



Isotopic Uranium Case Narrative

Cabrera Services, Inc. UNC New Haven CT – 10-1007.00

Work Order Number: 1607218

1. This report consists of the analytical results for 13 soil samples received by ALS on 7/14/2016.
2. These samples were prepared according to the current revisions of SOP 773, SOP 778, and SOP 736.
3. The samples were analyzed for the presence of isotopic uranium according to the current revision of SOP 714. The analyses were completed on 8/10/2016.
4. The isotopic analysis results for the samples are reported on a 'Dry Weight' basis in units of pCi/gram.
5. This analytical method quantifies U-235 alpha activity in a specific region of interest corresponding to emission energies between those of U-234 and U-238. A potential limitation of this method is that measurable amounts of U-234 in the sample may cause a small amount of characteristic activity in the U-235 region of interest due to poorly resolved alpha activity at the boundary between the two regions. To minimize the potential for a high bias in the U-235 analytical results, the U-235 region of interest has been narrowed and limited to a lower energy region. An 85.1% abundance correction has been made to the final U-235 results.
6. No anomalous situations were encountered during the preparation or analysis of these samples. All quality control criteria were met.



The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, ALS certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

Hannah Alt
Hannah Alt
Radiochemistry Primary Data Reviewer

8/11/16
Date

[Signature]
Radiochemistry Final Data Reviewer

8/11/16
Date

ALS -- Fort Collins

Sample Number(s) Cross-Reference Table

OrderNum: 1607218

Client Name: Cabrera Services, Inc.

Client Project Name: UNC New Haven CT

Client Project Number: 10-1007.00

Client PO Number: 01191

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
ML-SB-01-S-P-17	1607218-1		SOIL	11-Jul-16	10:00
ML-SB-02-S-P-14	1607218-2		SOIL	11-Jul-16	11:00
ML-SB-03-S-P-12	1607218-3		SOIL	11-Jul-16	12:00
ML-SB-04-S-P-9	1607218-4		SOIL	11-Jul-16	13:00
ML-SB-05-S-P-9	1607218-5		SOIL	11-Jul-16	14:00
ML-SB-06-S-P-11	1607218-6		SOIL	11-Jul-16	15:00
HW-SB-07-S-P-10	1607218-7		SOIL	12-Jul-16	8:00
HW-SB-08-S-P-10	1607218-8		SOIL	12-Jul-16	9:00
HW-SB-09-S-P-10	1607218-9		SOIL	12-Jul-16	10:00
HW-SB-10-S-P-10	1607218-10		SOIL	12-Jul-16	11:00
HW-SB-11-S-P-10	1607218-11		SOIL	12-Jul-16	12:00
HW-SB-12-S-P-12	1607218-12		SOIL	12-Jul-16	13:00
HW-SB-13-S-P-11	1607218-13		SOIL	12-Jul-16	14:00



ALS Environmental

225 Commerce Drive, Fort Collins, Colorado 80524
 TP: (970) 443-1511 PH: (970) 490-1511 FX: (970) 490-1522

Chain-of-Custody

Form 20218

PROJECT NAME UNC New Haven CT		SAMPLER AC/MP	DATE	7/13/2016	PAGE	1 of 2	WORKORDER # 1607218
PROJECT No.	10-1007.00	SITE ID	TURNAROUND	30 d	DISPOSAL	By Lab or	Return to Client
EDD FORMAT	Standard						
PURCHASE ORDER							
BILL TO COMPANY	Cabrera Services						
INVOICE ATTN TO	Accounts Payable						
ADDRESS	50 Founders Plaza Suite 207						
CITY / STATE / ZIP	East Hartford CT 06108						
PHONE	860-569-0095						
FAX							
E-MAIL	gbright@cabreraseservices.com						
E-MAIL	gbright@cabreraseservices.com						
Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC
1	ML-SB-01-S-P-17	Soil	7/11/2016	10:00:00 AM	1	n/a	X
2	ML-SB-02-S-P-14	Soil	7/11/2016	11:00:00 AM	1	n/a	X
3	ML-SB-03-S-P-12	Soil	7/11/2016	12:00:00 PM	1	n/a	X
4	ML-SB-04-S-P-9	Soil	7/11/2016	1:00:00 PM	1	n/a	X
5	ML-SB-05-S-P-9	Soil	7/11/2016	2:00:00 PM	1	n/a	X
6	ML-SB-06-S-P-11	Soil	7/11/2016	3:00:00 PM	1	n/a	X
7	HW-SB-07-S-P-10	Soil	7/12/2016	08:00:00 AM	1	n/a	X
8	HW-SB-08-S-P-10	Soil	7/12/2016	09:00:00 AM	1	n/a	X
9	HW-SB-09-S-P-10	Soil	7/12/2016	10:00:00 AM	1	n/a	X
10	HW-SB-10-S-P-10	Soil	7/12/2016	11:00:00 AM	1	n/a	X

*Time Zone (Circle): EST GST MST PST Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

For metals or anions, please detail analytes below.

Comments:

Please return samples to client. Shipping instructions should be arranged with the POC listed above.

ML=Met Lab / HW=Hot Waste Processing

of 10

Preservative Key:

1 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035

SIGNATURE	DATE	TIME
<i>[Signature]</i>	7/16	1300
PRINTED NAME	DATE	TIME
AI Craig	7/14/16	1025
RECEIVED BY		
RELINQUISHED BY		
RECEIVED BY		
RELINQUISHED BY		



ALS Environmental

225 Commerce Drive, Fort Collins, Colorado 80524
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Chain-of-Custody

Form 20268

WORKORDER #	1607218
PAGE	2 of 2
DISPOSAL	By Lab or Return to Client

PROJECT NAME	PROJECT No.	COMPANY NAME	SEND REPORT TO	ADDRESS	CITY / STATE / ZIP	PHONE	FAX	E-MAIL	SAMPLER AC/IMP	SITE ID	EDD FORMAT	PURCHASE ORDER	BILL TO COMPANY	INVOICE ATTN TO	ADDRESS	CITY / STATE / ZIP	PHONE	FAX	E-MAIL	DATE	TURNAROUND	DATE	By Lab or Return to Client
UNC New Haven CT	10-1007.00	Cabrera Services		50 Founders Plaza Suite 207	East Hartford CT 06108	860-569-0095		gbright@cabreraservices.com			Standard		Cabrera Services	Accounts Payable	50 Founders Plaza Suite 207	East Hartford CT 06108	860-569-0095		gbright@cabreraservices.com	7/13/2016	30 d		
Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC																
11	HW-SB-11-S-P-10	Soil	7/12/2016	12:00:00 PM	1	n/a	X																
12	HW-SB-12-S-P-12	Soil	7/12/2016	1:00:00 PM	1	n/a	X																
13	HW-SB-13-S-P-11	Soil	7/12/2016	2:00:00 PM	1	n/a	X																

*Time Zone (Circle): EST CST MST PST Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

For metals or anions, please detail analytes below.

Comments:

Please return samples to client. Shipping instructions should be arranged with the POC listed above.

ML=Met Lab / HW=Hot Waste Processing

Preservative Key: 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035

SIGNATURE	PRINTED NAME	DATE	TIME
<i>[Signature]</i>	Al Craig	7/13/16	1320
<i>[Signature]</i>	Rebecca Merola	7/14/16	1025

RELINQUISHED BY RECEIVED BY RELINQUISHED BY RECEIVED BY RELINQUISHED BY RECEIVED BY



ALS Environmental - Fort Collins
CONDITION OF SAMPLE UPON RECEIPT FORM

Client: Cabrera

Workorder No: 1607218

Project Manager: LKS

Initials: RLR

Date: 7/14/16

1. Does this project require any special handling in addition to standard ALS procedures?		YES	<input checked="" type="radio"/> NO
2. Are custody seals on shipping containers intact?	<input checked="" type="radio"/> NONE	YES	NO
3. Are Custody seals on sample containers intact?	<input checked="" type="radio"/> NONE	YES	NO
4. Is there a COC (Chain-of-Custody) present or other representative documents?		<input checked="" type="radio"/> YES	NO
5. Are the COC and bottle labels complete and legible?		<input checked="" type="radio"/> YES	NO
6. Is the COC in agreement with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.)		<input checked="" type="radio"/> YES	NO
7. Were airbills / shipping documents present and/or removable?	DROP OFF	<input checked="" type="radio"/> YES	NO
8. Are all aqueous samples requiring preservation preserved correctly? (excluding volatiles)	<input checked="" type="radio"/> N/A	YES	NO
9. Are all aqueous non-preserved samples pH 4-9?	<input checked="" type="radio"/> N/A	YES	NO
10. Is there sufficient sample for the requested analyses?		<input checked="" type="radio"/> YES	NO
11. Were all samples placed in the proper containers for the requested analyses?		<input checked="" type="radio"/> YES	NO
12. Are all samples within holding times for the requested analyses?		<input checked="" type="radio"/> YES	NO
13. Were all sample containers received intact? (not broken or leaking, etc.)		<input checked="" type="radio"/> YES	NO
14. Are all samples requiring no headspace (VOC, GRO, RSK/MEE, Rx CN/S, radon) headspace free? Size of bubble: ___ < green pea ___ > green pea	<input checked="" type="radio"/> N/A	YES	NO
15. Do any water samples contain sediment? Amount Amount of sediment: ___ dusting ___ moderate ___ heavy	<input checked="" type="radio"/> N/A	YES	NO
16. Were the samples shipped on ice?		YES	<input checked="" type="radio"/> NO
17. Were cooler temperatures measured at 0.1-6.0°C? IR gun used*: #2 #4	<input checked="" type="radio"/> RAD ONLY	YES	<input checked="" type="radio"/> NO
Cooler #: <u>1</u>			
Temperature (°C): <u>AMB</u>			
No. of custody seals on cooler: <u>0</u>			
External µR/hr reading: <u>12</u>			
Background µR/hr reading: <u>11</u>			
Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? <input checked="" type="radio"/> YES <input type="radio"/> NO / NA (If no, see Form 008.)			

Additional Information: PROVIDE DETAILS BELOW FOR A NO RESPONSE TO ANY QUESTION ABOVE, EXCEPT #1 AND #16.

If applicable, was the client contacted? YES / NO / NA Contact: [Signature] Date/Time: _____

Project Manager Signature / Date: [Signature] 7/14/16

ORIGIN ID:CCMA (800) 819-3332
NAME PL:ONSRI
CABRERA SERVICES INC
50 FOUNDERS PLAZA, SUITE 207
EAST HARTFORD, CT 06108
UNITED STATES US

SHIP DATE: 13JUL16
ACTWT: 30.00 LB
CAD: 105318400INET3730
DIM3: 36X18X18 IN
BILL SENDER

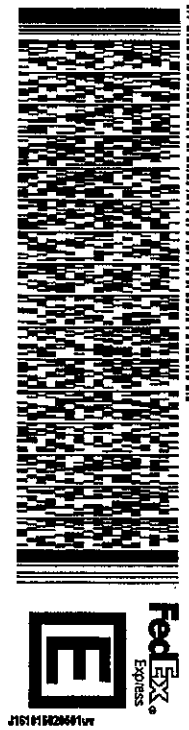
1607218

TO LANCE STEERE
ALS LABORATORIES
225 COMMERCE DR

12-0

FORT COLLINS CO 80524
(970) 490-1511 REF: 10-100715

PO: DEPT:



TRK# 7767 3444 9091
0201

THU - 14 JUL 10:30A
PRIORITY OVERNIGHT

NA FTCA
CO-US DEN 80524



After printing this label:

1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
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Isotopic Uranium by Alpha Spectroscopy

PAI 714 Rev 12

Method Blank Results

Lab Name: ALS -- Fort Collins

Work Order Number: 1607218

Client Name: Cabrera Services, Inc.

ClientProject ID: UNC New Haven CT 10-1007.00

Lab ID: AS160802-1MB

Sample Matrix: SOIL

Prep Batch: AS160802-1

Final Aliquot: 2.00 g

Prep SOP: PAI 778 Rev 14

QCBatchID: AS160802-1-2

Result Units: pCi/g

Date Collected: 03-Aug-16

Run ID: AS160802-1UR

File Name: Spectrum #1

Date Prepared: 03-Aug-16

Count Time: 420 minutes

Date Analyzed: 10-Aug-16

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Requested MDC	DL	Lab Qualifier
13966-29-5	U-234	0.0080 +/- 0.0092	0.0127	0.05	NA	U
15117-96-1	U-235	-0.0007 +/- 0.0098	0.0207	0.05	NA	U
7440-61-1	U-238	0.0070 +/- 0.0093	0.0155	0.05	NA	U

Chemical Yield Summary

Carrier/Tracer	Amount Added	Result	Units	Yield	Control Limits	Flag
U-232	2.353	1.77	pCi/g	75.1	30 - 110 %	

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

Abbreviations:

TPU - Total Propagated Uncertainty

MDC - Minimum Detectable Concentration

BDL - Below Detection Limit

M - Requested MDC not met.

B - Analyte concentration greater than MDC.

B3 - Analyte concentration greater than MDC but less than Requested MDC.

DL - Decision Level

Data Package ID: UR1607218-1

Isotopic Uranium by Alpha Spectroscopy

PAI 714 Rev 12

Method Blank Results

Lab Name: ALS -- Fort Collins

Work Order Number: 1607218

Client Name: Cabrera Services, Inc.

ClientProject ID: UNC New Haven CT 10-1007.00

Lab ID: AS160803-7MB

Sample Matrix: SOIL

Prep Batch: AS160803-7

Final Aliquot: 2.00 g

Prep SOP: PAI 778 Rev 14

QCBatchID: AS160803-7-2

Result Units: pCi/g

Date Collected: 03-Aug-16

Run ID: AS160803-7U

File Name: Spectrum #1

Date Prepared: 03-Aug-16

Count Time: 360 minutes

Date Analyzed: 09-Aug-16

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Requested MDC	DL	Lab Qualifier
13966-29-5	U-234	0.022 +/- 0.016	0.014	0.05	NA	B3
15117-96-1	U-235	0.002 +/- 0.011	0.016	0.05	NA	U
7440-61-1	U-238	0.009 +/- 0.010	0.014	0.05	NA	U

Chemical Yield Summary

Carrier/Tracer	Amount Added	Result	Units	Yield	Control Limits	Flag
U-232	2.353	1.78	pCi/g	75.6	30 - 110 %	

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

Abbreviations:

TPU - Total Propagated Uncertainty

MDC - Minimum Detectable Concentration

BDL - Below Detection Limit

M - Requested MDC not met.

B - Analyte concentration greater than MDC.

B3 - Analyte concentration greater than MDC but less than Requested MDC.

DL - Decision Level

Data Package ID: UR1607218-1

Isotopic Uranium by Alpha Spectroscopy

PAI 714 Rev 12

Laboratory Control Sample(s)

Lab Name: ALS -- Fort Collins
Work Order Number: 1607218
Client Name: Cabrera Services, Inc.
ClientProject ID: UNC New Haven CT 10-1007.00

Lab ID: AS160802-1LCS	Sample Matrix: SOIL	Prep Batch: AS160802-1	Final Aliquot: 2.00 g
	Prep SOP: PAI 778 Rev 14	QCBatchID: AS160802-1-2	Result Units: pCi/g
	Date Collected: 03-Aug-16	Run ID: AS160802-1UR	File Name: Spectrum #1
	Date Prepared: 03-Aug-16	Count Time: 420 minutes	
	Date Analyzed: 10-Aug-16		

CASNO	Target Nuclide	Results +/- 2s TPU	MDC	Spike Added	% Rec	Control Limits	Lab Qualifier
13966-29-5	U-234	2.19 +/- 0.37	0.01	2.208	99.4	82 - 122	P
7440-61-1	U-238	2.44 +/- 0.41	0.02	2.292	106	82 - 122	P

Chemical Yield Summary

Carrier/Tracer	Amount Added	Result	Units	Yield	Control Limits	Flag
U-232	2.353	1.92	pCi/g	81.5	30 - 110 %	

Comments:

Qualifiers/Flags:

- U - Result is less than the sample specific MDC.
- LT - Result is less than Requested MDC, greater than sample specific MDC.
- Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
- Y2 - Chemical Yield outside default limits.
- L - LCS Recovery below lower control limit.
- H - LCS Recovery above upper control limit.
- P - LCS Recovery within control limits.
- M - The requested MDC was not met.
- M3 - The requested MDC was not met, but thereported activity is greater than the reported MDC.

Abbreviations:

- TPU - Total Propagated Uncertainty
- MDC - Minimum Detectable Concentration

Data Package ID: UR1607218-1

Isotopic Uranium by Alpha Spectroscopy

PAI 714 Rev 12

Laboratory Control Sample(s)

Lab Name: ALS -- Fort Collins
Work Order Number: 1607218
Client Name: Cabrera Services, Inc.
ClientProject ID: UNC New Haven CT 10-1007.00

Lab ID: AS160802-1LCSD

Sample Matrix: SOIL
Prep SOP: PAI 778 Rev 14
Date Collected: 03-Aug-16
Date Prepared: 03-Aug-16
Date Analyzed: 10-Aug-16

Prep Batch: AS160802-1
QCBatchID: AS160802-1-2
Run ID: AS160802-1UR
Count Time: 420 minutes

Final Aliquot: 2.00 g
Result Units: pCi/g
File Name: Spectrum #1

CASNO	Target Nuclide	Results +/- 2s TPU	MDC	Spike Added	% Rec	Control Limits	Lab Qualifier
13966-29-5	U-234	2.33 +/- 0.41	0.01	2.208	106	82 - 122	P
7440-61-1	U-238	2.49 +/- 0.44	0.02	2.292	109	82 - 122	P

Chemical Yield Summary

Carrier/Tracer	Amount Added	Result	Units	Yield	Control Limits	Flag
U-232	2.353	1.54	pCi/g	65.3	30 - 110 %	

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.
LT - Result is less than Requested MDC, greater than sample specific MDC.
Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
Y2 - Chemical Yield outside default limits.
L - LCS Recovery below lower control limit.
H - LCS Recovery above upper control limit.
P - LCS Recovery within control limits.
M - The requested MDC was not met.
M3 - The requested MDC was not met, but thereported activity is greater than the reported MDC.

Abbreviations:

TPU - Total Propagated Uncertainty
MDC - Minimum Detectable Concentration

Data Package ID: UR1607218-1

Isotopic Uranium by Alpha Spectroscopy

PAI 714 Rev 12

Laboratory Control Sample(s)

Lab Name: ALS -- Fort Collins
Work Order Number: 1607218
Client Name: Cabrera Services, Inc.
ClientProject ID: UNC New Haven CT 10-1007.00

Lab ID: AS160803-7LCS	Sample Matrix: SOIL Prep SOP: PAI 778 Rev 14 Date Collected: 03-Aug-16 Date Prepared: 03-Aug-16 Date Analyzed: 09-Aug-16	Prep Batch: AS160803-7 QCBatchID: AS160803-7-2 Run ID: AS160803-7U Count Time: 360 minutes	Final Aliquot: 2.00 g Result Units: pCi/g File Name: Spectrum #1
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CASNO	Target Nuclide	Results +/- 2s TPU	MDC	Spike Added	% Rec	Control Limits	Lab Qualifier
13966-29-5	U-234	2.23 +/- 0.39	0.01	2.208	101	82 - 122	P
7440-61-1	U-238	2.43 +/- 0.42	0.02	2.292	106	82 - 122	P

Chemical Yield Summary

Carrier/Tracer	Amount Added	Result	Units	Yield	Control Limits	Flag
U-232	2.353	1.85	pCi/g	78.5	30 - 110 %	

Comments:

Qualifiers/Flags:
U - Result is less than the sample specific MDC.
LT - Result is less than Requested MDC, greater than sample specific MDC.
Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
Y2 - Chemical Yield outside default limits.
L - LCS Recovery below lower control limit.
H - LCS Recovery above upper control limit.
P - LCS Recovery within control limits.
M - The requested MDC was not met.
M3 - The requested MDC was not met, but thereported activity is greater than the reported MDC.

Abbreviations:
TPU - Total Propagated Uncertainty
MDC - Minimum Detectable Concentration

Data Package ID: UR1607218-1

Isotopic Uranium by Alpha Spectroscopy

PAI 714 Rev 12

Duplicate Sample Results (DER)

Lab Name: ALS -- Fort Collins

Work Order Number: 1607218

Client Name: Cabrera Services, Inc.

ClientProject ID: UNC New Haven CT 10-1007.00

Field ID:	ML-SB-02-S-P-14
Lab ID:	1607218-2DUP

Sample Matrix: SOIL
Prep SOP: PAI 778 Rev 14
Date Collected: 11-Jul-16
Date Prepared: 03-Aug-16
Date Analyzed: 09-Aug-16

Prep Batch: AS160803-7
QCBatchID: AS160803-7-2
Run ID: AS160803-7U
Count Time: 360 minutes

Final Aliquot: 1.01 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: Spectrum #1

CASNO	Analyte	Sample				Duplicate				DER	DER Lim
		Result +/-	2 s TPU	MDC	Flags	Result +/-	2 s TPU	MDC	Flags		
13966-29-5	U-234	0.50 +/-	0.14	0.02		0.40 +/-	0.11	0.03		0.54	2.13
15117-96-1	U-235	0.016 +/-	0.025	0.046	U	0 +/-	0.021	0.043	U	0.49	2.13
7440-61-1	U-238	0.41 +/-	0.12	0.04		0.36 +/-	0.10	0.03		0.303	2.13

Comments:

Duplicate Qualifiers/Flags:

U - Result is less than the sample specific MDC.
Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.
Y2 - Chemical Yield outside default limits.
W - DER is greater than Warning Limit of 1.42
D - DER is greater than Control Limit of 2.13
LT - Result is less than Request MDC, greater than sample specific MDC
M - Requested MDC not met.
M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
L - LCS Recovery below lower control limit.
H - LCS Recovery above upper control limit.
P - LCS, Matrix Spike Recovery within control limits.
N - Matrix Spike Recovery outside control limits

Abbreviations:

TPU - Total Propagated Uncertainty
DER - Duplicate Error Ratio
BDL - Below Detection Limit
NR - Not Reported

Data Package ID: UR1607218-1

Isotopic Uranium by Alpha Spectroscopy

PAI 714 Rev 12

Duplicate Sample Results (DER)

Lab Name: ALS -- Fort Collins

Work Order Number: 1607218

Client Name: Cabrera Services, Inc.

ClientProject ID: UNC New Haven CT 10-1007.00

Field ID:	
Lab ID:	AS160802-1LCSD

Sample Matrix: SOIL
Prep SOP: PAI 778 Rev 14
Date Collected: 03-Aug-16
Date Prepared: 03-Aug-16
Date Analyzed: 10-Aug-16

Prep Batch: AS160802-1
QCBatchID: AS160802-1-2
Run ID: AS160802-1UR
Count Time: 420 minutes

Final Aliquot: 2.00 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: Spectrum #1

CASNO	Analyte	Sample				Duplicate				DER	DER Lim
		Result +/-	2 s TPU	MDC	Flags	Result +/-	2 s TPU	MDC	Flags		
13966-29-5	U-234	2.19 +/-	0.37	0.01	P	2.33 +/-	0.41	0.01	P	0.252	2.13
7440-61-1	U-238	2.44 +/-	0.41	0.02	P	2.49 +/-	0.44	0.02	P	0.0861	2.13

Comments:

Duplicate Qualifiers/Flags:

U - Result is less than the sample specific MDC.
Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.
Y2 - Chemical Yield outside default limits.
W - DER is greater than Warning Limit of 1.42
D - DER is greater than Control Limit of 2.13
LT - Result is less than Request MDC, greater than sample specific MDC
M - Requested MDC not met.
M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
L - LCS Recovery below lower control limit.
H - LCS Recovery above upper control limit.
P - LCS, Matrix Spike Recovery within control limits.
N - Matrix Spike Recovery outside control limits

Abbreviations:

TPU - Total Propagated Uncertainty
DER - Duplicate Error Ratio
BDL - Below Detection Limit
NR - Not Reported

Data Package ID: UR1607218-1

Isotopic Uranium by Alpha Spectroscopy

PAI 714 Rev 12

Sample Results

Lab Name: ALS -- Fort Collins

Work Order Number: 1607218

Client Name: Cabrera Services, Inc.

ClientProject ID: UNC New Haven CT 10-1007.00

Field ID:	ML-SB-01-S-P-17
Lab ID:	1607218-1

Sample Matrix: SOIL
Prep SOP: PAI 778 Rev 14
Date Collected: 11-Jul-16
Date Prepared: 03-Aug-16
Date Analyzed: 09-Aug-16

Prep Batch: AS160803-7
QCBatchID: AS160803-7-2
Run ID: AS160803-7U
Count Time: 360 minutes
Report Basis: Dry Weight

Final Aliquot: 1.03 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: Spectrum #1

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Requested MDC	DL	Lab Qualifier
13966-29-5	U-234	1.08 +/- 0.23	0.03	0.05	NA	
15117-96-1	U-235	0.066 +/- 0.040	0.015	0.05	NA	
7440-61-1	U-238	0.40 +/- 0.11	0.03	0.05	NA	

Chemical Yield Summary

Carrier/Tracer	Amount Added	Result	Units	Yield	Control Limits	Flag
U-232	4.580	3.50	pCi/g	76.5	30 - 110 %	

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty

MDC - Minimum Detectable Concentration

BDL - Below Detection Limit

DL - Decision Level

Data Package ID: UR1607218-1

Isotopic Uranium by Alpha Spectroscopy

PAI 714 Rev 12

Sample Results

Lab Name: ALS -- Fort Collins

Work Order Number: 1607218

Client Name: Cabrera Services, Inc.

ClientProject ID: UNC New Haven CT 10-1007.00

Field ID:	ML-SB-02-S-P-14
Lab ID:	1607218-2

Sample Matrix: SOIL
Prep SOP: PAI 778 Rev 14
Date Collected: 11-Jul-16
Date Prepared: 03-Aug-16
Date Analyzed: 09-Aug-16

Prep Batch: AS160803-7
QCBatchID: AS160803-7-2
Run ID: AS160803-7U
Count Time: 360 minutes
Report Basis: Dry Weight

Final Aliquot: 1.06 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: Spectrum #1

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Requested MDC	DL	Lab Qualifier
13966-29-5	U-234	0.50 +/- 0.14	0.02	0.05	NA	
15117-96-1	U-235	0.016 +/- 0.025	0.046	0.05	NA	U
7440-61-1	U-238	0.41 +/- 0.12	0.04	0.05	NA	

Chemical Yield Summary

Carrier/Tracer	Amount Added	Result	Units	Yield	Control Limits	Flag
U-232	4.436	2.75	pCi/g	61.9	30 - 110 %	

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty

MDC - Minimum Detectable Concentration

BDL - Below Detection Limit

DL - Decision Level

Data Package ID: UR1607218-1

Isotopic Uranium by Alpha Spectroscopy

PAI 714 Rev 12

Sample Duplicate Results

Lab Name: ALS -- Fort Collins
Work Order Number: 1607218
Client Name: Cabrera Services, Inc.
ClientProject ID: UNC New Haven CT 10-1007.00

Field ID:	ML-SB-02-S-P-14
Lab ID:	1607218-2DUP

Sample Matrix: SOIL
Prep SOP: PAI 778 Rev 14
Date Collected: 11-Jul-16
Date Prepared: 03-Aug-16
Date Analyzed: 09-Aug-16

Prep Batch: AS160803-7
QCBatchID: AS160803-7-2
Run ID: AS160803-7U
Count Time: 360 minutes
Report Basis: Dry Weight

Final Aliquot: 1.01 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: Spectrum #1

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Requested MDC	DL	Lab Qualifier
13966-29-5	U-234	0.40 +/- 0.11	0.03	0.05	NA	
15117-96-1	U-235	0 +/- 0.021	0.043	0.05	NA	U
7440-61-1	U-238	0.36 +/- 0.10	0.03	0.05	NA	

Chemical Yield Summary

Carrier/Tracer	Amount Added	Result	Units	Yield	Control Limits	Flag
U-232	4.655	3.72	pCi/g	79.8	30 - 110 %	

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.
Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.
Y2 - Chemical Yield outside default limits.
LT - Result is less than Requested MDC, greater than sample specific MDC.
M - The requested MDC was not met.
M3 - The requested MDC was not met, but thereported activity is greater than the reported MDC.
W - DER is greater than Warning Limit of 1.42
D - DER is greater than Control Limit of 2.13

Abbreviations:

TPU - Total Propagated Uncertainty
MDC - Minimum Detectable Concentration
BDL - Below Detection Limit
DL - Decision Level

Data Package ID: UR1607218-1

Date Printed: Thursday, August 11, 2016

ALS -- Fort Collins
LIMS Version: 6.821

Page 1 of 1

Isotopic Uranium by Alpha Spectroscopy

PAI 714 Rev 12

Sample Results

Lab Name: ALS -- Fort Collins

Work Order Number: 1607218

Client Name: Cabrera Services, Inc.

ClientProject ID: UNC New Haven CT 10-1007.00

Field ID:	ML-SB-03-S-P-12
Lab ID:	1607218-3

Sample Matrix: SOIL
Prep SOP: PAI 778 Rev 14
Date Collected: 11-Jul-16
Date Prepared: 03-Aug-16
Date Analyzed: 09-Aug-16

Prep Batch: AS160803-7
QCBatchID: AS160803-7-2
Run ID: AS160803-7U
Count Time: 360 minutes
Report Basis: Dry Weight

Final Aliquot: 1.09 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: Spectrum #1

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Requested MDC	DL	Lab Qualifier
13966-29-5	U-234	0.68 +/- 0.16	0.03	0.05	NA	
15117-96-1	U-235	0.028 +/- 0.027	0.036	0.05	NA	U
7440-61-1	U-238	0.36 +/- 0.10	0.04	0.05	NA	

Chemical Yield Summary

Carrier/Tracer	Amount Added	Result	Units	Yield	Control Limits	Flag
U-232	4.325	3.28	pCi/g	75.8	30 - 110 %	

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty

MDC - Minimum Detectable Concentration

BDL - Below Detection Limit

DL - Decision Level

Data Package ID: UR1607218-1

Isotopic Uranium by Alpha Spectroscopy

PAI 714 Rev 12

Sample Results

Lab Name: ALS -- Fort Collins

Work Order Number: 1607218

Client Name: Cabrera Services, Inc.

ClientProject ID: UNC New Haven CT 10-1007.00

Field ID:	ML-SB-04-S-P-9
Lab ID:	1607218-4

Sample Matrix: SOIL
Prep SOP: PAI 778 Rev 14
Date Collected: 11-Jul-16
Date Prepared: 03-Aug-16
Date Analyzed: 09-Aug-16

Prep Batch: AS160803-7
QCBatchID: AS160803-7-2
Run ID: AS160803-7U
Count Time: 360 minutes
Report Basis: Dry Weight

Final Aliquot: 1.01 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: Spectrum #1

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Requested MDC	DL	Lab Qualifier
13966-29-5	U-234	0.53 +/- 0.13	0.03	0.05	NA	
15117-96-1	U-235	0.022 +/- 0.022	0.015	0.05	NA	LT
7440-61-1	U-238	0.48 +/- 0.12	0.03	0.05	NA	

Chemical Yield Summary

Carrier/Tracer	Amount Added	Result	Units	Yield	Control Limits	Flag
U-232	4.648	3.86	pCi/g	83.0	30 - 110 %	

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty

MDC - Minimum Detectable Concentration

BDL - Below Detection Limit

DL - Decision Level

Data Package ID: UR1607218-1

Isotopic Uranium by Alpha Spectroscopy

PAI 714 Rev 12

Sample Results

Lab Name: ALS -- Fort Collins

Work Order Number: 1607218

Client Name: Cabrera Services, Inc.

ClientProject ID: UNC New Haven CT 10-1007.00

Field ID:	ML-SB-05-S-P-9
Lab ID:	1607218-5

Sample Matrix: SOIL
Prep SOP: PAI 778 Rev 14
Date Collected: 11-Jul-16
Date Prepared: 03-Aug-16
Date Analyzed: 09-Aug-16

Prep Batch: AS160803-7
QCBatchID: AS160803-7-2
Run ID: AS160803-7U
Count Time: 360 minutes
Report Basis: Dry Weight

Final Aliquot: 1.01 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: Spectrum #1

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Requested MDC	DL	Lab Qualifier
13966-29-5	U-234	0.298 +/- 0.094	0.040	0.05	NA	
15117-96-1	U-235	0.044 +/- 0.034	0.017	0.05	NA	LT
7440-61-1	U-238	0.34 +/- 0.10	0.03	0.05	NA	

Chemical Yield Summary

Carrier/Tracer	Amount Added	Result	Units	Yield	Control Limits	Flag
U-232	4.671	3.28	pCi/g	70.2	30 - 110 %	

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty

MDC - Minimum Detectable Concentration

BDL - Below Detection Limit

DL - Decision Level

Data Package ID: UR1607218-1

Isotopic Uranium by Alpha Spectroscopy

PAI 714 Rev 12

Sample Results

Lab Name: ALS -- Fort Collins

Work Order Number: 1607218

Client Name: Cabrera Services, Inc.

ClientProject ID: UNC New Haven CT 10-1007.00

Field ID:	ML-SB-06-S-P-11
Lab ID:	1607218-6

Sample Matrix: SOIL
Prep SOP: PAI 778 Rev 14
Date Collected: 11-Jul-16
Date Prepared: 03-Aug-16
Date Analyzed: 09-Aug-16

Prep Batch: AS160803-7
QCBatchID: AS160803-7-2
Run ID: AS160803-7U
Count Time: 360 minutes
Report Basis: Dry Weight

Final Aliquot: 1.01 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: Spectrum #1

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Requested MDC	DL	Lab Qualifier
13966-29-5	U-234	0.36 +/- 0.11	0.03	0.05	NA	
15117-96-1	U-235	0.041 +/- 0.034	0.034	0.05	NA	LT
7440-61-1	U-238	0.33 +/- 0.10	0.04	0.05	NA	

Chemical Yield Summary

Carrier/Tracer	Amount Added	Result	Units	Yield	Control Limits	Flag
U-232	4.652	3.19	pCi/g	68.5	30 - 110 %	

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty

MDC - Minimum Detectable Concentration

BDL - Below Detection Limit

DL - Decision Level

Data Package ID: UR1607218-1

Isotopic Uranium by Alpha Spectroscopy

PAI 714 Rev 12

Sample Results

Lab Name: ALS -- Fort Collins

Work Order Number: 1607218

Client Name: Cabrera Services, Inc.

ClientProject ID: UNC New Haven CT 10-1007.00

Field ID:	HW-SB-07-S-P-10
Lab ID:	1607218-7

Sample Matrix: SOIL
Prep SOP: PAI 778 Rev 14
Date Collected: 12-Jul-16
Date Prepared: 03-Aug-16
Date Analyzed: 09-Aug-16

Prep Batch: AS160803-7
QCBatchID: AS160803-7-2
Run ID: AS160803-7U
Count Time: 360 minutes
Report Basis: Dry Weight

Final Aliquot: 1.02 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: Spectrum #1

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Requested MDC	DL	Lab Qualifier
13966-29-5	U-234	1.04 +/- 0.22	0.03	0.05	NA	
15117-96-1	U-235	0.030 +/- 0.027	0.016	0.05	NA	LT
7440-61-1	U-238	0.67 +/- 0.16	0.01	0.05	NA	

Chemical Yield Summary

Carrier/Tracer	Amount Added	Result	Units	Yield	Control Limits	Flag
U-232	4.601	3.30	pCi/g	71.6	30 - 110 %	

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty

MDC - Minimum Detectable Concentration

BDL - Below Detection Limit

DL - Decision Level

Data Package ID: UR1607218-1

Isotopic Uranium by Alpha Spectroscopy

PAI 714 Rev 12

Sample Results

Lab Name: ALS -- Fort Collins

Work Order Number: 1607218

Client Name: Cabrera Services, Inc.

ClientProject ID: UNC New Haven CT 10-1007.00

Field ID:	HW-SB-08-S-P-10
Lab ID:	1607218-8

Sample Matrix: SOIL
Prep SOP: PAI 778 Rev 14
Date Collected: 12-Jul-16
Date Prepared: 03-Aug-16
Date Analyzed: 09-Aug-16

Prep Batch: AS160803-7
QCBatchID: AS160803-7-2
Run ID: AS160803-7U
Count Time: 360 minutes
Report Basis: Dry Weight

Final Aliquot: 1.00 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: Spectrum #1

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Requested MDC	DL	Lab Qualifier
13966-29-5	U-234	0.61 +/- 0.15	0.03	0.05	NA	
15117-96-1	U-235	0.026 +/- 0.025	0.030	0.05	NA	U
7440-61-1	U-238	0.37 +/- 0.10	0.03	0.05	NA	

Chemical Yield Summary

Carrier/Tracer	Amount Added	Result	Units	Yield	Control Limits	Flag
U-232	4.694	3.81	pCi/g	81.3	30 - 110 %	

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty

MDC - Minimum Detectable Concentration

BDL - Below Detection Limit

DL - Decision Level

Data Package ID: UR1607218-1

Isotopic Uranium by Alpha Spectroscopy

PAI 714 Rev 12

Sample Results

Lab Name: ALS -- Fort Collins

Work Order Number: 1607218

Client Name: Cabrera Services, Inc.

ClientProject ID: UNC New Haven CT 10-1007.00

Field ID:	HW-SB-09-S-P-10
Lab ID:	1607218-9

Sample Matrix: SOIL
Prep SOP: PAI 778 Rev 14
Date Collected: 12-Jul-16
Date Prepared: 03-Aug-16
Date Analyzed: 10-Aug-16

Prep Batch: AS160802-1
QCBatchID: AS160802-1-2
Run ID: AS160802-1UR
Count Time: 420 minutes
Report Basis: Dry Weight

Final Aliquot: 1.06 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: Spectrum #1

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Requested MDC	DL	Lab Qualifier
13966-29-5	U-234	0.56 +/- 0.13	0.03	0.05	NA	
15117-96-1	U-235	0.019 +/- 0.019	0.013	0.05	NA	LT
7440-61-1	U-238	0.40 +/- 0.10	0.02	0.05	NA	

Chemical Yield Summary

Carrier/Tracer	Amount Added	Result	Units	Yield	Control Limits	Flag
U-232	4.438	3.29	pCi/g	74.1	30 - 110 %	

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty

MDC - Minimum Detectable Concentration

BDL - Below Detection Limit

DL - Decision Level

Data Package ID: UR1607218-1

Isotopic Uranium by Alpha Spectroscopy

PAI 714 Rev 12

Sample Results

Lab Name: ALS -- Fort Collins

Work Order Number: 1607218

Client Name: Cabrera Services, Inc.

ClientProject ID: UNC New Haven CT 10-1007.00

Field ID:	HW-SB-10-S-P-10
Lab ID:	1607218-10

Sample Matrix: SOIL
Prep SOP: PAI 778 Rev 14
Date Collected: 12-Jul-16
Date Prepared: 03-Aug-16
Date Analyzed: 10-Aug-16

Prep Batch: AS160802-1
QCBatchID: AS160802-1-2
Run ID: AS160802-1UR
Count Time: 420 minutes
Report Basis: Dry Weight

Final Aliquot: 1.05 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: Spectrum #1

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Requested MDC	DL	Lab Qualifier
13966-29-5	U-234	0.66 +/- 0.15	0.01	0.05	NA	
15117-96-1	U-235	0.051 +/- 0.035	0.035	0.05	NA	
7440-61-1	U-238	0.45 +/- 0.11	0.03	0.05	NA	

Chemical Yield Summary

Carrier/Tracer	Amount Added	Result	Units	Yield	Control Limits	Flag
U-232	4.493	3.31	pCi/g	73.6	30 - 110 %	

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty

MDC - Minimum Detectable Concentration

BDL - Below Detection Limit

DL - Decision Level

Data Package ID: UR1607218-1

Isotopic Uranium by Alpha Spectroscopy

PAI 714 Rev 12

Sample Results

Lab Name: ALS -- Fort Collins

Work Order Number: 1607218

Client Name: Cabrera Services, Inc.

ClientProject ID: UNC New Haven CT 10-1007.00

Field ID:	HW-SB-11-S-P-10
Lab ID:	1607218-11

Sample Matrix: SOIL
Prep SOP: PAI 778 Rev 14
Date Collected: 12-Jul-16
Date Prepared: 03-Aug-16
Date Analyzed: 10-Aug-16

Prep Batch: AS160802-1
QCBatchID: AS160802-1-2
Run ID: AS160802-1UR
Count Time: 420 minutes
Report Basis: Dry Weight

Final Aliquot: 1.01 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: Spectrum #1

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Requested MDC	DL	Lab Qualifier
13966-29-5	U-234	0.77 +/- 0.17	0.02	0.05	NA	
15117-96-1	U-235	0.013 +/- 0.021	0.038	0.05	NA	U
7440-61-1	U-238	0.333 +/- 0.092	0.029	0.05	NA	

Chemical Yield Summary

Carrier/Tracer	Amount Added	Result	Units	Yield	Control Limits	Flag
U-232	4.679	3.78	pCi/g	80.7	30 - 110 %	

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty

MDC - Minimum Detectable Concentration

BDL - Below Detection Limit

DL - Decision Level

Data Package ID: UR1607218-1

Isotopic Uranium by Alpha Spectroscopy

PAI 714 Rev 12

Sample Results

Lab Name: ALS -- Fort Collins

Work Order Number: 1607218

Client Name: Cabrera Services, Inc.

ClientProject ID: UNC New Haven CT 10-1007.00

Field ID:	HW-SB-12-S-P-12
Lab ID:	1607218-12

Sample Matrix: SOIL
Prep SOP: PAI 778 Rev 14
Date Collected: 12-Jul-16
Date Prepared: 03-Aug-16
Date Analyzed: 10-Aug-16

Prep Batch: AS160802-1
QCBatchID: AS160802-1-2
Run ID: AS160802-1UR
Count Time: 420 minutes
Report Basis: Dry Weight

Final Aliquot: 1.05 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: Spectrum #1

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Requested MDC	DL	Lab Qualifier
13966-29-5	U-234	2.64 +/- 0.48	0.03	0.05	NA	
15117-96-1	U-235	0.116 +/- 0.054	0.036	0.05	NA	
7440-61-1	U-238	0.49 +/- 0.12	0.04	0.05	NA	

Chemical Yield Summary

Carrier/Tracer	Amount Added	Result	Units	Yield	Control Limits	Flag
U-232	4.496	3.14	pCi/g	69.8	30 - 110 %	

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty

MDC - Minimum Detectable Concentration

BDL - Below Detection Limit

DL - Decision Level

Data Package ID: UR1607218-1

Isotopic Uranium by Alpha Spectroscopy

PAI 714 Rev 12

Sample Results

Lab Name: ALS -- Fort Collins

Work Order Number: 1607218

Client Name: Cabrera Services, Inc.

ClientProject ID: UNC New Haven CT 10-1007.00

Field ID:	HW-SB-13-S-P-11
Lab ID:	1607218-13

Sample Matrix: SOIL
Prep SOP: PAI 778 Rev 14
Date Collected: 12-Jul-16
Date Prepared: 03-Aug-16
Date Analyzed: 10-Aug-16

Prep Batch: AS160802-1
QCBatchID: AS160802-1-2
Run ID: AS160802-1UR
Count Time: 420 minutes
Report Basis: Dry Weight

Final Aliquot: 1.03 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: Spectrum #1

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Requested MDC	DL	Lab Qualifier
13966-29-5	U-234	2.22 +/- 0.40	0.02	0.05	NA	
15117-96-1	U-235	0.100 +/- 0.046	0.013	0.05	NA	
7440-61-1	U-238	0.42 +/- 0.11	0.03	0.05	NA	

Chemical Yield Summary

Carrier/Tracer	Amount Added	Result	Units	Yield	Control Limits	Flag
U-232	4.575	3.72	pCi/g	81.3	30 - 110 %	

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty

MDC - Minimum Detectable Concentration

BDL - Below Detection Limit

DL - Decision Level

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