

License SUB-1010  
Docket 040-08027



July 24, 2017

Mr. Robert Evans  
U.S. Nuclear Regulatory Commission  
Region IV  
1600 East Lamar Boulevard  
Arlington, TX 76011

**SUBJECT: ORISE CONTRACT NO. DE-SC0014664  
LETTER REPORT FOR ANALYTICAL RESULTS FOR TWO SOIL SAMPLES  
ASSOCIATED WITH THE SEQUOYAH FUELS CORPORATION IN GORE,  
OKLAHOMA  
[TAC NO. 040-08027/17-002] [DOCKET NO. 040-08027](RFTA NO. 17-001)  
DCN: 5206-LR-08-0**

Dear Mr. Evans:

Oak Ridge Institute for Science and Education (ORISE) received two soil samples on June 20, 2017 from the Sequoyah Fuels Corporation in Gore, Oklahoma. The samples were received in good condition. Per the NRC Form 303 that was sent with the samples, the samples were analyzed for uranium by gamma spectrometry. The analytical data, along with the procedure reference, are presented in the attached reports.

ORISE Quality Control (QC) requirements were met for these analyses. The QC files are available for your review upon request.

Please feel free to contact me at 865.576.9184 or Forrest Smith at 865.574.9802 with any questions or comments.

Sincerely,

Wade Ivey, Manager  
Laboratory

WPI:WFS:jw

Enclosures

Electronic distribution: T. Carter, NRC      S. Roberts, ORAU      T. Vitkus, ORAU  
E. Bailey, ORAU      D. Hagemeyer, ORAU      S. Munson, Sequoyah Fuels  
File code: 5206      Lab code: 13199

Distribution approval and concurrence:	Initials
Quality Review	JW
Technical Review	WIB

<b>NRC FORM 303</b> (4-2004)		<b>U.S. NUCLEAR REGULATORY COMMISSION</b>			<b>LABORATORY USE ONLY</b>			
<b>REQUEST FOR ANALYSIS AND CHAIN OF CUSTODY</b> LABORATORY - ORISE					CONTROL NUMBER <b>RFTA-17-001</b>			
SAMPLE LOCATION (LICENSEE) <b>Sequoyah Fuels Corporation, Gore, OK</b>					LICENSE NO. <b>SUB-1010</b>			
					DOCKET NO. <b>040-08027</b>			
<b>SAMPLE SUBMITTED</b>								
# TOTAL	TYPE	VOLUME	WEIGHT	DATE SAMPLES SUBMITTED	PRIORITY <input checked="" type="checkbox"/> ROUTINE <input type="checkbox"/> URGENT			
<b>2</b>	Soil			06/15/2017				
<b>SAMPLE COLLECTION INTERVAL</b>								
				START	MONTH	DAY	YEAR	TIME
					6	15	2017	850g
				STOP	6	15	2017	9:00 am
INSPECTOR RESPONSIBLE <b>Robert Evans</b>				TELEPHONE NUMBER <b>817-200-1234</b>				
<b>ANALYSIS TO BE PERFORMED</b> <input type="checkbox"/> GROSS ALPHA (GA) <input type="checkbox"/> GROSS BETA (GB) <input checked="" type="checkbox"/> GAMMA SPEC (GS) <input type="checkbox"/> TRITIUM (H3) <input type="checkbox"/> CARBON-14 (C14) <input type="checkbox"/> IODINE-125 (I125)				<b>LIST DESIRED LLD (Optional)</b>	<b>OTHER TYPE OF ANALYSIS (Specify)</b>		<b>LIST DESIRED LLD (Optional)</b>	
<b>RELINQUISHED BY</b> Robert Evans		<b>RECEIVED BY</b> FedEx		<b>DATE</b> 6/20/17	<b>TIME</b> 12:00	<b>REASON FOR CHANGE OF CUSTODY</b> Ship to ORAU Lab		
FedEx		ORAU Wade P. J. 6/20/17						
<b>FEE RECOVERABLE</b> <input type="checkbox"/> NO <input checked="" type="checkbox"/> YES    IF YES TAC NUMBER    Rpt 040-08027/17-002								
<b>REMARKS</b> Radionuclides of concern are isotopes of uranium. Action Level is 570 pCi/g natural uranium (total uranium)								
If necessary, return samples to Sequoyah Fuels Corporation, Attn: Scott Munson, Highway 10 and Interstate 40 Gore, Oklahoma 74435, 918-489-5511 x223								
<b>NOTE: SAMPLES WILL BE DISCARDED AFTER ANALYSIS UNLESS REASONS ARE NOTED IN REMARKS ABOVE.</b>								

RSE 6/15/17

100 RSE 6/15/17

NRC FORM 303  
(4-2004)

U.S. NUCLEAR REGULATORY COMMISSION

LABORATORY USE ONLY

SAMPLE RECORD -- (Continued)  
LABORATORY -- ORISE

CONTROL NUMBER

RFTA-17-001

SAMPLE NUMBER	SAMPLE NAME AND DESCRIPTION	COLLECTION DATE/TIME	REMARKS, PRESERVATIVE ANALYSIS REQUESTED, ETC.
NRC-1	Western end of Ditch West Pond # 2	06/15/2017 850 am	
NRC-2	central area of ditch West Pond # 2	06/15/2017 901 am	
<del>NRC-3</del> RSE 6/15/17		06/15/2017	
<del>NRC-4</del> RSE 6/15/17		06/15/2017	

Page 1 of 1  
**Project Name:** ORAU/ORISE Chain of Custody and Analytical Request  
**Project #:** 201213199  
**Client Name:** U.S. Nuclear Regulatory Commission  
**Address:** 612 E. Lamar Blvd Suite 400  
**Phone #:** 817.860.8234  
**Phone #:** 1707-001  
**Phone #:** 817.860.8234  
**Fax #:**  
**Client Name:** U.S. Nuclear Regulatory Commission  
**Address:** 612 E. Lamar Blvd Suite 400  
**Phone #:** 817.860.8234  
**Fax #:**  
**Client Name:** ORAU/ORISE  
**Address:** 1299 Bethel Valley Road, Bldg SC-200  
**Phone #:** (865) 576-9184  
**Fax #:** (865) 241-3248

**Client Name:** U.S. Nuclear Regulatory Commission  
**Address:** 612 E. Lamar Blvd Suite 400  
**Phone #:** 817.860.8234  
**Fax #:**  
**Client Name:** ORAU/ORISE  
**Address:** 1299 Bethel Valley Road, Bldg SC-200  
**Phone #:** (865) 576-9184  
**Fax #:** (865) 241-3248

Client Sample ID	Date Collected (mm-dd-yy)	Time Collected (military)	Sample Matrix (1)	Field Filtered (2)	Total # of Containers	Sample Analysis Requested (3)	Comments
NRC-1	06/15/17	8:50	S	No	1	GAMMA SPEC	
NRC-2	06/15/17	9:01	S	No	1	GAMMA SPEC	

**Gamma Isotopes:** AC228, AC228, B1212, B1214, B1214, K40, PA234, PB212, PB212, PB214, RA226, TH230, TH234, TH234, U235, U235, U235  
**Alpha Isotopes:**  
**LSA:**

Relinquished By (Signed)	Date	Time	Received By (Signed)	Date	Time	Sample Shipping and Delivery Details
	6/20/2017	12:00:00PM	Ivey/Wade	6/20/2017	12:00:00PM	ORAU/ORISE PM: Phone # : Method of Shipment: Date Shipped: Airbill # : Airbill # :

**Chain of Custody Signatures**  
**Relinquished By (Signed):**  
**Date:** 6/20/2017  
**Time:** 12:00:00PM  
**Received By (Signed):** Wade  
**Date:** 6/20/2017  
**Time:** 12:00:00PM  
**Sample Shipping and Delivery Details:**  
**ORAU/ORISE PM:**  
**Phone # :**  
**Method of Shipment:**  
**Date Shipped:**  
**Airbill # :**  
**Airbill # :**

1) Matrix Codes: S=Soil, W=Water, M=Miscellaneous, A=Air Filter, R=Smear/Wipe  
 2) Field Filtered: For liquid matrices, indicate -Y- for yes the sample was field filtered or -N- for sample was not field filtered.  
 3) If the integrity of the samples and/or sample packaging are in question, provide details in the CoC comment field.  
**COC Comments:**

APPENDIX A

ORISE Sample Receipt Form				
THE OAK RIDGE INSTITUTE FOR SCIENCE AND EDUCATION				
Client/Task Name: <i>(Robert Evans) Sequoyah Fuels</i>		Project/Task # <i>201213199</i>		
Received by: <i>Wade Ivey</i>		Date Received: <i>6/20/17</i>		
Tracking # <i>N/A</i>		Shipment Identified as foreign soil? (circle) YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> If YES, notify the manager before proceeding.		
Estimated Activity Level (circle): <input checked="" type="checkbox"/> LA / MA / HA		Sample Delivery Group Number: <i>13199-1</i>		
Sample Receipt Criteria	Yes	No	N/A	Comments / Qualifiers (Required if receipt criteria marked "No")
Shipping Containers received intact and sealed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Appropriate sample containers used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are there any special holding times? Rad analysis hold time is 6 months.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Sufficient sample volume to perform the requested analyses?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<i>yes, for a small geometry</i>
Individual sample containers security sealed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<i>no seal, but taped</i>
Chain of custody forms included?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Water Samples at proper pH?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	At Received pH:
Did water sample require pH adjustment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Preservative Matrix (circle): HNO <sub>3</sub> / HF / HCl Amount of acid added: Type of acid added (circle): HNO <sub>3</sub> /HF/HCl Final sample pH:
Sample ID's from COC match container ID's?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Date and Time from COC match container Date and Time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Number of containers received match the number indicated on the COC?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC form properly signed in the relinquished by/received by section?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<i>filled out but not signed by client</i>

Form filled by: *Wade P. Ivey*  
 Date: *6/20/17*

# Gamma Spectrometry Summary Results By Analyte



Report Date: July 17, 2017

<b>Analyte:</b>	U-235	<b>SOP (Rev. #)</b>	CP1 (21)
<b>Project Name:</b>	Sequoyah Fuels	<b>Energy Signature:</b>	143.76 (KeV)
<b>Project # :</b>	201213199	<b>SDG # :</b>	201213199-1

Client Sample ID:	Lab Sample ID:	Result	TPU (2s)	MDC	Units	Qualifier Flag	Batch #
NRC-1	13199S0001	0.01	0.18	0.38	pCi/g	U	GS0533
	13199S0001Dup	0.06	0.16	0.39	pCi/g	U	GS0533
NRC-2	13199S0002	0.02	0.17	0.40	pCi/g	U	GS0533

**Electronically Validated By:**  
John Cox- 7/17/2017 10:28

**Electronically Approved By:**

William Smith 7/17/2017 13:49

Qualifier Flags:

U = Analyte not detected (< MDC)

TPU = Total Propagated Uncertainty

MDC = Minimum Detectable Concentration

# Gamma Spectrometry Summary Results By Analyte



Report Date: July 17, 2017

<b>Analyte:</b>	U-238 by Th-234	<b>SOP (Rev. #)</b>	CP1 (21)
<b>Project Name:</b>	Sequoyah Fuels	<b>Energy Signature:</b>	63.29 (KeV)
<b>Project #:</b>	201213199	<b>SDG #:</b>	201213199-1

Client Sample ID:	Lab Sample ID:	Result	TPU (2s)	MDC	Units	Qualifier Flag	Batch #
NRC-1	13199S0001	1.19	0.51	0.98	pCi/g		GS0533
	13199S0001Dup	1.54	0.54	0.91	pCi/g		GS0533
NRC-2	13199S0002	1.48	0.54	0.94	pCi/g		GS0533

Electronically Validated By:  
John Cox- 7/17/2017 10:28

Electronically Approved By:

William Smith 7/17/2017 13:49

Qualifier Flags:

U = Analyte not detected (< MDC)

TPU = Total Propagated Uncertainty

MDC = Minimum Detectable Concentration