Department of Energy
National Nuclear Security Administration
Los Alamos Field Office
Los Alamos, New Mexico 87544

Kevin Pierard
Bureau Chief
Hazardous Waste Bureau
New Mexico Environment Department
Harold Runnels Building
2905 Rodeo Park Dr. Bldg. 1
Santa Fe, NM 87505

Dear Mr. Pierard:

Subject: Additional Information on the Three Drums of Potentially Hazardous Debris Recovered from the Middle DP Road Site February 21, 2020

Dear Mr. Pierard:

The U.S. Department of Energy (DOE), National Nuclear Security Administration (NA-LA) and the Office of Environmental Management (EM-LA) are providing additional information on the three drums of potentially hazardous debris and radiological contamination recovered from the Middle DP Road Site on February 21, 2020.

The three drums were transported as mixed low-level waste to Waste Control Specialists (WCS) in Andrews, Texas on April 28, 2020. WCS found that two of the three drums contained mixed low-level waste, the third was under the regulatory limit. Initial notification of these results was made in the weekly update for the week of May 18, 2020. Enclosed you will find the entire WCS report.

If you have any questions regarding the information provided, please contact Pete Maggiore at (505) 665-5025 or peter.maggiore@nnsa.doe.gov or Cheryl Rodriguez at (505) 257- 7941 or cheryl.rodriguez@em.doe.gov.

Thomas Johnson
Digitally signed by Thomas Johnson
Date: 2020.06.02 14:41:50 -04'00'

Thomas Johnson, Jr.
Acting Manager
Environmental Management
Los Alamos Field Office

Michael J. Weis
Digitally signed by Michael J. Weis
Date: 2020.06.02 14:40:06 -06'00'

Michael J. Weis
Manager
National Nuclear Security Administration
Los Alamos Field Office

Enclosure

cc:
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OOM: 31PM-2020-002666

OFFSITE ANALYTICAL DATA VALIDATION AND APPROVAL

SWO/PWO/WI #:	WCS Lab Sample ID#:	WCS COC #:	WCS Waste Profile#:
WI-OP-102.0	L20-197(crucible) , L20-198 (soil), L20-198a (metal debris)	COCL20-041	WP-8287
SDG/Job #	**Project Description**	**Sample Collection Date**	**Data reportable? (Yes/No)**
SDG 510506	Triad (Sort and Segregated, as received)	04/29/2020	Yes

Analytical Method Specific Quality Control Criteria

	Quality Control Criteria (Method Specific)	Acceptable Yes/No/NA		Quality Control Criteria (Method Specific)	Acceptable Yes/No/NA
1	Chain-of-Custody (COC)	Yes	15	Interference Check Samples (ICS A and ICS AB)	Yes
2	Transcription COC vs. Samples	Yes	16	Field/Trip Blank(s)	N/A
3	Holding Times/Preservation	Yes	17	Field Duplicate %RPD	N/A
4	Analytical Method	Yes	18	Method Blank(s)	Yes
5	Method Units	Yes	19	Lab Control Sample(s)	Yes
6	Reporting / Detection Limits	Yes	20	Serial Dilution	Yes
7	Instrument Tuning	Yes	21	Duplicate or MS/MSD %RPD	Yes
8	Initial Calibration	Yes	22	Matrix Spike %R	No
9	Calibration Verification: Initial and Continuing	Yes	23	Matrix Spike Duplicate %R	Yes
10	Calibration Blank(s): Initial and Continuing	Yes	24	Calculations (dilution factor, etc.)	Yes
11	Internal Standard Performance	N/A	25	Dilutions documented	Yes
12	Surrogate Recovery	N/A	26	Results Qualified/Flagged	Yes
13	Compound Identification	N/A	27	Analytical Completeness	Yes
14	Sample Cleanup	N/A	28	Confirmation	N/A

Generic Data Assessment Criteria

29	If the offsite laboratories case narratives are used to accept nonconforming results, are the provided data qualifiers, QC variances and supporting information, technically validity and scientifically defensible.	Yes
30	Does the Analytical Report address all profiled waste codes and any additional waste codes added at a later time?	Yes
31	Were all analyses needed requested and performed?	Yes
32	Are sample results reasonable when compared to known or expected levels?	Yes

REMARKS:

The data associated with this Offsite Analytical Data Validation and Approval Form has been reviewed for all analyses requested by the chain of custody and found to be acceptable by the methodology performed. Initial and continuing calibration checks met criteria. All internal standards, surrogates, and matrix spike recoveries met established limits for all blanks, samples, and matrix spike/matrix spike duplicate pairs, where applicable, except for what is noted below and in the following pages.

The data associated with this Offsite Analytical Data Approval Form has been reviewed for all analyses requested by the chain of custody and found to be acceptable by the methodology performed. Initial and continuing calibration checks met criteria. All internal standards, surrogates, and matrix spike recoveries met established limits for all blanks, samples, and matrix spike/matrix spike duplicate pairs, where applicable, except for what is noted below and in the following pages.

Anomalies and Defensibility

Any data anomalies associated with these samples are discussed in the respective Case Narrative and the data report includes qualification of the affected results. The data furnished is of known and documented quality, in compliance with the regulatory method(s) where applicable, and therefore are technically defensible.

OFFSITE ANALYTICAL DATA VALIDATION AND APPROVAL

Sample Receipt and Chain of Custody

Analytical request changed once sample received by GEL, chain of custody revised to reflect the changes.

Metals

The PQL standard recoveries for SW846 6010C or 6010D met the control limits with the exception of lead and selenium. Client sample concentrations were less than the MDL or greater than two times the PQL; therefore the data were not adversely affected.

For the ICP-MS analysis, the ICSA solution contains analyte concentrations which are verified trace impurities indigenous to the purchased standard.

The MS did not meet the recommended quality control acceptance criteria for percent recoveries for silver. The post spike recovery was within the required control limits. This verifies the absence of a matrix interference in the post-spike digested sample. The recovery may be attributed to possible sample matrix interference and/or non-homogeneity

Method SW-846 3050B is not a total digestion technique for most samples. It is a very strong acid digestion that will dissolve almost all elements that could become environmentally available. By design, elements bound in silicate structures are not normally dissolved by this procedure as they are not usually mobile in the environment.

The Method Blank for Chromium, Lead and Mercury reported positive detections. The MB and associated samples are appropriately qualified.

Less sample was used due to high levels of radioactivity (ALARA). Proportional amounts of sample and extraction fluid were used as prescribed by the method.

Sample ID L20-198a was diluted to ensure that the analyte concentration was within the linear calibration range of the instrument.

The ICPMS solid samples in this SDG were diluted the standard two times.

The extracted samples and associated matrix QC were prepared at a ten times or greater dilution factor to minimize potential interferences from leached or filtered extracts.

OFFSITE ANALYTICAL DATA VALIDATION AND APPROVAL

Concentration/Permit/Regulatory Limits

Sample ID L20-197 (Crucible):
Total Lead reported as 4.57 mg/Kg in the crucible. Assuming 100% of the lead is leachable, the highest theoretical TCLP concentration would be 0.229 mg/L TCLP Lead; the regulated level of Lead is Lead 5.0 mg/L TCLP. Therefore the crucible ***does not contain a regulated concentration*** of Lead.

Sample ID L20-198 (Soil):
TCLP Arsenic, Selenium and Silver each reported as, ND, Not Detected in the soil. Therefore the soil ***does not contain a regulated concentration*** of Arsenic, Selenium or Silver.

TCLP Mercury, Barium, Cadmium and Chromium each reported below their respective regulatory levels (0.2 mg/L TCLP, 100.0 mg/L TCLP, 1.0 mg/L TCLP and 5.0 mg/L TCLP; respectively) in the soil. Therefore the soil ***does not contain a regulated concentration*** of Mercury, Barium, Cadmium or Chromium.

TCLP Lead reported as 27.7 mg/L TCLP in the soil. The regulated level of Lead is 5.0 mg/L TCLP. Therefore the soil ***does contain a regulated concentration*** of Lead.

Sample ID L20-198a (Metal Debris):
Total Lead reported as 339 mg/Kg. Assuming 100% of the lead is leachable, the highest theoretical TCLP concentration would be 17.0 mg/L TCLP Lead; the regulated level of Lead is Lead 5.0 mg/L TCLP. Therefore the metal debris is ***assumed to contain a regulated concentration*** of Lead.

Analytical Data Validation and Approval

The data package evaluated in this report has been found to be valid and is approved for use and final reporting is acceptable except as indicated in the remarks.

	Print Name	Signature	Date
Data Validation performed by	Yvonne D. Montiel		05/15/2020
Director of ESH&Q Concurrence by	C. Cortez for J. Cartwright		5/15/2020

WASTE CONTROL SPECIALISTS

Memorandum

To: **File**

From: **Jay B. Cartwright, RSO/Director of ESH&Q**

Date: **4/27/2020**

Re: **Designation as concurrence signature on chemical validation documents per procedure AL-1.1.7 – Offsite Analytical Validation & Approval**

All,

The following personnel are designated as reviewers and can sign off on the concurrence of AL-1.1.7-1 forms.

Christian Cortez
Jenny Caldwell
Jimmy Abney
David Lynch
Ted Sleeman

Please let me know if you have any questions.

Jay B. Cartwright

GEL Laboratories LLC
a member of The GEL Group INC

PO Box 30712 Charleston, SC 29417
2040 Savage Road Charleston, SC 29407
P 843.556.8171
F 843.766.1178

gel.com

May 12, 2020

Ms. Yvonne Montiel
Waste Control Specialists LLC
9998 West Highway 176
Eunice, New Mexico 88231

Re: WCS Operations - Chem Data
Work Order: 510506

Dear Ms. Montiel:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on May 01, 2020. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Test results for NELAP or ISO 17025 accredited tests are verified to meet the requirements of those standards, with any exceptions noted. The results reported relate only to the items tested and to the sample as received by the laboratory. These results may not be reproduced except as full reports without approval by the laboratory. Copies of GEL's accreditations and certifications can be found on our website at www.gel.com.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4289.

Sincerely,

Samuel Hogan for
Julie Robinson
Project Manager

Purchase Order: BP003830
Chain of Custody: L20-041
Enclosures

Table of Contents

Case Narrative

Case Narrative
for
Waste Control Specialists, LLC
SDG: 510506

May 12, 2020

Laboratory Identification:

GEL Laboratories LLC
2040 Savage Road
Charleston, South Carolina 29407
(843) 556-8171

Summary

Sample Receipt The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on May 01, 2020 for analysis. The samples were delivered with proper chain of custody documentation and signatures. The samples were screened according to GEL Standard Operating Procedure. All sample containers arrived without any visible signs of tampering or breakage. Containers were checked for pH, where appropriate, and matched the preservative as documented on the accompanying chain of custody. Shipping container temperatures were checked, documented, and within specifications. There are no additional comments concerning sample receipt.

Sample Identification The laboratory received the following samples:

Laboratory ID	Client ID
510506001	L20-197
510506002	L20-198
510506003	L20-198a

Case Narrative

Sample analyses were conducted using methodology as outlined in GEL Laboratories, LLC (GEL) Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are contained in the analytical case narratives in the enclosed data package. Initial and continuing calibration requirements have been met unless noted with a Data Exception Report (DER) within the radiochemistry case narrative. Due to the extremely small amount of sediment occasionally recovered from the water samples, the laboratory is unable to perform any analyses on the sediment portion of the sample. The TPU (total propagated uncertainty) for all radiological analysis is reported at 2 sigma. The sample-specific MDA (minimum detectable activity) is simply an indication that the lab has designed the analysis to ensure the Required Detection Limit has been met. So if the activity of the sample is greater than the MDA achieved, by definition the MDA is not applicable. Data reported for samples analyzed for this work order have been processed using quality systems and procedures that comply with the guidelines presented in the Multi-Agency Radiological Laboratory Protocols (MARLAP) Manual.

Data Package

The enclosed data package contains the following sections: General Narrative, Chain of Custody and Supporting Documentation, and data from the following fractions: Metals.

Samuel Hogan for
Julie Robinson
Project Manager

Chain of Custody

WCS ANDREWS, TEXAS	510506 FORM	Effective Date 05/16/2017	~~AL-2.1.1-5~~
	ANALYTICAL LAB DEPARTMENT	Revision 4	Page 1 of 1

OFFSITE CHAIN OF CUSTODY

05/01/2020

9998 W. State Hwy 176, Andrews, Texas 79714 (physical)
PO Box 1129, Andrews, Texas 79714 (billing)

Business Phone: 432-525-8500
Fax: 432-525-8902

Date 04/30/2020

Department Contact		Analysis Turnaround Time	Chain of Custody #
Department:	Lab	14 Day	L 20-041
Sampler Name:	Nate Starcher		Purchase Order Number
Sample Type:	Rad		BP003830
Shipped Via:	Fedex	Indicate the number of days including C for calendar days or W for working days.	

Shipped To: GEL, 2040 Savage Road, Charleston, SC 29407

Analysis Requested

WCS Sample ID	Sample Description	Sample Date	Sample Time	Sample Volume	# of Containers	Preservative	Total Lead	TCLP Lead, Arsenic, Barium, Cadmium, Chromium, Mercury, Selenium and Silver.	N/A		Sample Specific Notes
L20-197	Triad crucible	04/29/20	1300	crucible	1	None	X				WP 8287
L20-198	Triad composite ****	04/29/20	1305	125ml	1	ICE		X			WP 8287

Special Instructions/QC Requirements/Comments:
~~For RS-5.0.0~~ 05/01/2020 PLEASE RETURN ANY UNUSED SAMPLE ON THIS CHAIN OF CUSTODY. IF NO SAMPLE REMAINS, PROVIDE STATEMENT.

- PLEASE ANALYZE THE ENCLOSED SAMPLES FOR THE PARAMETERS LISTED.
- RETURN THE ORIGINAL CHAIN OF CUSTODY SIGNED, CERTIFYING RECEIPT OF SAMPLES TO WCS: ATTENTION LAB MANAGER.
- PLEASE INCLUDE THE PURCHASE ORDER NUMBER ON ALL REPORTS AND INVOICES.
- ~~PLEASE DISPOSE OF ANY REMAINING SAMPLE FOLLOWING COMPLETION OF ANALYSIS.~~ 05/01/2020

Relinquished by (print/signature):	N.Starcher/YDMontiel for NS	05/01/2020
Date/Time:	04/30/2020/11:00 YDMontiel for NS	05/01/2020

RECEIVING LABAORATORY

Received Sample Temperature	I, ________ (print name and title) hereby certify the sample seal was intact upon receipt of the above described samples.	Received by (signature):	
2°C		Date/Time:	5/1/20 9:10

**** L20-198 Please remove debris mixed in with soil composite to create a 3rd sample (L20-198a) of debris only and analyze for Total Lead.

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM 510506

Client: WCSD	**SDG/AR/COC/Work Order:**
Received By: RSO	**Date Received:** 5/1/20
Carrier and Tracking Number	Circle Applicable: FedEx Express FedEx Ground UPS Field Services Courier Other 7703 5695 1948 7 7703 5776 9998

Suspected Hazard Information	Yes	No	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
A)Shipped as a DOT Hazardous?		✓	Hazard Class Shipped: UN#: If UN2910, Is the Radioactive Shipment Survey Compliant? Yes___ No___
B) Did the client designate the samples are to be received as radioactive?	✓		COC notation or radioactive stickers on containers equal client designation.
C) Did the RSO classify the samples as radioactive?	✓		Maximum Net Counts Observed* (Observed Counts - Area Background Counts): 0.5 CPM / mR/Hr Classified as: Rad 1 Rad 2 Rad 3
D) Did the client designate samples are hazardous?		✓	COC notation or hazard labels on containers equal client designation.
E) Did the RSO identify possible hazards?		✓	If D or E is yes, select Hazards below. PCB's Flammable Foreign Soil RCRA Asbestos Beryllium Other:

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	✓			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Chain of custody documents included with shipment?	✓			Circle Applicable: Client contacted and provided COC COC created upon receipt
3	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	✓			Preservation Method: Wet Ice Ice Packs Dry ice None Other: *all temperatures are recorded in Celsius TEMP: 2°C
4	Daily check performed and passed on IR temperature gun?	✓			Temperature Device Serial #: IR3-18 Secondary Temperature Device Serial # (If Applicable):
5	Sample containers intact and sealed?	✓			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
6	Samples requiring chemical preservation at proper pH?		✓		Sample ID's and Containers Affected: If Preservation added, Lot#:
7	Do any samples require Volatile Analysis?	✓			If Yes, are Encores or Soil Kits present for solids? Yes No ✓ NA (If yes, take to VOA Freezer) Do liquid VOA vials contain acid preservation? Yes No NA ✓ (If unknown, select No) Are liquid VOA vials free of headspace? Yes___ No___ NA ✓ Sample ID's and containers affected:
8	Samples received within holding time?	✓			ID's and tests affected:
9	Sample ID's on COC match ID's on bottles?	✓			ID's and containers affected:
10	Date & time on COC match date & time on bottles?	✓			Circle Applicable: No dates on containers No times on containers COC missing info Other (describe)
11	Number of containers received match number indicated on COC?	✓			Circle Applicable: No container count on COC Other (describe)
12	Are sample containers identifiable as GEL provided?			✓	
13	COC form is properly signed in relinquished/received sections?	✓			Circle Applicable: Not relinquished Other (describe)

Comments (Use Continuation Form if needed):

L20-199 recd as Rad 1, others Rad 3.

PM (or PMA) review: Initials SH Date 5/4/20 Page 1 of 1

Data Review Qualifier Definitions

Data Review Qualifier Definitions

Qualifier	Explanation
*	A quality control analyte recovery is outside of specified acceptance criteria
**	Analyte is a surrogate compound
<	Result is less than value reported
>	Result is greater than value reported
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
A	The TIC is a suspected aldol-condensation product
B	Target analyte was detected in the associated blank
B	Metals-Either presence of analyte detected in the associated blank, or MDL/IDL < sample value < PQL
BD	Results are either below the MDC or tracer recovery is low
C	Analyte has been confirmed by GC/MS analysis
D	Results are reported from a diluted aliquot of the sample
d	5-day BOD-The 2:1 depletion requirement was not met for this sample
E	Organics-Concentration of the target analyte exceeds the instrument calibration range
E	Metals-%difference of sample and SD is >10%. Sample concentration must meet flagging criteria
H	Analytical holding time was exceeded
h	Preparation or preservation holding time was exceeded
J	Value is estimated
N	Metals-The Matrix spike sample recovery is not within specified control limits
N	Organics-Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC). Quantitation is based on nearest internal standard response factor
N/A	Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
ND	Analyte concentration is not detected above the reporting limit
UI	Gamma Spectroscopy-Uncertain identification
X	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y	QC Samples were not spiked with this compound
Z	Paint Filter Test-Particulates passed through the filter, however no free liquids were observed.

P Organics-The concentrations between the primary and confirmation columns/detectors is >40% difference. For HPLC, the difference is >70%.

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

Laboratory Certifications

List of current GEL Certifications as of 12 May 2020

State	Certification
Alaska	17−018
Alaska Drinking Water	SC00012
Arkansas	88−0651
CLIA	42D0904046
California	2940
Colorado	SC00012
Connecticut	PH−0169
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330−15−00283, P330−15−00253
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC00012
Idaho	SC00012
Illinois NELAP	200029
Indiana	C−SC−01
Kansas NELAP	E−10332
Kentucky SDWA	90129
Kentucky Wastewater	90129
Louisiana Drinking Water	LA024
Louisiana NELAP	03046 (AI33904)
Maine	2019020
Maryland	270
Massachusetts	M−SC012
Massachusetts PFAS Approv	Letter
Michigan	9976
Mississippi	SC00012
Nebraska	NE−OS−26−13
Nevada	SC000122020−1
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
North Dakota	R−158
Oklahoma	2019−165
Pennsylvania NELAP	68−00485
Puerto Rico	SC00012
S. Carolina Radiochem	10120002
Sanitation Districts of L	9255651
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235−20−16
Utah NELAP	SC000122020−32
Vermont	VT87156
Virginia NELAP	460202
Washington	C780

Metals Analysis

Case Narrative

Metals
Technical Case Narrative
Waste Control Specialists, LLC
SDG #: 510506

Product: Determination of Metals by ICP
Analytical Method: SW846 3010A/6010C
Analytical Procedure: GL-MA-E-013 REV# 31
Analytical Batch: 1995508

Product: Determination of Metals by ICP-MS
Analytical Method: SW846 3050B/6020A
Analytical Procedure: GL-MA-E-014 REV# 33
Analytical Batch: 1995073

Product: Mercury Analysis Using the Perkin Elmer Automated Mercury Analyzer
Analytical Method: SW846 7470A
Analytical Procedure: GL-MA-E-010 REV# 38
Analytical Batch: 1996346

TCLP Preparation Method: SW846 1311
TCLP Preparation Procedure: GL-LB-E-006 REV# 22
TCLP Preparation Batch: 1995020

Preparation Method: SW846 3050B
Preparation Procedure: GL-MA-E-009 REV# 29
Preparation Batch: 1995072

Preparation Method: SW846 3010A
Preparation Procedure: GL-MA-E-008 REV# 19
Preparation Batch: 1995507

Preparation Method: SW846 7470A Prep
Preparation Procedure: GL-MA-E-010 REV# 38
Preparation Batch: 1996345

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
510506001	L20-197
510506002	L20-198
510506003	L20-198a
1204556628	Tumble Blank (TB)
1204556627	510506002(L20-198S) Matrix Spike (MS)
1204557629	Method Blank (MB)**ICP**
1204557630	Laboratory Control Sample (LCS)
1204557633	510506002(L20-198L) Serial Dilution (SD)
1204557631	510506002(L20-198D) Sample Duplicate (DUP)
1204556627	510506002(L20-198S) Matrix Spike (MS)
1204561025	510506002(L20-198PS) Post Spike (PS)

1204556729	Method Blank (MB)**ICP-MS**
1204556730	Laboratory Control Sample (LCS)
1204556733	510506001(L20-197L) Serial Dilution (SD)
1204556731	510506001(L20-197D) Sample Duplicate (DUP)
1204556732	510506001(L20-197S) Matrix Spike (MS)
1204559438	Method Blank (MB)**CVAA**
1204559439	Laboratory Control Sample (LCS)
1204559442	510506002(L20-198L) Serial Dilution (SD)
1204559440	510506002(L20-198D) Sample Duplicate (DUP)
1204556627	510506002(L20-198S) Matrix Spike (MS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Calibration Information

CRDL/PQL Requirements
The PQL standard recoveries for SW846 6010C or 6010D met the control limits with the exception of lead and selenium. Client sample concentrations were less than the MDL or greater than two times the PQL; therefore the data were not adversely affected. 510506002 (L20-198)-ICP.

ICSA/ICSAB Statement
For the ICP-MS analysis, the ICSA solution contains analyte concentrations which are verified trace impurities indigenous to the purchased standard.

Quality Control (QC) Information

Matrix Spike (MS/MSD) Recovery Statement
The percent recoveries (%R) obtained from the MS/MSD analyses are evaluated when the sample concentration is less than four times (4X) the spike concentration added. The MS/MSD (See Below) did not meet the recommended quality control acceptance criteria for percent recoveries for the following applicable analyte. The post spike recovery was within the required control limits. This verifies the absence of a matrix interference in the post-spike digested sample. The recovery may be attributed to possible sample matrix interference and/or non-homogeneity.

Sample	Analyte	Value
1204556627 (L20-198MS)	Silver	64.4* (75%-125%)

Technical Information

Preparation/Analytical Method Verification
Method SW-846 3050B is not a total digestion technique for most samples. It is a very strong acid digestion that will dissolve almost all elements that could become environmentally available. By design, elements bound in silicate structures are not normally dissolved by this procedure as they are not usually mobile in the environment.

Extraction Process Statement

Less sample was used due to high levels of radioactivity (ALARA). Proportional amounts of sample and extraction fluid were used as prescribed by the method.

Sample Dilutions
Dilutions may be required for many reasons, including to minimize matrix interferences or to bring over range target analyte concentrations into the linear calibration range. Sample 510506003 (L20-198a)-ICP-MS was diluted to ensure that the analyte concentration was within the linear calibration range of the instrument. The ICPMS solid samples in this SDG were diluted the standard two times. ICP-MS.

Analyte	510506	
	001	**003**
Lead	2X	200X

Preparation Information
The extracted samples and associated matrix QC were prepared at a ten times or greater dilution factor to minimize potential interferences from leached or filtered extracts. ICP and CVAA.

Miscellaneous Information

Additional Comments
Any data anomalies associated with these samples are discussed in the Case Narrative and the data report includes qualification of the affected results. The data furnished is of known and documented quality, in compliance with the regulatory method(s) where applicable, and therefore are technically defensible.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Qualifier Definition Report
for

WCSO001 Waste Control Specialists, LLC

Client SDG: 510506 GEL Work Order: 510506

The Qualifiers in this report are defined as follows:

* A quality control analyte recovery is outside of specified acceptance criteria
B The analyte was found in the blank above the effective MDL.
J Value is estimated
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature:  **Name: Edmund Frampton**

Date: 15 MAY 2020 **Title: Team Leader**

Sample Data Summary

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: May 14, 2020

Company : Waste Control Specialists LLC
Address : 9998 West Highway 176

Eunice, New Mexico 88231
Contact: Ms. Yvonne Montiel
Project: WCS Operations - Chem Data

Client Sample ID: L20-197
Sample ID: 510506001
Matrix: Solid
Collect Date: 29-APR-20 13:00
Receive Date: 01-MAY-20
Collector: Client

Project: WCSO00101
Client ID: WCSO001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP-MS												
SW846 3050B/6020A Lead Solid "As Received"												
Lead	B	4570	490	1960	ug/Kg	490	2	PRB	05/13/20	1840	1995073	1

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3050B	ICP-MS 3050BS PREP	SM1	05/12/20	1011	1995072

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 3050B/6020A	

Notes:

Column headers are defined as follows:

DF: Dilution Factor
DL: Detection Limit
MDA: Minimum Detectable Activity
MDC: Minimum Detectable Concentration
Lc/LC: Critical Level
PF: Prep Factor
RL: Reporting Limit
SQL: Sample Quantitation Limit

GEL LABORATORIES LLC
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Certificate of Analysis

Report Date: May 14, 2020

Company : Waste Control Specialists LLC
Address : 9998 West Highway 176

Eunice, New Mexico 88231
Contact: Ms. Yvonne Montiel
Project: WCS Operations - Chem Data

Client Sample ID: L20-198
Sample ID: 510506002
Matrix: Soil
Collect Date: 29-APR-20 13:05
Receive Date: 01-MAY-20
Collector: Client

Project: WCSO00101
Client ID: WCSO001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Mercury Analysis-CVAA												
TCLP Hg in Solid "As Received"												
Mercury	BJ	0.00161	0.000670	0.200	mg/L	10.0	1	AXS5	05/12/20	1520	1996346	1
Metals Analysis-ICP												
TCLP ICP Metals - 1311/3010A/6010C "As Received"												
Arsenic	U	ND	0.0500	5.00	mg/L	10.0	1	JWJ	05/13/20	0031	1995508	2
Barium	J	0.529	0.0100	100	mg/L	10.0	1					
Cadmium	J	0.340	0.0100	1.00	mg/L	10.0	1					
Chromium	BJ	0.120	0.0100	5.00	mg/L	10.0	1					
Lead	B	27.7	0.0330	5.00	mg/L	10.0	1					
Selenium	U	ND	0.0600	1.00	mg/L	10.0	1					
Silver	U	ND	0.0100	5.00	mg/L	10.0	1	JWJ	05/13/20	2101	1995508	3

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 1311	SW846 1311 TCLP Leaching	JP2	05/06/20	1530	1995020
SW846 3010A	ICP-TRACE TCLP by SW846 3010A	SM1	05/12/20	1010	1995507
SW846 7470A Prep	EPA 7470A Mercury Prep TCLP Liquid	HH1	05/11/20	1600	1996345

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 7470A	
2	SW846 3010A/6010C	
3	SW846 3010A/6010C	

Notes:

Column headers are defined as follows:

DF: Dilution Factor
DL: Detection Limit
MDA: Minimum Detectable Activity
MDC: Minimum Detectable Concentration
Lc/LC: Critical Level
PF: Prep Factor
RL: Reporting Limit
SQL: Sample Quantitation Limit

GEL LABORATORIES LLC
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Certificate of Analysis

Report Date: May 14, 2020

Company : Waste Control Specialists LLC
Address : 9998 West Highway 176

Eunice, New Mexico 88231
Contact: Ms. Yvonne Montiel
Project: WCS Operations - Chem Data

Client Sample ID: L20-198a
Sample ID: 510506003
Matrix: Soil
Collect Date: 29-APR-20 13:05
Receive Date: 01-MAY-20
Collector: Client

Project: WCSO00101
Client ID: WCSO001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP-MS												
SW846 3050B/6020A Lead Solid "As Received"												
Lead	B	339000	9690	38800	ug/Kg	96.9	200	PRB	05/13/20	1859	1995073	1

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3050B	ICP-MS 3050BS PREP	SM1	05/12/20	1011	1995072

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 3050B/6020A	

Notes:

Column headers are defined as follows:

DF: Dilution Factor
DL: Detection Limit
MDA: Minimum Detectable Activity
MDC: Minimum Detectable Concentration
Lc/LC: Critical Level
PF: Prep Factor
RL: Reporting Limit
SQL: Sample Quantitation Limit

Quality Control Summary

QC Summary

Report Date: May 14, 2020

Waste Control Specialists LLC
9998 West Highway 176
Eunice, New Mexico

Contact: **Ms. Yvonne Montiel**

Workorder: **510506**

Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Metals Analysis - ICPMS											
Batch 1995073											
QC1204556731 510506001 DUP											
Lead	B	4570	B	4010	ug/Kg	12.9 ^		(+/-1820)	PRB	05/13/20	18:43
QC1204556730 LCS											
Lead	24800		B	25100	ug/Kg		101	(80%-120%)		05/13/20	18:36
QC1204556729 MB											
Lead			J	1230	ug/Kg					05/13/20	18:33
QC1204556732 510506001 MS											
Lead	23800 B	4570	B	29400	ug/Kg		104	(75%-125%)		05/13/20	18:46
QC1204556733 510506001 SDILT											
Lead	B	4.66	BJ	0.885	ug/L	5		(0%-10%)		05/13/20	18:52
Metals Analysis-ICP											
Batch 1995508											
QC1204557631 510506002 DUP											
Arsenic	U	ND	BJ	0.0792	mg/L	200			JWJ	05/13/20	00:35
Barium	J	0.529	J	0.506	mg/L	4.39 ^		(+/-100)			
Cadmium	J	0.340	J	0.332	mg/L	2.39 ^		(+/-1.00)			
Chromium	BJ	0.120	BJ	0.121	mg/L	0.49 ^		(+/-5.00)			
Lead	B	27.7	B	27.3	mg/L	1.57		(0%-20%)			
Selenium	U	ND	U	ND	mg/L	N/A					

QC Summary

Workorder: **510506**

Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date Time
Metals Analysis-ICP										
Batch 1995508										
Silver	U	ND	U	ND	mg/L	N/A			JWJ	05/13/20 21:05
QC1204557630 LCS										
Arsenic	5.00		BJ	4.59	mg/L		91.8	(80%-120%)		05/13/20 00:29
Barium	5.00		J	4.73	mg/L		94.6	(80%-120%)		
Cadmium	5.00			4.54	mg/L		90.7	(80%-120%)		
Chromium	5.00		BJ	4.76	mg/L		95.2	(80%-120%)		
Lead	5.00		BJ	4.82	mg/L		96.5	(80%-120%)		
Selenium	5.00		B	4.46	mg/L		89.2	(80%-120%)		
Silver	1.00		J	0.962	mg/L		96.2	(80%-120%)		
QC1204557629 MB										
Arsenic			J	0.102	mg/L					05/13/20 00:21
Barium			U	ND	mg/L					
Cadmium			U	ND	mg/L					
Chromium			J	0.0160	mg/L					
Lead			J	0.203	mg/L					
Selenium			J	0.251	mg/L					

QC Summary

Workorder: **510506**

Parmname	NOM		Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date Time
Metals Analysis-ICP											
Batch 1995508											
Silver				U	ND	mg/L				JWJ	05/13/20 00:21
QC1204556627 510506002 MS											
Arsenic	5.00	U	ND	BJ	4.75	mg/L		94.1	(75%-125%)		05/13/20 00:39
Barium	10.0	J	0.529	J	9.87	mg/L		93.4	(75%-125%)		
Cadmium	1.00	J	0.340		1.36	mg/L		102	(75%-125%)		
Chromium	5.00	BJ	0.120	BJ	4.92	mg/L		96	(75%-125%)		
Lead	5.00	B	27.7	B	32.4	mg/L		N/A	(75%-125%)		
Selenium	1.00	U	ND	BJ	0.896	mg/L		89.6	(75%-125%)		
Silver	0.500	U	ND	J	0.322	mg/L		64.4*	(75%-125%)		05/13/20 21:09
QC1204561025 510506002 PS											
Silver	100	U	ND	J	85.4	ug/L		85.4	(80%-120%)		05/14/20 16:55
QC1204557633 510506002 SDILT											
Arsenic		U	ND	BJ	7.32	ug/L	N/A		(0%-10%)		05/13/20 00:42
Barium		J	52.9	J	10.3	ug/L	2.89		(0%-10%)		
Cadmium		J	34.0	J	6.07	ug/L	10.8		(0%-10%)		
Chromium		BJ	12.0	BJ	3.28	ug/L	36.4		(0%-10%)		
Lead		B	2770	B	614	ug/L	10.7		(0%-10%)		

QC Summary

Workorder: **510506**

Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date Time
Metals Analysis-ICP										
Batch 1995508										
Selenium	U	ND	BJ	9.16	ug/L	N/A		(0%-10%)	JWJ	05/13/20 00:42
Silver	U	ND	U	ND	ug/L	N/A		(0%-10%)		05/13/20 21:25
QC1204556628 TB										
Arsenic			U	ND	mg/L					05/13/20 00:25
Barium			U	ND	mg/L					
Cadmium			U	ND	mg/L					
Chromium			J	0.0186	mg/L					
Lead			J	0.0997	mg/L					
Selenium			J	0.181	mg/L					
Silver			U	ND	mg/L					
Metals Analysis-Mercury										
Batch 1996346										
QC1204559440 510506002 DUP										
Mercury	BJ	0.00161	BJ	0.00140	mg/L	14 ^		(+/-0.200)	AXS5	05/12/20 15:23
QC1204559439 LCS										
Mercury	0.0200		B	0.0215	mg/L		108	(80%-120%)		05/12/20 15:18
QC1204559438 MB										
Mercury			J	0.000700	mg/L					05/12/20 15:05
QC1204556627 510506002 MS										
Mercury	0.0200 BJ	0.00161	B	0.0224	mg/L		104	(75%-125%)		05/12/20 15:22

QC Summary

Workorder: **510506**

Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Metals Analysis-Mercury											
Batch 1996346											
QC1204559442 510506002 SDILT											
Mercury	BJ	0.161	BJ	0.0900	ug/L	180		(0%-10%)	AXS5	05/12/20	15:25
QC1204556628 TB											
Mercury			J	0.000760	mg/L					05/12/20	15:16

Notes:

The Qualifiers in this report are defined as follows:

- * A quality control analyte recovery is outside of specified acceptance criteria
- B The analyte was found in the blank above the effective MDL.
- E % difference of sample and SD is >10%. Sample concentration must meet flagging criteria
- H Analytical holding time was exceeded
- J Value is estimated
- N The matrix spike sample recovery is not within specified control limits
- N/A RPD or % recovery limits do not apply
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- h Preparation or preservation holding time was exceeded

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.
^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.
* Indicates that a Quality Control parameter was not within specifications.
For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.