLICH3	10	mg/kg	Lead	106.44	
IC-258-3A-101717	SA_128-150um	EPA6010_MEHLICH3	10	mg/kg	Phosphorus	28.68	
IC-258-3A-101717	SA_128-150um	EPA6010_9200Bio2.5	2	mg/kg	Arsenic	0.74	rl
IC-258-3A-101717	SA_128-150um	EPA6010_9200Bio2.5	2	mg/kg	Lead	111.03	
IC-258-3A-101717	SA_128-150um	EPA6010_9200Bio1.5	2	mg/kg	Arsenic	3.22	
IC-258-3A-101717	SA_128-150um	EPA6010_9200Bio1.5	2	mg/kg	Lead	289.86	
IC-258-3A-101717	SA_128-150um	EPA6010	4	mg/kg	Aluminum	25920.09	ht
IC-258-3A-101717	SA_128-2mm	EPA6010	5	mg/kg	Aluminum	14559.18	crm ht
IC-258-3A-101717	SA_128-150um	EPA6010	4	mg/kg	Antimony	14.03	ht
IC-258-3A-101717	SA_128-2mm	EPA6010	5	mg/kg	Antimony	4.92	rl ht
IC-258-3A-101717	SA_128-150um	EPA6010	4	mg/kg	Arsenic	37.29	ht
IC-258-3A-101717	SA_128-2mm	EPA6010	5	mg/kg	Arsenic	12.69	ht
IC-258-3A-101717	SA_128-150um	EPA6010	4	mg/kg	Barium	275.94	ht
IC-258-3A-101717	SA_128-2mm	EPA6010	5	mg/kg	Barium	113.38	ht
							crm rl
IC-258-3A-101717	SA_128-150um	EPA6010	4	mg/kg	Beryllium	0.86	ht
IC 250 2 A 101717	CA 120 2	EDA (010	_		D a my 11:	0.17	crm rl
IC-258-3A-101717 IC-258-3A-101717	SA_128-2mm	EPA6010 EPA6010	5 4	mg/kg	Beryllium Cadmium	0.17	ht
	SA_128-150um			mg/kg		<u> </u>	ht
IC-258-3A-101717	SA_128-2mm	EPA6010	5	mg/kg	Cadmium	3.58	ht
IC-258-3A-101717	SA_128-150um	EPA6010	5	mg/kg	Calcium Calcium	6185.25 3988.51	ht
IC-258-3A-101717	SA_128-2mm	EPA6010	3	mg/kg	Calcium	3988.31	ht dup
IC-258-3A-101717	SA_128-2mm	EPA6010	5	mg/kg	Chromium	31.93	ht
IC-258-3A-101717	SA_128-150um	EPA6010	4	mg/kg	Chromium	20.92	ht
IC-258-3A-101717	SA_128-150um	EPA6010	4	mg/kg	Cobalt	7.95	ht
IC-258-3A-101717	SA_128-2mm	EPA6010	5	mg/kg	Cobalt	4.86	ht
IC-258-3A-101717	SA_128-150um	EPA6010	4	mg/kg	Copper	48.07	ht
IC-258-3A-101717	SA_128-2mm	EPA6010	5	mg/kg	Copper	16.63	ht



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC-258-3A-101717	SA_128-150um	EPA6010	4	mg/kg	Iron	19617.15	ht
IC-258-3A-101717	SA_128-2mm	EPA6010	5	mg/kg	Iron	12784.47	ht
IC-258-3A-101717	SA_128-150um	EPA6010	4	mg/kg	Lead	419.36	ht
IC-258-3A-101717	SA_128-2mm	EPA6010	5	mg/kg	Lead	132.65	ht
							crm
IC-258-3A-101717	SA_128-2mm	EPA6010	5	mg/kg	Magnesium	2850.48	ht
IC-258-3A-101717	SA_128-150um	EPA6010	4	mg/kg	Magnesium	2501.69	ht
IC-258-3A-101717	SA_128-150um	EPA6010	4	mg/kg	Manganese	858.58	ht
IC-258-3A-101717	SA_128-2mm	EPA6010	5	mg/kg	Manganese	383.97	ht
IC-258-3A-101717	SA_128-150um	EPA6010	4	mg/kg	Nickel	13.73	ht
IC-258-3A-101717	SA_128-2mm	EPA6010	5	mg/kg	Nickel	9.52	ht
IC-258-3A-101717	SA_128-150um	EPA6010	4	mg/kg	Phosphorus	2006.84	ht
IC-258-3A-101717	SA_128-2mm	EPA6010	5	mg/kg	Phosphorus	1010.52	ht
IC-258-3A-101717	SA_128-150um	EPA6010	4	mg/kg	Potassium	1977.33	crm ht
IC-258-3A-101717	SA_128-2mm	EPA6010	5	mg/kg	Potassium	1362.21	ht
IC-258-3A-101717	SA_128-2mm	EPA6010	5	mg/kg	Selenium	0.70	ht
IC-258-3A-101717	SA_128-150um	EPA6010	4	mg/kg	Selenium	2.81	rl ht
							MDL
IC-258-3A-101717	SA_128-150um	EPA6010	4	mg/kg	Silver	0.20	ht
10.050.04.101515	G	FD 4 6040	_	a	a 11	0.00	MDL
IC-258-3A-101717	SA_128-2mm	EPA6010	5	mg/kg	Silver	0.20	ht
IC-258-3A-101717	SA_128-150um	EPA6010	4	mg/kg	Sodium	602.62	ht
IC-258-3A-101717	SA_128-2mm	EPA6010	5	mg/kg	Sodium	264.71	ht
IC 259 2 A 101717	CA 120 150	EPA6010	4	m a/Ira	Thallium	0.83	blk rl ht
IC-258-3A-101717	SA_128-150um		4	mg/kg			
IC-258-3A-101717	SA_128-2mm	EPA 6010	5	mg/kg	Thallium	0.47	rl ht
IC-258-3A-101717	SA_128-150um	EPA6010	4	mg/kg	Vanadium	45.87	ht
IC-258-3A-101717	SA_128-2mm	EPA6010	5	mg/kg	Vanadium	29.95	ht
IC-258-3A-101717	SA_128-150um	EPA6010	4	mg/kg	Zinc	474.32	ht
IC-258-3A-101717	SA_128-2mm	EPA6010	5	mg/kg	Zinc	173.57	ht
IC-258-3A-101717	SA_128-2mm	EPA_300.0	1	mg/kg	Chloride	16.85	ht



IC-258-3B-101717

SA 129-2mm

Appendix C

Detailed Incremental Composite Sample Results SWEL - Soil Water Environmental Lab d labresult.method code Sample ID d labresult.analyte Analysis ID Batch d labresult.units value flags IC-258-3A-101717 SA 128-2mm EPA_300.0 mg/kg Sulfate 49.00 ht 2.93 IC-258-3A-101717 SA 128-bulk D422 % Fines % 3.30 IC-258-3A-101717 SA 128-bulk D422 Gravel % IC-258-3A-101717 SA 128-bulk 81.30 D422 1 Sand % IC-258-3A-101717 SA 128-bulk D422 1 Silt 15.77 IC-258-3A-101717 SA 128-150um Bioaccess2.5pH 2 % 1.99 Arsenic SA 128-150um 2 % 26.48 IC-258-3A-101717 Bioaccess2.5pH Lead 2 % IC-258-3A-101717 SA 128-150um Bioaccess1.5pH Arsenic 8.63 rl IC-258-3A-101717 Bioaccess1.5pH 2 % SA 128-150um Lead 69.12 % IC-258-3A-101717 SA 128-2mm NELSON82 2 Carbon total 2.83 ht IC-258-3A-101717 SA 128-2mm BREMNER82 2 % Nitrogen total 0.18 ht IC-258-3B-101717 mS/m Conductivity SA 129-bulk SM2510B 9.62 ht рH 5.31 IC-258-3B-101717 SA 129-bulk рH ht IC-258-3B-101717 EPA6010 MEHLICH3 11 127.57 SA 129-150um mg/kg Lead IC-258-3B-101717 SA 129-150um EPA6010 MEHLICH3 11 mg/kg Phosphorus 90.48 2 Arsenic IC-258-3B-101717 SA 129-150um EPA6010 9200Bio2.5 mg/kg 1.04 IC-258-3B-101717 SA 129-150um EPA6010 9200Bio2.5 2 Lead 134.17 mg/kg SA 129-150um EPA6010 9200Bio1.5 2 3.26 IC-258-3B-101717 mg/kg Arsenic SA 129-150um EPA6010 9200Bio1.5 2 345.74 IC-258-3B-101717 mg/kg Lead SA 129-150um EPA6010 4 22668.90 mg/kg IC-258-3B-101717 Aluminum ht IC-258-3B-101717 SA 129-2mm EPA6010 5 mg/kg Aluminum 10649.40 crm ht SA 129-150um 4 mg/kg Antimony IC-258-3B-101717 EPA6010 15.12 ht IC-258-3B-101717 SA 129-2mm EPA6010 5 5.40 ht mg/kg Antimony IC-258-3B-101717 SA 129-150um EPA6010 4 36.73 mg/kg Arsenic ht IC-258-3B-101717 SA 129-2mm EPA6010 5 mg/kg Arsenic 12.55 ht IC-258-3B-101717 SA 129-150um EPA6010 4 Barium 261.43 ht mg/kg 5 IC-258-3B-101717 SA_129-2mm EPA6010 Barium 82.40 ht mg/kg crm rl Beryllium IC-258-3B-101717 SA 129-150um EPA6010 4 mg/kg 0.79 ht crm rl

5

mg/kg

EPA6010

Beryllium

0.18

ht



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC-258-3B-101717	SA_129-150um	EPA6010	4	mg/kg	Cadmium	13.98	ht
IC-258-3B-101717	SA_129-2mm	EPA6010	5	mg/kg	Cadmium	3.90	ht
IC-258-3B-101717	SA_129-150um	EPA6010	4	mg/kg	Calcium	6650.16	ht
IC-258-3B-101717	SA_129-2mm	EPA6010	5	mg/kg	Calcium	3338.13	ht
IC-258-3B-101717	SA_129-150um	EPA6010	4	mg/kg	Chromium	22.85	ht
							dup
IC-258-3B-101717	SA_129-2mm	EPA6010	5	mg/kg	Chromium	15.40	ht
IC-258-3B-101717	SA_129-150um	EPA6010	4	mg/kg	Cobalt	7.52	ht
IC-258-3B-101717	SA_129-2mm	EPA6010	5	mg/kg	Cobalt	3.95	ht
IC-258-3B-101717	SA_129-150um	EPA6010	4	mg/kg	Copper	50.18	ht
IC-258-3B-101717	SA_129-2mm	EPA6010	5	mg/kg	Copper	14.97	ht
IC-258-3B-101717	SA_129-150um	EPA6010	4	mg/kg	Iron	19745.76	ht
IC-258-3B-101717	SA_129-2mm	EPA6010	5	mg/kg	Iron	11358.58	ht
IC-258-3B-101717	SA_129-150um	EPA6010	4	mg/kg	Lead	546.84	ht
IC-258-3B-101717	SA_129-2mm	EPA6010	5	mg/kg	Lead	153.60	ht
IC-258-3B-101717	SA_129-150um	EPA6010	4	mg/kg	Magnesium	2843.34	ht
							crm
IC-258-3B-101717	SA_129-2mm	EPA6010	5	mg/kg	Magnesium	2420.35	ht
IC-258-3B-101717	SA_129-150um	EPA6010	4	mg/kg	Manganese	906.80	ht
IC-258-3B-101717	SA_129-2mm	EPA6010	5	mg/kg	Manganese	322.42	ht
IC-258-3B-101717	SA_129-150um	EPA6010	4	mg/kg	Nickel	13.19	ht
IC-258-3B-101717	SA_129-2mm	EPA6010	5	mg/kg	Nickel	8.63	ht
IC-258-3B-101717	SA_129-150um	EPA6010	4	mg/kg	Phosphorus	2433.40	ht
IC-258-3B-101717	SA_129-2mm	EPA6010	5	mg/kg	Phosphorus	962.15	ht
IC-258-3B-101717	SA_129-150um	EPA6010	4	mg/kg	Potassium	2010.44	crm ht
IC-258-3B-101717	SA_129-2mm	EPA6010	5	mg/kg	Potassium	1126.48	ht
IC-258-3B-101717	SA_129-2mm	EPA6010	5	mg/kg	Selenium	0.70	ht
IC-258-3B-101717	SA_129-150um	EPA6010	4	mg/kg	Selenium	3.20	rl ht
							MDL
IC-258-3B-101717	SA_129-150um	EPA6010	4	mg/kg	Silver	0.20	ht



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
							MDL
IC-258-3B-101717	SA_129-2mm	EPA6010	5	mg/kg	Silver	0.20	ht
IC-258-3B-101717	SA_129-150um	EPA6010	4	mg/kg	Sodium	503.19	ht
IC-258-3B-101717	SA_129-2mm	EPA6010	5	mg/kg	Sodium	165.61	ht
				_			blk rl
IC-258-3B-101717	SA_129-150um	EPA6010	4	mg/kg	Thallium	0.99	ht
IC-258-3B-101717	SA_129-2mm	EPA6010	5	mg/kg	Thallium	0.37	rl ht
IC-258-3B-101717	SA_129-150um	EPA6010	4	mg/kg	Vanadium	46.70	ht
IC-258-3B-101717	SA_129-2mm	EPA6010	5	mg/kg	Vanadium	25.42	ht
IC-258-3B-101717	SA_129-150um	EPA6010	4	mg/kg	Zinc	620.22	ht
IC-258-3B-101717	SA_129-2mm	EPA6010	5	mg/kg	Zinc	194.03	ht
IC-258-3B-101717	SA_129-2mm	EPA_300.0	1	mg/kg	Chloride	17.49	ht
IC-258-3B-101717	SA_129-2mm	EPA_300.0	1	mg/kg	Sulfate	56.99	ht
IC-258-3B-101717	SA_129-bulk	D422	1	%	Fines	2.93	
IC-258-3B-101717	SA_129-bulk	D422	1	%	Gravel	1.34	
IC-258-3B-101717	SA_129-bulk	D422	1	%	Sand	84.20	
IC-258-3B-101717	SA_129-bulk	D422	1	%	Silt	12.87	
IC-258-3B-101717	SA_129-150um	Bioaccess2.5pH	2	%	Arsenic	2.82	
IC-258-3B-101717	SA_129-150um	Bioaccess2.5pH	2	%	Lead	24.54	
IC-258-3B-101717	SA_129-150um	Bioaccess1.5pH	2	%	Arsenic	8.88	
IC-258-3B-101717	SA_129-150um	Bioaccess1.5pH	2	%	Lead	63.22	
IC-258-3B-101717	SA_129-2mm	NELSON82	2	%	Carbon_total	2.32	ht
IC-258-3B-101717	SA_129-2mm	BREMNER82	2	%	Nitrogen_total	0.14	ht
IC-258-3C-101717	SA_130-bulk	SM2510B	1	mS/m	Conductivity	15.03	ht
IC-258-3C-101717	SA_130-bulk	рН	1		рН	5.00	ht
IC-258-3C-101717	SA_130-150um	EPA6010_MEHLICH3	11	mg/kg	Lead	214.73	
IC-258-3C-101717	SA_130-150um	EPA6010_MEHLICH3	11	mg/kg	Phosphorus	128.52	
IC-258-3C-101717	SA_130-150um	EPA6010_9200Bio2.5	2	mg/kg	Arsenic	1.29	
IC-258-3C-101717	SA_130-150um	EPA6010_9200Bio2.5	2	mg/kg	Lead	203.00	
IC-258-3C-101717	SA_130-150um	EPA6010_9200Bio1.5	2	mg/kg	Arsenic	4.33	
IC-258-3C-101717	SA_130-150um	EPA6010_9200Bio1.5	2	mg/kg	Lead	480.49	



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC-258-3C-101717	SA_130-150um	EPA6010	4	mg/kg	Aluminum	19802.80	ht
IC-258-3C-101717	SA_130-2mm	EPA6010	5	mg/kg	Aluminum	11328.32	crm ht
IC-258-3C-101717	SA_130-150um	EPA6010	4	mg/kg	Antimony	14.02	ht
IC-258-3C-101717	SA_130-2mm	EPA6010	5	mg/kg	Antimony	7.00	ht
IC-258-3C-101717	SA_130-150um	EPA6010	4	mg/kg	Arsenic	33.26	ht
IC-258-3C-101717	SA_130-2mm	EPA6010	5	mg/kg	Arsenic	14.95	ht
IC-258-3C-101717	SA_130-150um	EPA6010	4	mg/kg	Barium	255.46	ht
IC-258-3C-101717	SA_130-2mm	EPA6010	5	mg/kg	Barium	109.59	ht
							crm rl
IC-258-3C-101717	SA_130-150um	EPA6010	4	mg/kg	Beryllium	0.66	ht
IC 250 2C 101717	CA 120 2	EDA (010	_		D11'	0.05	crm rl
IC-258-3C-101717	SA_130-2mm	EPA 6010	5	mg/kg	Beryllium	0.05	ht
IC-258-3C-101717	SA_130-150um	EPA 6010	4	mg/kg	Cadmium	14.70	ht
IC-258-3C-101717	SA_130-2mm	EPA6010	5	mg/kg	Cadmium	6.42	ht
IC-258-3C-101717	SA_130-150um	EPA6010	4	mg/kg	Calcium	7502.99	ht
IC-258-3C-101717	SA_130-2mm	EPA6010	5	mg/kg	Calcium	4379.77	ht
IC-258-3C-101717	SA_130-2mm	EPA6010	5	mg/kg	Chromium	22.04	dup ht
IC-258-3C-101717	SA_130-211111 SA 130-150um	EPA6010	4	mg/kg	Chromium	19.12	ht
IC-258-3C-101717	SA_130-150um	EPA6010 EPA6010	4		Cobalt	7.00	ht
IC-258-3C-101717	SA_130-130um	EPA6010 EPA6010	5	mg/kg	Cobalt	4.42	ht
IC-258-3C-101717	SA_130-2mm SA_130-150um	EPA6010 EPA6010	4	mg/kg		4.42	
IC-258-3C-101717	SA_130-130um SA 130-2mm	EPA6010 EPA6010	5	mg/kg	Copper	19.13	ht ht
	_			mg/kg	Copper		
IC-258-3C-101717	SA_130-150um	EPA 6010	4	mg/kg	Iron	17126.13	ht
IC-258-3C-101717	SA_130-2mm	EPA6010	5	mg/kg	Iron	12784.53	ht
IC-258-3C-101717	SA_130-150um	EPA6010	4	mg/kg	Lead	650.83	ht
IC-258-3C-101717	SA_130-2mm	EPA6010	5	mg/kg	Lead	284.03	ht
IC-258-3C-101717	SA_130-150um	EPA6010	4	mg/kg	Magnesium	3068.66	ht
IC-258-3C-101717	SA_130-2mm	EPA6010	5	mg/kg	Magnesium	2488.46	crm ht
	_		4			827.26	
IC-258-3C-101717	SA_130-150um	EPA6010	4	mg/kg	Manganese	827.20	ht



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC-258-3C-101717	SA_130-2mm	EPA6010	5	mg/kg	Manganese	397.27	ht
IC-258-3C-101717	SA_130-150um	EPA6010	4	mg/kg	Nickel	12.30	ht
IC-258-3C-101717	SA_130-2mm	EPA6010	5	mg/kg	Nickel	9.02	ht
IC-258-3C-101717	SA_130-150um	EPA6010	4	mg/kg	Phosphorus	2317.25	ht
IC-258-3C-101717	SA_130-2mm	EPA6010	5	mg/kg	Phosphorus	1108.29	ht
IC-258-3C-101717	SA_130-150um	EPA6010	4	mg/kg	Potassium	1920.70	crm ht
IC-258-3C-101717	SA_130-2mm	EPA6010	5	mg/kg	Potassium	1302.82	ht
IC-258-3C-101717	SA_130-150um	EPA6010	4	mg/kg	Selenium	2.72	rl ht
IC-258-3C-101717	SA_130-2mm	EPA6010	5	mg/kg	Selenium	0.84	rl ht
							MDL
IC-258-3C-101717	SA_130-150um	EPA6010	4	mg/kg	Silver	0.20	ht
IC 259 2C 101717	SA 120 2	EDA (010	_		Silver	0.20	MDL
IC-258-3C-101717	SA_130-2mm	EPA6010	5	mg/kg		0.20	ht
IC-258-3C-101717	SA_130-150um	EPA6010	4	mg/kg	Sodium	486.68	ht
IC-258-3C-101717	SA_130-2mm	EPA6010	5	mg/kg	Sodium	208.87	ht blk rl
IC-258-3C-101717	SA_130-150um	EPA6010	4	mg/kg	Thallium	1.23	ht
IC-258-3C-101717	SA 130-2mm	EPA6010	5	mg/kg	Thallium	0.39	rl ht
IC-258-3C-101717	SA_130-150um	EPA6010	4	mg/kg	Vanadium	39.70	ht
IC-258-3C-101717	SA_130-2mm	EPA6010	5	mg/kg	Vanadium	29.09	ht
IC-258-3C-101717	SA_130-150um	EPA6010	4	mg/kg	Zinc	643.45	ht
IC-258-3C-101717	SA_130-2mm	EPA6010	5	mg/kg	Zinc	293.31	ht
IC-258-3C-101717	SA_130-2mm	EPA_300.0	1	mg/kg	Chloride	17.91	ht
IC-258-3C-101717	SA_130-2mm	EPA_300.0	1	mg/kg	Sulfate	56.93	ht
IC-258-3C-101717	SA_130-bulk	D422	1	%	Fines	2.87	
IC-258-3C-101717	SA_130-bulk	D422	1	%	Gravel	2.81	
IC-258-3C-101717	SA_130-bulk	D422	1	%	Sand	79.50	
IC-258-3C-101717	SA_130-bulk	D422	1	%	Silt	17.63	
IC-258-3C-101717	SA_130-150um	Bioaccess2.5pH	2	%	Arsenic	3.87	
IC-258-3C-101717	SA_130-150um	Bioaccess2.5pH	2	%	Lead	31.19	
IC-258-3C-101717	SA_130-150um	Bioaccess1.5pH	2	%	Arsenic	13.01	_



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC-258-3C-101717	SA_130-150um	Bioaccess1.5pH	2	%	Lead	73.83	
IC-258-3C-101717	SA_130-2mm	NELSON82	2	%	Carbon_total	4.72	ht
IC-258-3C-101717	SA_130-2mm	BREMNER82	2	%	Nitrogen_total	0.26	ht
IC-258-3D-101717	SA_131-bulk	SM2510B	1	mS/m	Conductivity	11.26	ht
IC-258-3D-101717	SA_131-bulk	pН	1		pН	5.35	ht
IC-258-3D-101717	SA_131-150um	EPA6010_MEHLICH3	11	mg/kg	Lead	181.85	
IC-258-3D-101717	SA_131-150um	EPA6010_MEHLICH3	11	mg/kg	Phosphorus	117.18	
IC-258-3D-101717	SA_131-150um	EPA6010_9200Bio2.5	3	mg/kg	Arsenic	1.51	
IC-258-3D-101717	SA_131-150um	EPA6010_9200Bio2.5	3	mg/kg	Lead	190.14	
IC-258-3D-101717	SA_131-150um	EPA6010_9200Bio1.5	3	mg/kg	Arsenic	5.29	
IC-258-3D-101717	SA_131-150um	EPA6010_9200Bio1.5	3	mg/kg	Lead	465.66	
IC-258-3D-101717	SA_131-150um	EPA6010	4	mg/kg	Aluminum	20042.64	ht
IC-258-3D-101717	SA_131-2mm	EPA6010	5	mg/kg	Aluminum	11122.62	crm ht
IC-258-3D-101717	SA_131-150um	EPA6010	4	mg/kg	Antimony	16.60	ht
IC-258-3D-101717	SA_131-2mm	EPA6010	5	mg/kg	Antimony	7.18	ht
IC-258-3D-101717	SA_131-150um	EPA6010	4	mg/kg	Arsenic	42.18	ht
IC-258-3D-101717	SA_131-2mm	EPA6010	5	mg/kg	Arsenic	17.40	ht
IC-258-3D-101717	SA_131-150um	EPA6010	4	mg/kg	Barium	252.31	ht
IC-258-3D-101717	SA_131-2mm	EPA6010	5	mg/kg	Barium	97.19	ht
IC-258-3D-101717	SA_131-2mm	EPA6010	5	mg/kg	Beryllium	0.00	MDL crm ht
IC-258-3D-101717	SA_131-150um	EPA6010	4	mg/kg	Beryllium	0.73	crm rl ht
IC-258-3D-101717	SA_131-150um	EPA6010	4	mg/kg	Cadmium	15.71	ht
IC-258-3D-101717	SA_131-2mm	EPA6010	5	mg/kg	Cadmium	5.88	ht
IC-258-3D-101717	SA_131-150um	EPA6010	4	mg/kg	Calcium	6673.17	ht
IC-258-3D-101717	SA_131-2mm	EPA6010	5	mg/kg	Calcium	3887.79	ht
IC-258-3D-101717	SA_131-150um	EPA6010	4	mg/kg	Chromium	21.93	ht
							dup
IC-258-3D-101717	SA_131-2mm	EPA6010	5	mg/kg	Chromium	16.28	ht
IC-258-3D-101717	SA_131-150um	EPA6010	4	mg/kg	Cobalt	7.18	ht



IC-258-3D-101717

IC-258-3D-101717

IC-258-3D-101717

SA 131-2mm

SA 131-150um

SA 131-2mm

Appendix C

Detailed Incremental Composite Sample Results SWEL - Soil Water Environmental Lab d labresult.method code Sample ID Analysis ID d labresult.analyte Batch d labresult.units value flags IC-258-3D-101717 SA 131-2mm 5 4.38 EPA6010 mg/kg Cobalt ht IC-258-3D-101717 53.97 SA 131-150um EPA6010 4 mg/kg Copper ht 5 IC-258-3D-101717 SA 131-2mm EPA6010 mg/kg Copper 19.15 ht 19788.72 IC-258-3D-101717 SA_131-150um EPA6010 4 Iron mg/kg ht IC-258-3D-101717 SA 131-2mm 12420.92 EPA6010 5 mg/kg Iron ht IC-258-3D-101717 SA 131-150um EPA6010 4 mg/kg Lead 672.23 ht IC-258-3D-101717 SA 131-2mm EPA6010 5 Lead 262.00 mg/kg ht IC-258-3D-101717 SA 131-150um EPA6010 4 mg/kg Magnesium 2809.15 ht crm IC-258-3D-101717 SA_131-2mm EPA6010 5 mg/kg Magnesium 2302.96 ht IC-258-3D-101717 SA 131-150um EPA6010 828.53 ht 4 mg/kg Manganese IC-258-3D-101717 SA 131-2mm EPA6010 5 364.80 mg/kg Manganese ht IC-258-3D-101717 SA_131-150um EPA6010 4 Nickel 12.76 mg/kg ht IC-258-3D-101717 SA 131-2mm EPA6010 5 mg/kg Nickel 8.33 ht IC-258-3D-101717 SA 131-150um 4 mg/kg **Phosphorus** 2281.59 EPA6010 ht 5 IC-258-3D-101717 SA 131-2mm EPA6010 mg/kg **Phosphorus** 1062.92 ht IC-258-3D-101717 1837.92 SA 131-150um EPA6010 4 mg/kg Potassium crm ht IC-258-3D-101717 SA 131-2mm EPA6010 5 mg/kg Potassium 1252.08 ht IC-258-3D-101717 SA 131-150um EPA6010 4 mg/kg Selenium 3.18 rl ht SA 131-2mm 5 Selenium IC-258-3D-101717 EPA6010 mg/kg 0.96 rl ht **MDL** ht IC-258-3D-101717 SA 131-150um EPA6010 4 mg/kg Silver 0.20 **MDL** SA 131-2mm Silver ht mg/kg 0.20 IC-258-3D-101717 EPA6010 5 Sodium 428.93 IC-258-3D-101717 SA 131-150um EPA6010 4 mg/kg ht IC-258-3D-101717 SA 131-2mm EPA6010 5 Sodium 198.37 mg/kg ht blk rl Thallium IC-258-3D-101717 SA 131-150um EPA6010 4 mg/kg 0.65 ht

5

4

5

mg/kg

mg/kg

mg/kg

Thallium

Vanadium

Vanadium

0.59

46.53

29.12

rl ht

ht

ht

EPA6010

EPA6010

EPA6010



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC-258-3D-101717	SA_131-150um	EPA6010	4	mg/kg	Zinc	616.91	ht
IC-258-3D-101717	SA_131-2mm	EPA6010	5	mg/kg	Zinc	252.05	ht
IC-258-3D-101717	SA_131-2mm	EPA_300.0	1	mg/kg	Chloride	18.52	ht
IC-258-3D-101717	SA_131-2mm	EPA_300.0	1	mg/kg	Sulfate	49.73	ht
IC-258-3D-101717	SA_131-bulk	D422	1	%	Fines	2.49	
IC-258-3D-101717	SA_131-bulk	D422	1	%	Gravel	2.03	
IC-258-3D-101717	SA_131-bulk	D422	1	%	Sand	84.70	
IC-258-3D-101717	SA_131-bulk	D422	1	%	Silt	12.81	
IC-258-3D-101717	SA_131-150um	Bioaccess2.5pH	3	%	Arsenic	3.59	
IC-258-3D-101717	SA_131-150um	Bioaccess2.5pH	3	%	Lead	28.29	
IC-258-3D-101717	SA_131-150um	Bioaccess1.5pH	3	%	Arsenic	12.53	
IC-258-3D-101717	SA_131-150um	Bioaccess1.5pH	3	%	Lead	69.27	
IC-258-3D-101717	SA_131-2mm	NELSON82	2	%	Carbon_total	3.65	ht
IC-258-3D-101717	SA_131-2mm	BREMNER82	2	%	Nitrogen_total	0.21	ht
IC-441-1A-101617	SA_132-bulk	SM2510B	1	mS/m	Conductivity	12.60	ht
IC-441-1A-101617	SA_132-bulk	рН	1		рН	5.85	ht
IC-441-1A-101617	SA_132-150um	EPA6010_MEHLICH3	11	mg/kg	Lead	186.45	
IC-441-1A-101617	SA_132-150um	EPA6010_MEHLICH3	11	mg/kg	Phosphorus	205.88	
IC-441-1A-101617	SA_132-150um	EPA6010_9200Bio2.5	3	mg/kg	Arsenic	3.10	
IC-441-1A-101617	SA_132-150um	EPA6010_9200Bio2.5	3	mg/kg	Lead	159.94	
IC-441-1A-101617	SA_132-150um	EPA6010_9200Bio1.5	3	mg/kg	Arsenic	8.21	
IC-441-1A-101617	SA_132-150um	EPA6010_9200Bio1.5	3	mg/kg	Lead	424.34	
IC-441-1A-101617	SA_132-150um	EPA6010	4	mg/kg	Aluminum	25266.55	ht
IC-441-1A-101617	SA_132-2mm	EPA6010	5	mg/kg	Aluminum	22504.51	crm ht
IC-441-1A-101617	SA_132-150um	EPA6010	4	mg/kg	Antimony	10.47	ht
IC-441-1A-101617	SA_132-2mm	EPA6010	5	mg/kg	Antimony	6.75	ht
IC-441-1A-101617	SA_132-150um	EPA6010	4	mg/kg	Arsenic	33.32	ht
IC-441-1A-101617	SA_132-2mm	EPA6010	5	mg/kg	Arsenic	17.58	ht
IC-441-1A-101617	SA_132-150um	EPA6010	4	mg/kg	Barium	337.87	ht
IC-441-1A-101617	SA_132-2mm	EPA6010	5	mg/kg	Barium	209.30	ht



Appendix C Detailed Incremental Composite Sample Results SWEL – Soil Water Environmental Lab

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
							MDL
IC-441-1A-101617	SA_132-2mm	EPA6010	5	mg/kg	Beryllium	0.00	crm ht
10 441 1 4 101 (17	G + 100 150	ED 4 6010	4	и	D 111	0.07	crm rl
IC-441-1A-101617	SA_132-150um	EPA6010	4	mg/kg	Beryllium	0.87	ht
IC-441-1A-101617	SA_132-150um	EPA6010	4	mg/kg	Cadmium	12.74	ht
IC-441-1A-101617	SA_132-2mm	EPA6010	5	mg/kg	Cadmium	6.75	ht
IC-441-1A-101617	SA_132-150um	EPA6010	4	mg/kg	Calcium	10586.38	ht
IC-441-1A-101617	SA_132-2mm	EPA6010	5	mg/kg	Calcium	8850.87	ht
IC-441-1A-101617	SA_132-2mm	EPA6010	5	mg/kg	Chromium	43.08	dup ht
IC-441-1A-101617	SA 132-150um	EPA6010	4	mg/kg	Chromium	35.77	ht
IC-441-1A-101617	SA_132-150um	EPA6010	4	mg/kg	Cobalt	11.14	ht
IC-441-1A-101617	SA_132-2mm	EPA6010	5	mg/kg	Cobalt	9.63	ht
IC-441-1A-101617	SA_132-150um	EPA6010	4	mg/kg	Copper	67.32	ht
IC-441-1A-101617	SA 132-2mm	EPA6010	5	mg/kg	Copper	37.30	ht
IC-441-1A-101617	SA_132-150um	EPA6010	4	mg/kg	Iron	22190.81	ht
IC-441-1A-101617	SA_132-2mm	EPA6010	5	mg/kg	Iron	21831.20	ht
IC-441-1A-101617	SA_132-150um	EPA6010	4	mg/kg	Lead	552.04	ht
IC-441-1A-101617	SA_132-2mm	EPA6010	5	mg/kg	Lead	275.73	ht
							crm
IC-441-1A-101617	SA_132-2mm	EPA6010	5	mg/kg	Magnesium	6122.65	ht
IC-441-1A-101617	SA_132-150um	EPA6010	4	mg/kg	Magnesium	4239.54	ht
IC-441-1A-101617	SA_132-150um	EPA6010	4	mg/kg	Manganese	1243.85	ht
IC-441-1A-101617	SA_132-2mm	EPA6010	5	mg/kg	Manganese	757.37	ht
IC-441-1A-101617	SA_132-2mm	EPA6010	5	mg/kg	Nickel	24.31	ht
IC-441-1A-101617	SA_132-150um	EPA6010	4	mg/kg	Nickel	23.29	ht
IC-441-1A-101617	SA_132-150um	EPA6010	4	mg/kg	Phosphorus	2843.38	ht
IC-441-1A-101617	SA_132-2mm	EPA6010	5	mg/kg	Phosphorus	1977.74	ht
IC-441-1A-101617	SA_132-2mm	EPA6010	5	mg/kg	Potassium	3790.10	ht
IC-441-1A-101617	SA_132-150um	EPA6010	4	mg/kg	Potassium	3474.77	crm ht
IC-441-1A-101617	SA_132-150um	EPA6010	4	mg/kg	Selenium	4.29	rl ht



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC-441-1A-101617	SA_132-2mm	EPA6010	5	mg/kg	Selenium	1.53	rl ht
							MDL
IC-441-1A-101617	SA_132-150um	EPA6010	4	mg/kg	Silver	0.20	ht
				_			MDL
IC-441-1A-101617	SA_132-2mm	EPA6010	5	mg/kg	Silver	0.20	ht
IC-441-1A-101617	SA_132-150um	EPA6010	4	mg/kg	Sodium	572.41	ht
IC-441-1A-101617	SA_132-2mm	EPA6010	5	mg/kg	Sodium	408.21	ht
70 111 11 101 17	a	77.1.404.0					blk rl
IC-441-1A-101617	SA_132-150um	EPA6010	4	mg/kg	Thallium	1.13	ht
IC-441-1A-101617	SA_132-2mm	EPA6010	5	mg/kg	Thallium	0.39	rl ht
IC-441-1A-101617	SA_132-150um	EPA6010	4	mg/kg	Vanadium	56.48	ht
IC-441-1A-101617	SA_132-2mm	EPA6010	5	mg/kg	Vanadium	56.25	ht
IC-441-1A-101617	SA_132-150um	EPA6010	4	mg/kg	Zinc	597.70	ht
IC-441-1A-101617	SA_132-2mm	EPA6010	5	mg/kg	Zinc	321.77	ht
IC-441-1A-101617	SA_132-2mm	EPA_300.0	1	mg/kg	Chloride	16.15	ht
IC-441-1A-101617	SA_132-2mm	EPA_300.0	1	mg/kg	Sulfate	30.00	RL ht
IC-441-1A-101617	SA_132-bulk	D422	1	%	Fines	3.95	
IC-441-1A-101617	SA_132-bulk	D422	1	%	Gravel	36.47	
IC-441-1A-101617	SA_132-bulk	D422	1	%	Sand	61.90	
IC-441-1A-101617	SA_132-bulk	D422	1	%	Silt	34.15	
IC-441-1A-101617	SA_132-150um	Bioaccess2.5pH	3	%	Arsenic	9.30	
IC-441-1A-101617	SA_132-150um	Bioaccess2.5pH	3	%	Lead	28.97	
IC-441-1A-101617	SA_132-150um	Bioaccess1.5pH	3	%	Arsenic	24.65	
IC-441-1A-101617	SA_132-150um	Bioaccess1.5pH	3	%	Lead	76.87	
IC-441-1A-101617	SA_132-2mm	NELSON82	2	%	Carbon_total	5.65	ht
IC-441-1A-101617	SA_132-2mm	BREMNER82	2	%	Nitrogen_total	0.31	ht
IC-441-1B-101617	SA_133-bulk	SM2510B	1	mS/m	Conductivity	9.28	ht
IC-441-1B-101617	SA_133-bulk	рН	1		рН	5.92	ht
IC-441-1B-101617	SA_133-150um	EPA6010_MEHLICH3	12	mg/kg	Lead	158.37	
IC-441-1B-101617	SA_133-150um	EPA6010_MEHLICH3	12	mg/kg	Phosphorus	124.89	
IC-441-1B-101617	SA_133-150um	EPA6010_9200Bio2.5	3	mg/kg	Arsenic	3.78	



IC-441-1B-101617

IC-441-1B-101617

IC-441-1B-101617

IC-441-1B-101617

IC-441-1B-101617

SA_133-2mm

SA 133-2mm

SA 133-150um

SA 133-150um

SA 133-2mm

Appendix C

59.37

21382.75

20867.69

556.40

485.07

ht

ht

ht

ht

ht

Copper

Iron

Iron

Lead

Lead

Detailed Incremental Composite Sample Results SWEL - Soil Water Environmental Lab d labresult.analyte Sample ID Analysis ID d labresult.method code Batch d labresult.units value flags IC-441-1B-101617 SA _133-150um EPA6010 9200Bio2.5 3 mg/kg Lead 160.05 3 9.74 IC-441-1B-101617 SA 133-150um EPA6010 9200Bio1.5 mg/kg Arsenic EPA6010 9200Bio1.5 3 IC-441-1B-101617 SA 133-150um mg/kg Lead 437.57 IC-441-1B-101617 SA_133-150um EPA6010 4 26893.41 mg/kg Aluminum ht SA 133-2mm 5 Aluminum 25983.35 IC-441-1B-101617 EPA6010 mg/kg crm ht IC-441-1B-101617 SA 133-2mm EPA6010 5 mg/kg Antimony 12.81 ht SA 133-150um EPA6010 4 Antimony IC-441-1B-101617 mg/kg 12.26 ht IC-441-1B-101617 SA 133-150um EPA6010 4 mg/kg Arsenic 40.76 ht IC-441-1B-101617 SA 133-2mm 5 Arsenic EPA6010 mg/kg 36.90 ht IC-441-1B-101617 SA 133-150um EPA6010 4 mg/kg Barium 308.28 ht IC-441-1B-101617 SA 133-2mm EPA6010 5 mg/kg Barium 222.05 ht MDL IC-441-1B-101617 SA 133-2mm EPA6010 Beryllium 5 mg/kg 0.00 crm ht crm rl Bervllium mg/kg IC-441-1B-101617 SA 133-150um EPA6010 4 0.85 ht Cadmium IC-441-1B-101617 SA 133-150um EPA6010 13.82 4 mg/kg ht 5 Cadmium IC-441-1B-101617 SA 133-2mm EPA6010 mg/kg 13.16 ht IC-441-1B-101617 SA 133-150um EPA6010 4 mg/kg Calcium 10439.35 ht Calcium IC-441-1B-101617 SA_133-2mm EPA6010 5 9720.75 mg/kg ht dup IC-441-1B-101617 SA 133-2mm EPA6010 5 mg/kg Chromium 36.12 ht IC-441-1B-101617 SA 133-150um EPA6010 4 mg/kg Chromium 32.71 ht IC-441-1B-101617 SA 133-2mm EPA6010 5 11.01 mg/kg Cobalt ht IC-441-1B-101617 Cobalt 10.67 SA 133-150um 4 mg/kg EPA6010 ht IC-441-1B-101617 SA 133-150um EPA6010 4 mg/kg Copper 69.43 ht

5

5

4

4

5

mg/kg

mg/kg

mg/kg

mg/kg

mg/kg

EPA6010

EPA6010

EPA6010

EPA6010

EPA6010



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
							crm
IC-441-1B-101617	SA_133-2mm	EPA6010	5	mg/kg	Magnesium	5472.95	ht
IC-441-1B-101617	SA_133-150um	EPA6010	4	mg/kg	Magnesium	3969.84	ht
IC-441-1B-101617	SA_133-150um	EPA6010	4	mg/kg	Manganese	1127.03	ht
IC-441-1B-101617	SA_133-2mm	EPA6010	5	mg/kg	Manganese	870.49	ht
IC-441-1B-101617	SA_133-2mm	EPA6010	5	mg/kg	Nickel	21.92	ht
IC-441-1B-101617	SA_133-150um	EPA6010	4	mg/kg	Nickel	20.84	ht
IC-441-1B-101617	SA_133-150um	EPA6010	4	mg/kg	Phosphorus	3372.99	ht
IC-441-1B-101617	SA_133-2mm	EPA6010	5	mg/kg	Phosphorus	2950.90	ht
IC-441-1B-101617	SA_133-2mm	EPA6010	5	mg/kg	Potassium	3361.37	ht
IC-441-1B-101617	SA_133-150um	EPA6010	4	mg/kg	Potassium	3122.08	crm ht
IC-441-1B-101617	SA_133-150um	EPA6010	4	mg/kg	Selenium	4.93	rl ht
IC-441-1B-101617	SA_133-2mm	EPA6010	5	mg/kg	Selenium	1.36	rl ht
							MDL
IC-441-1B-101617	SA_133-150um	EPA6010	4	mg/kg	Silver	0.20	ht
							MDL
IC-441-1B-101617	SA_133-2mm	EPA6010	5	mg/kg	Silver	0.20	ht
IC-441-1B-101617	SA_133-150um	EPA6010	4	mg/kg	Sodium	697.85	ht
IC-441-1B-101617	SA_133-2mm	EPA6010	5	mg/kg	Sodium	540.95	ht
IC-441-1B-101617	SA_133-2mm	EPA6010	5	mg/kg	Thallium	0.77	rl ht
				_			blk rl
IC-441-1B-101617	SA_133-150um	EPA6010	4	mg/kg	Thallium	0.65	ht
IC-441-1B-101617	SA_133-2mm	EPA6010	5	mg/kg	Vanadium	53.06	ht
IC-441-1B-101617	SA_133-150um	EPA6010	4	mg/kg	Vanadium	51.84	ht
IC-441-1B-101617	SA_133-150um	EPA6010	4	mg/kg	Zinc	738.48	ht
IC-441-1B-101617	SA_133-2mm	EPA6010	5	mg/kg	Zinc	719.37	ht
IC-441-1B-101617	SA_133-2mm	EPA_300.0	1	mg/kg	Chloride	15.93	ht
IC-441-1B-101617	SA_133-2mm	EPA_300.0	1	mg/kg	Sulfate	30.00	RL ht
IC-441-1B-101617	SA_133-bulk	D422	1	%	Fines	3.12	
IC-441-1B-101617	SA_133-bulk	D422	1	%	Gravel	38.09	
IC-441-1B-101617	SA_133-bulk	D422	1	%	Sand	57.60	



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC-441-1B-101617	SA_133-bulk	D422	1	%	Silt	39.28	
IC-441-1B-101617	SA_133-150um	Bioaccess2.5pH	3	%	Arsenic	9.26	
IC-441-1B-101617	SA_133-150um	Bioaccess2.5pH	3	%	Lead	28.76	
IC-441-1B-101617	SA_133-150um	Bioaccess1.5pH	3	%	Arsenic	23.90	
IC-441-1B-101617	SA_133-150um	Bioaccess1.5pH	3	%	Lead	78.64	
IC-441-1B-101617	SA_133-2mm	NELSON82	2	%	Carbon_total	7.90	ht
IC-441-1B-101617	SA_133-2mm	BREMNER82	2	%	Nitrogen_total	0.47	ht
IC-441-1C-101617	SA_134-bulk	SM2510B	1	mS/m	Conductivity	12.75	ht
IC-441-1C-101617	SA_134-bulk	рН	1		рН	6.16	ht
IC-441-1C-101617	SA_134-150um	EPA6010_MEHLICH3	12	mg/kg	Lead	190.99	
IC-441-1C-101617	SA_134-150um	EPA6010_MEHLICH3	12	mg/kg	Phosphorus	205.20	
IC-441-1C-101617	SA_134-150um	EPA6010_9200Bio2.5	3	mg/kg	Arsenic	4.14	
IC-441-1C-101617	SA_134-150um	EPA6010_9200Bio2.5	3	mg/kg	Lead	215.69	
IC-441-1C-101617	SA_134-150um	EPA6010_9200Bio1.5	3	mg/kg	Arsenic	9.33	
IC-441-1C-101617	SA_134-150um	EPA6010_9200Bio1.5	3	mg/kg	Lead	494.41	
IC-441-1C-101617	SA_134-150um	EPA6010	4	mg/kg	Aluminum	24794.57	ht
IC-441-1C-101617	SA_134-2mm	EPA6010	5	mg/kg	Aluminum	21009.14	crm ht
IC-441-1C-101617	SA_134-150um	EPA6010	4	mg/kg	Antimony	11.66	ht
IC-441-1C-101617	SA_134-2mm	EPA6010	5	mg/kg	Antimony	10.01	ht
IC-441-1C-101617	SA_134-150um	EPA6010	4	mg/kg	Arsenic	37.80	ht
IC-441-1C-101617	SA_134-2mm	EPA6010	5	mg/kg	Arsenic	26.88	ht
IC-441-1C-101617	SA_134-150um	EPA6010	4	mg/kg	Barium	302.90	ht
IC-441-1C-101617	SA_134-2mm	EPA6010	5	mg/kg	Barium	208.18	ht
							MDL
IC-441-1C-101617	SA_134-2mm	EPA6010	5	mg/kg	Beryllium	0.00	crm ht
IC-441-1C-101617	SA_134-150um	EPA6010	4	mg/kg	Beryllium	0.79	crm rl ht
IC-441-1C-101617	SA 134-150um	EPA6010	4	mg/kg	Cadmium	16.24	ht
IC-441-1C-101617	SA_134-2mm	EPA6010	5	mg/kg	Cadmium	12.34	ht
IC-441-1C-101617	SA_134-150um	EPA6010	4	mg/kg	Calcium	9939.94	ht
IC-441-1C-101617	SA_134-2mm	EPA6010	5	mg/kg	Calcium	8550.92	ht



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC-441-1C-101617	SA_134-150um	EPA6010	4	mg/kg	Chromium	34.90	ht
							dup
IC-441-1C-101617	SA_134-2mm	EPA6010	5	mg/kg	Chromium	33.62	ht
IC-441-1C-101617	SA_134-150um	EPA6010	4	mg/kg	Cobalt	9.88	ht
IC-441-1C-101617	SA_134-2mm	EPA6010	5	mg/kg	Cobalt	9.00	ht
IC-441-1C-101617	SA_134-150um	EPA6010	4	mg/kg	Copper	59.44	ht
IC-441-1C-101617	SA_134-2mm	EPA6010	5	mg/kg	Copper	41.81	ht
IC-441-1C-101617	SA_134-150um	EPA6010	4	mg/kg	Iron	20408.85	ht
IC-441-1C-101617	SA_134-2mm	EPA6010	5	mg/kg	Iron	19279.07	ht
IC-441-1C-101617	SA_134-150um	EPA6010	4	mg/kg	Lead	612.29	ht
IC-441-1C-101617	SA_134-2mm	EPA6010	5	mg/kg	Lead	462.21	ht
							crm
IC-441-1C-101617	SA_134-2mm	EPA6010	5	mg/kg	Magnesium	4596.00	ht
IC-441-1C-101617	SA_134-150um	EPA6010	4	mg/kg	Magnesium	3991.38	ht
IC-441-1C-101617	SA_134-150um	EPA6010	4	mg/kg	Manganese	936.51	ht
IC-441-1C-101617	SA_134-2mm	EPA6010	5	mg/kg	Manganese	704.30	ht
IC-441-1C-101617	SA_134-150um	EPA6010	4	mg/kg	Nickel	19.63	ht
IC-441-1C-101617	SA_134-2mm	EPA6010	5	mg/kg	Nickel	19.27	ht
IC-441-1C-101617	SA_134-150um	EPA6010	4	mg/kg	Phosphorus	2580.52	ht
IC-441-1C-101617	SA_134-2mm	EPA6010	5	mg/kg	Phosphorus	2000.57	ht
IC-441-1C-101617	SA_134-150um	EPA6010	4	mg/kg	Potassium	3382.44	crm ht
IC-441-1C-101617	SA_134-2mm	EPA6010	5	mg/kg	Potassium	3081.92	ht
IC-441-1C-101617	SA_134-150um	EPA6010	4	mg/kg	Selenium	3.83	rl ht
IC-441-1C-101617	SA_134-2mm	EPA6010	5	mg/kg	Selenium	1.01	rl ht
							MDL
IC-441-1C-101617	SA_134-150um	EPA6010	4	mg/kg	Silver	0.20	ht
	a. 121 a		_		a.,	0.00	MDL
IC-441-1C-101617	SA_134-2mm	EPA6010	5	mg/kg	Silver	0.20	ht
IC-441-1C-101617	SA_134-150um	EPA6010	4	mg/kg	Sodium	752.80	ht
IC-441-1C-101617	SA_134-2mm	EPA6010	5	mg/kg	Sodium	437.39	ht
IC 441 1C 101617	SA 124 150	EDA 4010	4	ma/lra	Thalling	1 27	blk rl
IC-441-1C-101617	SA_134-150um	EPA6010	4	mg/kg	Thallium	1.37	ht



Appendix C Detailed Incremental Composite Sample Results SWEL - Soil Water Environmental Lab

Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC-441-1C-101617	SA_134-2mm	EPA6010	5	mg/kg	Thallium	0.86	rl ht
IC-441-1C-101617	SA_134-150um	EPA6010	4	mg/kg	Vanadium	51.47	ht
IC-441-1C-101617	SA_134-2mm	EPA6010	5	mg/kg	Vanadium	48.62	ht
IC-441-1C-101617	SA_134-150um	EPA6010	4	mg/kg	Zinc	882.42	ht
IC-441-1C-101617	SA_134-2mm	EPA6010	5	mg/kg	Zinc	678.64	ht
IC-441-1C-101617	SA_134-2mm	EPA_300.0	1	mg/kg	Chloride	16.26	ht
IC-441-1C-101617	SA_134-2mm	EPA_300.0	1	mg/kg	Sulfate	47.12	ht
IC-441-1C-101617	SA_134-bulk	D422	1	%	Fines	4.01	
IC-441-1C-101617	SA_134-bulk	D422	1	%	Gravel	34.05	
IC-441-1C-101617	SA_134-bulk	D422	1	%	Sand	63.30	
IC-441-1C-101617	SA_134-bulk	D422	1	%	Silt	32.69	
IC-441-1C-101617	SA_134-150um	Bioaccess2.5pH	3	%	Arsenic	10.94	
IC-441-1C-101617	SA_134-150um	Bioaccess2.5pH	3	%	Lead	35.23	
IC-441-1C-101617	SA_134-150um	Bioaccess1.5pH	3	%	Arsenic	24.68	
IC-441-1C-101617	SA_134-150um	Bioaccess1.5pH	3	%	Lead	80.75	
IC-441-1C-101617	SA_134-2mm	NELSON82	2	%	Carbon_total	5.61	ht
IC-441-1C-101617	SA_134-2mm	BREMNER82	2	%	Nitrogen_total	0.35	ht
IC-441-1D-101617	SA_135-bulk	SM2510B	1	mS/m	Conductivity	11.23	ht
IC-441-1D-101617	SA_135-bulk	рН	1		рН	6.01	ht
IC-441-1D-101617	SA_135-150um	EPA6010_MEHLICH3	12	mg/kg	Lead	158.29	
IC-441-1D-101617	SA_135-150um	EPA6010_MEHLICH3	12	mg/kg	Phosphorus	144.25	
IC-441-1D-101617	SA_135-150um	EPA6010_9200Bio2.5	3	mg/kg	Arsenic	2.83	
IC-441-1D-101617	SA_135-150um	EPA6010_9200Bio2.5	3	mg/kg	Lead	150.12	
IC-441-1D-101617	SA_135-150um	EPA6010_9200Bio1.5	3	mg/kg	Arsenic	8.37	
IC-441-1D-101617	SA_135-150um	EPA6010_9200Bio1.5	3	mg/kg	Lead	358.62	
IC-441-1D-101617	SA_135-150um	EPA6010	4	mg/kg	Aluminum	24904.57	ht
IC-441-1D-101617	SA_135-2mm	EPA6010	5	mg/kg	Aluminum	22188.91	crm ht
IC-441-1D-101617	SA_135-2mm	EPA6010	5	mg/kg	Antimony	10.07	ht
IC-441-1D-101617	SA_135-150um	EPA6010	4	mg/kg	Antimony	8.61	ht
IC-441-1D-101617	SA_135-150um	EPA6010	4	mg/kg	Arsenic	38.72	ht



Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC-441-1D-101617	SA_135-2mm	EPA6010	5	mg/kg	Arsenic	30.37	ht
IC-441-1D-101617	SA_135-150um	EPA6010	4	mg/kg	Barium	281.31	ht
IC-441-1D-101617	SA_135-2mm	EPA6010	5	mg/kg	Barium	217.78	ht
							MDL
IC-441-1D-101617	SA_135-2mm	EPA6010	5	mg/kg	Beryllium	0.00	crm ht
IC-441-1D-101617	CA 125 150vm	EPA6010	4	ma/Ira	Dowylling	0.77	crm rl
	SA_135-150um		4	mg/kg	Beryllium		ht
IC-441-1D-101617	SA_135-150um	EPA6010	4	mg/kg	Cadmium	10.44	ht
IC-441-1D-101617	SA_135-2mm	EPA6010	5	mg/kg	Cadmium	9.74	ht
IC-441-1D-101617	SA_135-150um	EPA6010	4	mg/kg	Calcium	8708.25	ht
IC-441-1D-101617	SA_135-2mm	EPA6010	5	mg/kg	Calcium	8221.31	ht
70 111 15 101 15	a	77.1.404.0			~.		dup
IC-441-1D-101617	SA_135-2mm	EPA6010	5	mg/kg	Chromium	53.15	ht
IC-441-1D-101617	SA_135-150um	EPA6010	4	mg/kg	Chromium	38.18	ht
IC-441-1D-101617	SA_135-150um	EPA6010	4	mg/kg	Cobalt	9.46	ht
IC-441-1D-101617	SA_135-2mm	EPA6010	5	mg/kg	Cobalt	8.77	ht
IC-441-1D-101617	SA_135-150um	EPA6010	4	mg/kg	Copper	56.04	ht
IC-441-1D-101617	SA_135-2mm	EPA6010	5	mg/kg	Copper	44.29	ht
IC-441-1D-101617	SA_135-150um	EPA6010	4	mg/kg	Iron	21447.43	ht
IC-441-1D-101617	SA_135-2mm	EPA6010	5	mg/kg	Iron	20327.70	ht
IC-441-1D-101617	SA_135-150um	EPA6010	4	mg/kg	Lead	440.53	ht
IC-441-1D-101617	SA_135-2mm	EPA6010	5	mg/kg	Lead	405.63	ht
							crm
IC-441-1D-101617	SA_135-2mm	EPA6010	5	mg/kg	Magnesium	4860.95	ht
IC-441-1D-101617	SA_135-150um	EPA6010	4	mg/kg	Magnesium	3854.05	ht
IC-441-1D-101617	SA_135-150um	EPA6010	4	mg/kg	Manganese	840.14	ht
IC-441-1D-101617	SA_135-2mm	EPA6010	5	mg/kg	Manganese	686.51	ht
IC-441-1D-101617	SA_135-150um	EPA6010	4	mg/kg	Nickel	20.06	ht
IC-441-1D-101617	SA_135-2mm	EPA6010	5	mg/kg	Nickel	20.02	ht
IC-441-1D-101617	SA_135-150um	EPA6010	4	mg/kg	Phosphorus	2583.56	ht
IC-441-1D-101617	SA_135-2mm	EPA6010	5	mg/kg	Phosphorus	2051.42	ht



SWEL – Soil Water Envir	onmental Lab	Detailed Incremental Composite Sample Results					
Sample ID	Analysis ID	d_labresult.method_code	Batch	d_labresult.units	d_labresult.analyte	value	flags
IC-441-1D-101617	SA_135-150um	EPA6010	4	mg/kg	Potassium	3006.31	crm ht
IC-441-1D-101617	SA_135-2mm	EPA6010	5	mg/kg	Potassium	2931.15	ht
IC-441-1D-101617	SA_135-150um	EPA6010	4	mg/kg	Selenium	3.95	rl ht
IC-441-1D-101617	SA_135-2mm	EPA6010	5	mg/kg	Selenium	1.90	rl ht
IC-441-1D-101617	SA_135-150um	EPA6010	4	mg/kg	Silver	0.20	MDL ht
IC-441-1D-101617	SA_135-2mm	EPA6010	5	mg/kg	Silver	0.20	MDL ht
IC-441-1D-101617	SA_135-150um	EPA6010	4	mg/kg	Sodium	674.57	ht
IC-441-1D-101617	SA_135-2mm	EPA6010	5	mg/kg	Sodium	424.73	ht
IC-441-1D-101617	SA_135-150um	EPA6010	4	mg/kg	Thallium	0.90	blk rl ht
IC-441-1D-101617	SA_135-2mm	EPA6010	5	mg/kg	Thallium	0.58	rl ht
IC-441-1D-101617	SA_135-150um	EPA6010	4	mg/kg	Vanadium	55.53	ht
IC-441-1D-101617	SA_135-2mm	EPA6010	5	mg/kg	Vanadium	51.25	ht
IC-441-1D-101617	SA_135-150um	EPA6010	4	mg/kg	Zinc	510.69	ht
IC-441-1D-101617	SA_135-2mm	EPA6010	5	mg/kg	Zinc	470.79	ht
IC-441-1D-101617	SA_135-2mm	EPA_300.0	1	mg/kg	Chloride	16.20	ht
IC-441-1D-101617	SA_135-2mm	EPA_300.0	1	mg/kg	Sulfate	30.00	RL ht
IC-441-1D-101617	SA_135-bulk	D422	1	%	Fines	2.99	
IC-441-1D-101617	SA_135-bulk	D422	1	%	Gravel	32.60	
IC-441-1D-101617	SA_135-bulk	D422	1	%	Sand	57.80	
IC-441-1D-101617	SA_135-bulk	D422	1	%	Silt	39.21	
IC-441-1D-101617	SA_135-150um	Bioaccess2.5pH	3	%	Arsenic	7.31	
IC-441-1D-101617	SA_135-150um	Bioaccess2.5pH	3	%	Lead	34.08	
IC-441-1D-101617	SA_135-150um	Bioaccess1.5pH	3	%	Arsenic	21.63	
IC-441-1D-101617	SA_135-150um	Bioaccess1.5pH	3	%	Lead	81.41	
IC-441-1D-101617	SA_135-2mm	NELSON82	2	%	Carbon_total	4.95	ht
IC-441-1D-101617	SA_135-2mm	BREMNER82	2	%	Nitrogen_total	0.32	ht

Appendix D RLs and MDLs by Method and Analyte

SWEL – Soil Water Environmental Lab

SWEL - Soil Water Environ	imentai Lab		KLS and	MIDLS DY N
d_labresult.method_code	d_labresult.units	d_labresult.analyte	RL	MDL
EPA6010_MEHLICH3	mg/kg	Lead	0.1	0.02412
EPA6010_MEHLICH3	mg/kg	Phosphorus	0.5	0.05796
EPA6010_9200Bio2.5	mg/kg	Arsenic	1	0.3861
EPA6010_9200Bio2.5	mg/kg	Lead	1	0.3252
EPA6010_9200Bio1.5	mg/kg	Arsenic	1	0.3861
EPA6010_9200Bio1.5	mg/kg	Lead	1	0.3252
EPA6010	mg/kg	Aluminum	5	0.183
EPA6010	mg/kg	Antimony	5	0.4602
EPA6010	mg/kg	Arsenic	1	0.3861
EPA6010	mg/kg	Barium	1	0.0033
EPA6010	mg/kg	Beryllium	1	0.0036
EPA6010	mg/kg	Cadmium	1	0.0153
EPA6010	mg/kg	Calcium	10	0.372
EPA6010	mg/kg	Chromium	1	0.0345
EPA6010	mg/kg	Cobalt	1	0.0405
EPA6010	mg/kg	Copper	1	0.0573
EPA6010	mg/kg	Iron	5	0.1119
EPA6010	mg/kg	Lead	1	0.3252
EPA6010	mg/kg	Magnesium	5	0.003
EPA6010	mg/kg	Manganese	1	0.0255
EPA6010	mg/kg	Nickel	1	0.0888
EPA6010	mg/kg	Phosphorus	1	0.3135
EPA6010	mg/kg	Potassium	10	0.6984
EPA6010	mg/kg	Selenium	50	0.6978
EPA6010	mg/kg	Silver	5	0.2
EPA6010	mg/kg	Sodium	1	0.0705
EPA6010	mg/kg	Thallium	5	0.2619
EPA6010	mg/kg	Vanadium	5	0.027
EPA6010	mg/kg	Zinc	1	0.0339
EPA_300.0	mg/kg	Chloride	10	
EPA_300.0	mg/kg	Sulfate	30	
SM2510B	mS/m	Conductivity		
рН		рН		
D422	%	Fines		
D422	%	Gravel		
D422	%	Sand		
D422	%	Silt		
Bioaccess2.5pH	%	Arsenic		
Bioaccess2.5pH	%	Lead		
Bioaccess1.5pH	%	Arsenic		
Bioaccess1.5pH	%	Lead		