Tim Murphy, Chief
Bureau of Federal Facilities
Division of Environmental Protection
2030 E. Flamingo Road, Suite 230
Las Vegas, NV 89119-0818

SUBMITTAL OF THE FINAL CLOSURE LETTER REPORT FOR CORRECTIVE ACTION UNIT 496: BURIED ROCKET SITE - ANTELOPE LAKE (TTR), REVISION 0, MAY 2007, DOE/NV/25946--163

This letter serves as the Closure Letter Report for Corrective Action Unit (CAU) 496, Buried Rocket Site - Antelope Lake

Background

A Streamlined Approach for Environmental Restoration (SAFER) Plan for investigation and closure of CAU 496, Corrective Action Site (CAS) TA-55-008-TAAL (Buried Rocket), at the Tonopah Test Range (TTR), was approved by the Nevada Department of Environmental Protection (NDEP) on July 21, 2004. Approval to transfer CAS TA-55-008-TAAL from CAU 496 to CAU 4000 (No Further Action Sites) was approved by NDEP on December 21, 2005, based on the assumption that the rocket did not present any environmental concern. The approval letter included the following condition: "NDEP understands, from the NNSA/NSO letter dated November 30, 2005, that a search will be conducted for the rocket during the planned characterization of other sites at the Tonopah Test Range and, if found, the rocket will be removed as a housekeeping measure." NDEP and U.S. Department of Energy, National Nuclear Security Administration Nevada Site Office personnel located the rocket on Mid Lake during a site visit to TTR, and a request to transfer CAS TA-55-008-TAAL from CAU 4000 back to CAU 496 was approved by NDEP on September 11, 2006.

CAS TA-55-008-TAAL was added to the *Federal Facility Agreement and Consent Order* of 1996, based on an interview with a retired TTR worker in 1993. The original interview documented that a rocket was launched from Area 9 to Antelope Lake and was never recovered due to the high frequency of rocket tests being conducted during this timeframe. The interviewee recalled the rocket being an M-55 or N-55 (the M-50 "Honest John" rocket was used extensively at TTR from the 1960s to early 1980s). A review of previously conducted interviews with former TTR personnel indicated that the interviewees confused information from several sites.

The location of the CAU 496 rocket on Mid Lake is directly south of the TTR rocket launch facility in Area 9 and is consistent with information gathered on the lost rocket during recent

interviews. Most pertinently, an interview in 2005 with a former TTR range manager recalled a lost rocket that possibly contained a depleted uranium ballast in an inert warhead. The interviewee confirmed that the last tracking coordinate for the rocket indicated it was lost in an area south of Area 9 near the TTR range coordinates X = 6,614.57 feet (ft) and Y = - 20,508.79 ft. These coordinates correspond to a location approximately 2,295 ft northeast of the Mid Target, on Mid Lake. CAS TA-55-008-TAAL was removed from CAU 496 before the SAFER investigation could be completed, and before the new information could be evaluated and the conceptual site model assumptions confirmed.

Initial Site Conditions

The CAU 496 rocket location was verified in October 2006 with the assistance of Air Force and Sandia Explosive Ordnance Disposal (EOD) personnel and a Radiological Control Technician (RCT). The rocket was present on the lake bed as described and was confirmed to be an M-50 "Honest John" rocket that was approximately half buried in the lake bed. The rocket and surrounding area were surveyed by the RCT, and an area of radiological contamination was present near the front end of the rocket. The RCT roped off the area around the rocket and posted the area as a Radioactive Materials Area. The EOD personnel inspected the rocket under the supervision of the RCT, and the rocket was verified as being inert and safe for movement. The rocket was surveyed by the RCT and verified to not be radiologically impacted. Photograph 1 shows the condition of the CAU 496 rocket shortly after discovery.

Closure Activities

The rocket was removed from the ground on October 3, 2006, and was staged near the crash site. The rocket was radiologically surveyed by a RCT and determined not to be radiologically impacted. The rocket was transported to the Nellis Air Force Range ordnance salvage area for recycling. Visual inspection of the crash site and radiological survey of the area confirmed that depleted uranium was present in the rocket nose cone which had broken off during impact and partially disassembled in the shallow subsurface.

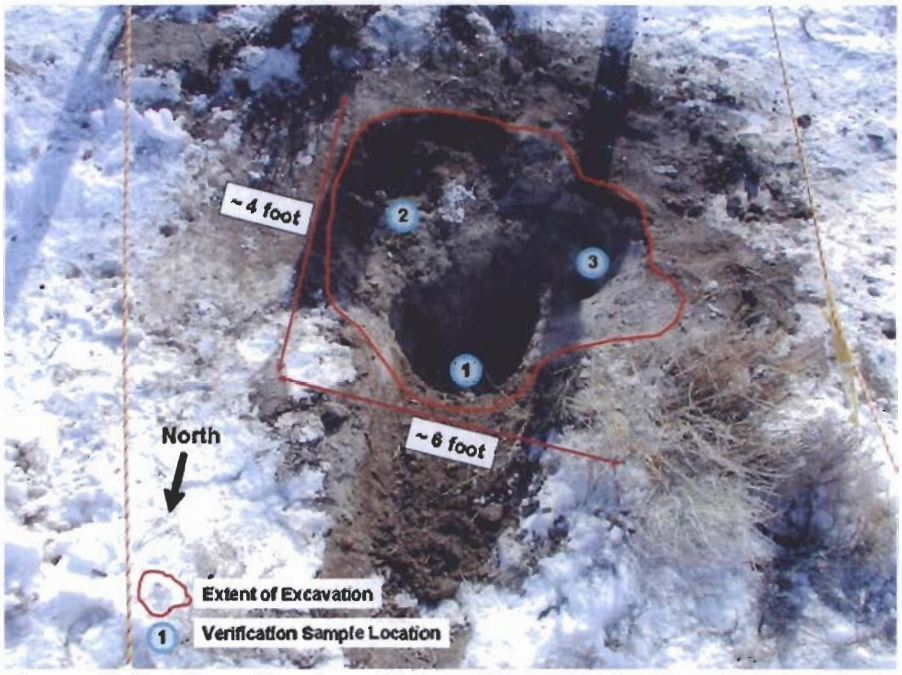
Closure field activities began on December 19, 2006, under the supervision of a RCT by manually excavating impacted debris and soil from the crash site and placing the waste into plastic bags. The excavation was radiologically surveyed by the RCT as work progressed to ensure all areas over background were removed. Approximately 0.5 cubic yards of depleted uranium waste were removed from the rocket crash location. The waste consisted of depleted-uranium-impacted debris and soil and five 0.5-ft by 1.5-ft depleted uranium plates which were removed from an approximate depth of 2 ft below ground surface and were associated with other metal debris from the rocket nose cone.

Photograph 1 – Initial site condition of CAU 496 rocket (facing west), 10/03/2006

The excavation was radiologically surveyed, and the three areas with the highest readings were selected for collecting verification samples to document clean closure. Verification samples were collected for uranium metal and isotopic uranium analyses. Additional quality assurance blind duplicate and equipment blank samples were collected to support the analytical objectives. After collecting verification samples, the site was secured, and depleted uranium waste was containerized under the supervision of a Waste Certification Official for subsequent offsite disposal.

Photograph 2 shows the site during removal of depleted uranium debris and impacted soil, and Photograph 3 shows sampling locations and the extent of excavation.

Photograph 2 – CAU 496 rocket site during cleanup (facing northwest), 12/19/2006



Photograph 3 – Sampling locations and extent of excavation, 12/20/2006

Table 1 summarizes the analytical results for verification samples collected on December 20, 2006. One sample collected from location 496-01 exceeded the Preliminary Remediation Goal (PRG) action level for uranium metal of 200 milligrams per kilogram (mg/kg).

Table 1 – Analytical results for verification samples

Sample ID	Date Collected	Radiological Survey Results (dpm[A])	Uranium (mg/kg)	Isotopic Uranium-238 (pCi/g[B])
Action Level		~5,000 dpm (background)	200 mg/kg	63 pCi/g
496-01	12/20/2006	7,200	217	4.14
496-02	12/20/2006	6,000	10.2	4.59
496-03	12/20/2006	5,780	8	8.37
496-04 Dup of 01	12/20/2006	n/a	19	14.2
496-05	12/20/2006	n/a	13.6	0.0183
496-01R	04/10/2007	n/a	2.5	n/a

[A] dpm: disintegrations per minute
[B] pCi/g: picocuries per gram

Additional Closure Activities

Another phase of fieldwork was conducted on April 10, 2007, to remove additional impacted soil from sample location 496-01, which was above the PRG of 200 mg/kg for uranium metal. Impacted soil was removed using hand tools, and waste was placed into plastic bags under RCT supervision. No depleted uranium fragments or debris were noted during the additional removal activities. One additional verification sample (496-01R) was collected from the area of new excavation and analyzed for uranium metal. The sample was below the PRG, and the result is included in Table 1. The excavation was backfilled with clean soil and contoured to the surrounding topographic grade. Photograph 4 shows the location of additional soil removal.

Summary

The CAU 496 rocket was located, and the crash site was moved from CAU 4000 back to CAU 496 so that the rocket could be removed and the crash site could be investigated for the presence of contaminants of concern. Depleted uranium was confirmed to be present at the site, and cleanup activities were conducted to remove the depleted-uranium-impacted debris and soil to meet PRG and radiological cleanup standards. Additional verification samples collected from the excavation confirmed that all depleted-uranium-impacted debris and soil had been removed to below applicable action levels, the excavation was backfilled with clean soil. Waste generated during cleanup activities is being managed as low-level waste and is planned for disposal at the Nevada Test Site. The rocket was surveyed for radiological contamination and was determined to meet free-release conditions. The rocket was transported to the Nellis Air Force Range ordnance salvage area for recycling.

Photograph 4 – Location of additional soil removal, 04/10/2007

Copies of the analytical result summaries are attached.

Please direct comments and questions to Kevin J. Cabble, of my staff, at (702) 295-5000.

Wilhelm R. Wilborn
Acting Federal Project Director
Environmental Restoration Project

ERD:KJC

Enclosure:
As stated

cc w/encl. (uncontrolled) via email:
D. R. Elle, NDEP, Las Vegas, NV
Southern Nevada Public Reading Room
Las Vegas, NV (2 electronic copies)
Northern Nevada Public Reading Room
Carson City, NV (electronic copy)
Public Reading Facility Coordinator, SNJV
Las Vegas, NV (CD)
David Swanson, Department of Natural
Resources & Federal Facilities, Pahrump, NV (electronic copy)
Technical Library, NNSA/NSO, Las Vegas, NV (CD)
NSTec Document Production (electronic copy to OSTI)
J. L. Smith, NSTec, Las Vegas, NV
R. F. Boehlecke, SNJV, Las Vegas, NV
P. A. Sanders, ERP, NNSA/NSO, Las Vegas, NV
R. B. Jackson, NSTec, Las Vegas, NV
A. L. Primrose, NSTec, Las Vegas, NV
A. J. Silvas, NSTec, Las Vegas, NV
T. A. Thiele, NSTec, Las Vegas, NV
T. Zaferatos, NDEP, Las Vegas, NV

cc w/o encl (uncontrolled) via email:
D. C. Loewer, DTRA/CXT1, M/S 645, Mercury, NV
T. A. Lantow, DTRA/CXT1, M/S 645, Mercury, NV
W. R. Griffin, SNJV/DTRA, M/S 645, Mercury, NV
K. A. Hoar, AD/AMSP, NNSA/NSO, Las Vegas, NV
E. F. Di Sanza, WMP, NNSA/NSO, Las Vegas, NV
EM Records, AMEM, Las Vegas, NV
FFACO Group, PSG, NNSA/NSO, Las Vegas, NV

NSTec

ANALYTICAL LABORATORY

SERVICES REQUEST AND CHAIN OF CUSTODY RECORD

Page ____ of ____

PROJECT / CLIENT INFORMATION			*REPORT & TURNAROUND INFORMATION*			*SAMPLE INFORMATION*
Project: CAU 496	BN Org#: 11300		Send Report to: Brad Jackson			Sampling Site: CAU 496 rocket D4 Site
Charge Number: SB1B 13W5			Phone: 295-0331 ~~7761~~	Fax: 5-7761	M/S: NTS 306	The samples submitted contain (check).
Project Manager: Brad Jackson			Turnaround: ( ) Standard – 14 days IH, 28 days Non-rad Env, 45 days Rad Env			( ) Hazardous - *(list)* ____
Phone: 295-0331	Fax: 295-7761	M/S: NTS 306	( ) RUSH Preliminary by: ____ ____ (IH)			(X) Radioactive - *(list)* Uranium
			___ 1 ___ 2 ___ 7 ___ 14 (non-Rad Env)			( ) Unknown contamination. If known, identify contaminants. This information will ensure compliance with applicable regulations and allow for the safe handling of the sample materials.
			___ 1 ___ 7 ✓ 14 ___ 28 (Radiological Env)			

SAMPLE MANAGEMENT INFORMATION

SDG: ____ (IH) V2827 (Non-Rad Env) ____ ____ (Rad Env)

Samples submitted are associated with a signed Project SOW. (X) YES ( ) NO

Analyses entered here agree with the SOW. (X) YES ( ) NO ( ) N/A

If not, identify the variation: ____

Subcontract Lab(s) used for this work: LIONVILLE

ID/DESCRIPTION	SAMPLING DATE	SAMPLING TIME	MATRIX	CONTAINER #	CONTAINER Est. Vol	QC MD	QC MS	QC MSD	Pres – Analysis eg. HCl - VOCs	Pay Item, Analysis, Method: 9.9 / Uranium SW846 6010B-Metal	Pay Item, Analysis, Method: 4.10 / URANIUM SW846 6010B - Metal
496-01	12-20-06	1150	Soil	1	250ml				ice	X	
496-02	12-20-06	1153	↓	1	250ml				↓	X	
496-03	12-20-06	1158		1	250ml					X	
496-04	12-20-06	1203	↓	1	250ml					X	
496EB-01	12-20-06	1130	Water	1	250ml				↓		X
LAST ITEM											

CUSTODY TRANSFER

Sampled/Relinquished (print)	Signature	DATE / TIME	Received by (print)	Signature	DATE / TIME
David Nacht		12-27-06 13:18	C.J. CASTANEDA		12/27/06@1318
C.D. CASTANEDA		12-28-06@1300	Fed Ex		12/28/06@1300
Fed Ex			VICTOR HERNANDEZ		12/29/06 @0935

FRM-0732 (11/06)

U.S. EPA

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

49601

Lab Name: LIONVILLE_LABORATORY Contract: 60052

Lab Code: LVLI Case No.: 496 SAS No.: SDG No.: V2827

Matrix (soil/water): SOIL Lab Sample ID: 0612L582-001

Level (low/med): LOW Date Received: 12/29/06

% Solids: 83.1

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7440-61-1	Uranium	217		*	P

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

496-01

U.S. EPA

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

49602

Lab Name: LIONVILLE_LABORATORY_____ Contract: 60052_____ SDG No.: V2827_

Lab Code: LVLI__ Case No.: 496__ SAS No.: _____

Matrix (soil/water): SOIL_ Lab Sample ID: 0612L582-002

Level (low/med): LOW__ Date Received: 12/29/06

% Solids: _87.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7440-61-1	Uranium	10.2		*	P

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

496-02

FORM I - IN

U.S. EPA

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

49603

Lab Name: LIONVILLE_LABORATORY_____ Contract: 60052_____
Lab Code: LVLI__ Case No.: 496__ SAS No.: _____ SDG No.: V2827_
Matrix (soil/water): SOIL_ Lab Sample ID: 0612L582-003
Level (low/med): LOW__ Date Received: 12/29/06
% Solids: _90.2

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7440-61-1	Uranium	8.0		*	P

Color Before: _____ Clarity Before: _____ Texture: _____
Color After: _____ Clarity After: _____ Artifacts: _____

Comments:
496-03

U.S. EPA

1

EPA SAMPLE NO.

INORGANIC ANALYSES DATA SHEET

49604

Lab Name: LIONVILLE_LABORATORY_____ Contract: 60052_____
Lab Code: LVLI__ Case No.: 496__ SAS No.: _____ SDG No.: V2827_
Matrix (soil/water): SOIL_ Lab Sample ID: 0612L582-004
Level (low/med): LOW__ Date Received: 12/29/06
% Solids: _82.4

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7440-61-1	Uranium	19.0		*	P

Color Before: _____ Clarity Before: _____ Texture: _____
Color After: _____ Clarity After: _____ Artifacts: _____

Comments:
496-04

FORM I - IN

U.S. EPA

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

496EB

Lab Name: LIONVILLE_LABORATORY_____ Contract: 60052_____
Lab Code: LVLI__ Case No.: 496__ SAS No.: _____ SDG No.: V2827_
Matrix (soil/water): WATER Lab Sample ID: 0612L582-005
Level (low/med): LOW__ Date Received: 12/29/06
% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7440-61-1	Uranium	13.6	U		P

Color Before: _____ Clarity Before: _____ Texture: _____
Color After: _____ Clarity After: _____ Artifacts: _____

Comments:
496EB-01

FORM I - IN

NSTec

ANALYTICAL LABORATORY
SERVICES REQUEST AND CHAIN OF CUSTODY RECORD

PROJECT / CLIENT INFORMATION #300

Project: CAU496 | BN Org#: ~~3502~~
Charge Number: 5B1B 13W5
Project Manager: Brad Jackson
Phone: 295-0331 | Fax: 295-7761 | M/S NTS306

REPORT & TURNAROUND INFORMATION

Send Report to: Brad Jackson
Phone 295-0331 | Fax 295-7761 | M/S NTS306
Turnaround: ( ) Standard – 14 days IH, 28 days Non-rad Env, 45 days Rad Env
(✓) RUSH Preliminary by ______ (IH)
__1 __2 ✓7 ✓(4 non-Rad Env)
__1 __7 ✓14 __28 (Radiological Env)

SAMPLE INFORMATION

Sampling Site CAU 496 rocket Dv site
The samples submitted contain (check):
( ) Hazardous - *list:*
(✓) Radioactive - *(list)* uranium
( ) Unknown contamination. If known, identify contaminants. This information will ensure compliance with applicable regulations and allow for the safe handling of the sample materials.

SAMPLE MANAGEMENT INFORMATION

SDG: 178475/ 2/0 (IH) ______ (Non-Rad Env) V2828 (Rad Env)
Samples submitted are associated with a signed Project SOW. (✓) YES ( ) NO
Analyses entered here agree with the SOW. (✓) YES ( ) NO ( ) N/A
If not, identify the variation: ______
Subcontract Lab(s) used for this work: GEL

Pay Item, Analysis, Method

	ID/DESCRIPTION	SAMPLING DATE	SAMPLING TIME	MATRIX	CONTAINER #	CONTAINER Est. Vol	QC MD	QC MS	QC MSD	Pres – Analysis eg. HCl - VOCs	NAS-A-002 Isotopic U DOE HASL 300	Gamma 901.1 / EPA 6010B (Uranium)	NAS-A-003 Isotopic U DOE HASL 300					
1	496-01	20Dec06	1150	Soil	1	250ml				Ice	X							
2	496-02	20Dec06	1153	↓	1	250ml				Ice	X	1						
3	496-03	20Dec06	1158	↓	1	250ml				Ice	X	1						
4	496-04	20Dec06	1203	↓	1	250ml				Ice	X	1						
5	496EB-01	20Dec06	1130	Water	2	1L				Ice	[illegible]		X					
	LAST ITEM																	

CUSTODY TRANSFER

Sampled/Relinquished (print)	Signature	DATE / TIME	Received by (print)	Signature	DATE / TIME
Brad Jackson		26Dec06/1641	Sample Trailer Refrigerator	NA	26Dec06/1641
Sample trailor fridge	NA	12-27-06 10:05	David Nacht		12-27-06 10:05
David Nacht		12-27-06 13:17	C.D. CASTANEDA		12-27-06 @ 1317
C.D. CASTANEDA		12/28/06 @ 1300	Fed Ex		12/28/06 @ 1300
			Jason Pacito		12/29/06 9:00

FRM-0732 (11/05)

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

Certificate of Analysis

Company : Bechtel Nevada Corp.
Address : 2621 Losee Road
M/S NTS273
North Las Vegas, Nevada 89030--4134
Contact: Mr. Ted Redding
Project: Environmental Rad Analysis - No EDD

Report Date: January 10, 2007

Client Sample ID:	496-01	Project:	NEVA00406
Sample ID:	178475001	Client ID:	NEVA002
Matrix:	Soil		
Collect Date:	20-DEC-06		
Receive Date:	29-DEC-06		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Alpha Spec Analysis													
Alphaspec U, Solid													
Uranium-233/234		1.89	+/-0.106	0.0189	+/-0.236	0.020	pCi/g		BXL1	01/05/07	1812	599519	1
Uranium-235/236		0.138	+/-0.0318	0.00569	+/-0.0353	0.020	pCi/g						
Uranium-238		4.14	+/-0.156	0.0117	+/-0.489	0.020	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	12/30/06	1040	599448

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, U-02-RC Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Uranium-232	Alphaspec U, Solid	76	(25%-125%)

Notes:

The Qualifiers in this report are defined as follows :

* 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
A The TIC is a suspected aldol-condensation product
B Target analyte was detected in the associated blank
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
H Analytical holding time was exceeded
J Value is estimated
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 detection limit
R Sample results are rejected

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

Certificate of Analysis

Company : Bechtel Nevada Corp.
Address : 2621 Losee Road
M/S NTS273
North Las Vegas, Nevada 89030--4134
Contact: Mr. Ted Redding
Project: Environmental Rad Analysis - No EDD

Report Date: January 10, 2007

Client Sample ID:	496-02	Project:	NEVA00406
Sample ID:	178475002	Client ID:	NEVA002
Matrix:	Soil		
Collect Date:	20-DEC-06		
Receive Date:	29-DEC-06		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Alpha Spec Analysis													
Alphaspec U, Solid													
Uranium-233/234		1.64	+/-0.115	0.0161	+/-0.222	0.020	pCi/g		BXL1	01/05/07	1812	599519	1
Uranium-235/236		0.156	+/-0.0395	0.00781	+/-0.0434	0.020	pCi/g						
Uranium-238		4.59	+/-0.193	0.0233	+/-0.566	0.020	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	12/30/06	1040	599448

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, U-02-RC Modified

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Uranium-232	Alphaspec U, Solid	55	(25%-125%)

Notes:

The Qualifiers in this report are defined as follows :

* 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
A The TIC is a suspected aldol-condensation product
B Target analyte was detected in the associated blank
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
H Analytical holding time was exceeded
J Value is estimated
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 detection limit
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

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

Certificate of Analysis

Company : Bechtel Nevada Corp.
Address : 2621 Losee Road
M/S NTS273
North Las Vegas, Nevada 89030--4134
Contact: Mr. Ted Redding
Project: Environmental Rad Analysis - No EDD

Report Date: January 10, 2007

Client Sample ID: 496-03
Sample ID: 178475003
Matrix: Soil
Collect Date: 20-DEC-06
Receive Date: 29-DEC-06
Collector: Client

Project: NEVA00406
Client ID: NEVA002

Parameter	Qualifier	Result	Uncertainty	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Alpha Spec Analysis													
Alphaspec U, Solid													
Uranium-233/234		2.27	+/-0.134	0.0195	+/-0.294	0.020	pCi/g		BXL1	01/05/07	1812	599519	1
Uranium-235/236		0.212	+/-0.0463	0.0241	+/-0.0523	0.020	pCi/g						
Uranium-238		8.37	+/-0.256	0.0195	+/-0.998	0.020	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	12/30/06	1040	599448

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, U-02-RC Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Uranium-232	Alphaspec U, Solid	58	(25%-125%)

Notes:

The Qualifiers in this report are defined as follows :

* 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
A The TIC is a suspected aldol-condensation product
B Target analyte was detected in the associated blank
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
H Analytical holding time was exceeded
J Value is estimated
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 detection limit
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

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

Certificate of Analysis

Company : Bechtel Nevada Corp.
Address : 2621 Losee Road
M/S NTS273
North Las Vegas, Nevada 89030--4134
Contact: Mr. Ted Redding
Project: Environmental Rad Analysis - No EDD

Report Date: January 10, 2007

Client Sample ID: 496-04
Sample ID: 178475004
Matrix: Soil
Collect Date: 20-DEC-06
Receive Date: 29-DEC-06
Collector: Client

Project: NEVA00406
Client ID: NEVA002

Parameter	Qualifier	Result	Uncertainty	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Alpha Spec Analysis													
Alphaspec U, Solid													
Uranium-233/234		2.95	+/-0.134	0.0176	+/-0.358	0.020	pCi/g		BXL1	01/05/07	1812	599519	1
Uranium-235/236		0.379	+/-0.0543	0.0217	+/-0.0689	0.020	pCi/g						
Uranium-238		14.2	+/-0.295	0.0122	+/-1.62	0.020	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	JMB1	12/30/06	1040	599448

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, U-02-RC Modified

Surrogate/Tracer recovery	Test	Recovery %	Acceptable Limits
Uranium-232	Alphaspec U, Solid	74	(25%-125%)

Notes:

The Qualifiers in this report are defined as follows :

* 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
A The TIC is a suspected aldol-condensation product
B Target analyte was detected in the associated blank
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
H Analytical holding time was exceeded
J Value is estimated
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 detection limit
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

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

Certificate of Analysis

Company : Bechtel Nevada Corp.
Address : 2621 Losee Road
M/S NTS273
North Las Vegas, Nevada 89030--4134
Contact: Mr. Ted Redding
Project: Environmental Rad Analysis - No EDD

Report Date: January 10, 2007

Client Sample ID: 496EB-01
Sample ID: 178475005
Matrix: Water
Collect Date: 20-DEC-06
Receive Date: 29-DEC-06
Collector: Client

Project: NEVA00406
Client ID: NEVA002

Parameter	Qualifier	Result	Uncertainty	DL	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd
Rad Alpha Spec Analysis													
Alphaspec U, Liquid													
Uranium-233/234		0.0921	+/-0.042	0.0516	+/-0.0432	0.060	pCi/L		BXL1	01/08/07	1752	599518	1
Uranium-235/236	U	0.0452	+/-0.0365	0.0543	+/-0.0368	0.060	pCi/L						
Uranium-238	U	0.0183	+/-0.0326	0.0581	+/-0.0326	0.060	pCi/L						

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, U-02-RC Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Uranium-232	Alphaspec U, Liquid	65	(25%-125%)

Notes:

The Qualifiers in this report are defined as follows :

* 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
A The TIC is a suspected aldol-condensation product
B Target analyte was detected in the associated blank
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
H Analytical holding time was exceeded
J Value is estimated
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 detection limit
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
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
^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 04/18/07

CLIENT: NSTEC V2895 LVL LOT #: 0704L128

WORK ORDER: 60052-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	496-01R	Uranium, Total	2.5 u	MG/KG	2.5	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 04/18/07

CLIENT: NSTEC V2895 LVL LOT #: 0704L128

WORK ORDER: 60052-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	07L0183-MB1	Uranium, Total	2.5 u	MG/KG	2.5	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 04/18/07

CLIENT: NSTEC V2895 LVL LOT #: 0704L128

WORK ORDER: 60052-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	496-01R	Uranium, Total	224	2.5 u	246	91.1	1.0
		Uranium, Total MSD	227	2.5 u	246	92.2	1.0

Lionville Laboratory, Inc.

INORGANICS DUPLICATE SPIKE REPORT 04/18/07

CLIENT: NSTEC V2895 LVL LOT #: 0704L128

WORK ORDER: 60052-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	SPIKE#1 %RECOV	SPIKE#2 %RECOV	%DIFF
-001	496-01R	Uranium, Total	91.1	92.2	1.2

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 04/18/07

CLIENT: NSTEC V2895 LVL LOT #: 0704L128

WORK ORDER: 60052-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	496-01R	Uranium, Total	2.5 u	2.5 u	NC	1.0

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 04/18/07

CLIENT: NSTEC V2895 LVL LOT #: 0704L128

WORK ORDER: 60052-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	07L0183-LC1	Uranium, LCS	226	250	MG/KG	90.3