John Hickman - Rancho Seco Well Sample Analysis

From: "Robert E. Jones" <RJones2@smud.org>
To: <jbh@nrc.gov>
Date: 04/17/2007 7:34 PM
Subject: Rancho Seco Well Sample Analysis

John,

Attach is the case narrative for one of our quarterly well samples at Rancho Seco. The one I sent you earlier was generic and probably not as helpful to you.

Thanks,
Bob

<<Case Narrative.pdf>>

Mail Envelope Properties (46255987.2B9 : 5 : 49849)

Subject:	Rancho Seco Well Sample Analysis
Creation Date	04/17/2007 7:34:07 PM
From:	"Robert E. Jones" <RJones2@smud.org>
Created By:	RJones2@smud.org

Recipients
nrc.gov
OWGWPO04.HQGWDO01
JBH (John Hickman)

Post Office	**Route**
OWGWPO04.HQGWDO01	nrc.gov

Files	**Size**	**Date & Time**
MESSAGE	205	04/17/2007 7:34:07 PM
TEXT.htm	852	
Case Narrative.pdf	1204193	
Mime.822	1651335	

Options

Expiration Date:	None
Priority:	Standard
ReplyRequested:	No
Return Notification:	None
Concealed Subject:	No
Security:	Standard

Junk Mail Handling Evaluation Results
Message is eligible for Junk Mail handling
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CASE NARRATIVE

Receipt Narrative
for
Rancho Seco Nuclear Generating Station
Work Order: 151732

January 03, 2006

Laboratory Identification:

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

Summary

Sample receipt The samples arrived at General Engineering Laboratories, LLC, Charleston, South Carolina on December 12, 2005 for analysis.

Sample Identification The laboratory received the following samples:

Laboratory ID	Client ID
151732001	#1 MW1C
151732002	#2 MW2A
151732003	#3 MW3A
151732004	#4 MW4A

Case Narrative

Sample analyses were conducted using methodology as outlined in General Engineering Laboratories (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.

Data Package

The enclosed data package contains the following sections: Case Narrative, Chain of Custody, Cooler Receipt Checklist, Data Package Qualifier Definitions and data from the following fractions: Radiochemistry.

Martha Harrison
Project Manager

GENERAL ENGINEERING LABORATORIES, LLC
a Member of THE GEL GROUP, INC.
P.O. Box 30712 • Charleston, SC 29417 • 2040 Savage Road (29407)
Phone (843) 556-8171 • Fax (843) 766-1178 • www.gel.com

CHAIN OF CUSTODY

200508871176

Page: 1 of 1
Project #:
GEL Quote #: GBL P04-0747
COC Number [1]:
PO Number:

GEL Chain of Custody and Analytical Request

GEL Work Order Number:

General Engineering Laboratories, LLC
2040 Savage Road
Charleston, SC 29407
Phone: (843) 556-8171
Fax: (843) 766-1178

Client Name: SMUD / Rancho Seco Phone #: 916 732-4859
Project/Site Name: RSS / Rancho Seco Fax #: 916-732-6095
Address: 14440 Twin Cities Rd, Herald, CA 95638
Collected by: Send Results To: John Newey

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Sample Analysis Requested [5] (Fill in the number of containers for each test)

Sample ID * For composites - indicate start and stop date/time	*Date Collected (mm-dd-yy)	*Time Collected (Military) (hhmm)	QC Code [2]	Field Filtered [3]	Sample Matrix [4]	Should this sample be considered: Radioactive	Should this sample be considered: TSCA Regulated	Total number of containers	C-14	H-3	Ni;63 Fe 55	Ni;59 Sr 90	Tc-99, Pu 147	U 238, 89 240, 242 Pu	Pu 241, Np 237	Am 241, Cm 244	Gamma	Gross B/a	Comments
											NI								<-- Preservative Type (6)
01 #1 MW1C	12-05-05	1400	N	N	GW			7	1	1	5								Note: extra sample is required for sample specific QC
02 #2 MW2A	11-29-05	1230	N	N	GW			7	1	1	5								
03 #3 MW3A	12-05-05	1450	N	N	GW			7	1	1	5								
04 #4 MW4A	12-06-05	1150	N	N	GW			7	1	1	5								

TAT Requested: Normal: ✓ Rush: Specify: (Subject to Surcharge) Fax Results: Yes / (No)

Circle Deliverable: C of A / (QC Summary) / Level 1 / Level 2 / (Level 3) / Level 4

Remarks: *Are there any known hazards applicable to these samples? If so, please list the hazards*

Sample Collection Time Zone
Eastern Pacific
Central Other _____
Mountain

Chain of Custody Signatures

	Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1	Ron Sewell	12-8-05	1300	[illegible]	12/12/05	10:15
2						
3						

Sample Shipping and Delivery Details

GEL PM:
Method of Shipment: Date Shipped:
Airbill #:
Airbill #:

1.) Chain of Custody Number = Client Determined
2.) QC Codes: N = Normal Sample, TB = Trip Blank, FD = Field Duplicate, EB = Equipment Blank, MS = Matrix Spike Sample, MSD = Matrix Spike Duplicate Sample, G = Grab, C = Composite
3.) Field Filtered: For liquid matrices, indicate with a - Y - for yes the sample was field filtered or - N - for sample was not field filtered.
4.) Matrix Codes: DW=Drinking Water, GW=Groundwater, SW=Surface Water, WW=Waste Water, W=Water, SO=Soil, SD=Sediment, SL=Sludge, SS=Solid Waste, O=Oil, F=Filter, P=Wipe, U=Urine, F=Fecal, N=Nasal
5.) Sample Analysis Requested: Analytical method requested (i.e. **8260B, 6010B/7470A**) and number of containers provided for each (i.e. *8260B* - 3, *6010B/7470A* - 1).
6.) Preservative Type: HA = Hydrochloric Acid, NI = Nitric Acid, SH = Sodium Hydroxide, SA = Sulfuric Acid, AA = Ascorbic Acid, HX = Hexane, ST = Sodium Thiosulfate, If no preservative is added = leave field blank

For Lab Receiving Use Only
Custody Seal Intact? YES NO
Cooler Temp: ____ C

WHITE = LABORATORY YELLOW = FILE PINK = CLIENT

COOLER RECEIPT CHECKLIST

SAMPLE RECEIPT & REVIEW FORM

PM use only

Client: SMUD	**SDG/ARCOC/Work Order:**
Date Received: 12/12/05	**PM(A) Review (ensure non-conforming items are resolved prior to signing):** MAH
Received By: CT	

	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	Samples requiring cold preservation within (4 +/- 2 C)? Record preservation method.	✓			Circle Coolant # ice bags blue ice dry ice (none) other describe) 8.2
3	Chain of custody documents included with shipment?	✓			
4	Sample containers intact and sealed?	✓			Circle Applicable: seals broken damaged container leaking container other (describe)
5	Samples requiring chemical preservation at proper pH?	✓			Sample ID's, containers affected and observed pH:
6	VOA vials free of headspace (defined as < 6mm bubble)?		✓		Sample ID's and containers affected:
7	Are Encore containers present? (If yes, immediately deliver to VOA laboratory)			✓	
8	Samples received within holding time?	✓			Id's and tests affected:
9	Sample ID's on COC match ID's on bottles?	✓			Sample ID's and containers affected:
10	Date & time on COC match date & time on bottles?	✓			Sample ID's affected:
11	Number of containers received match number indicated on COC?	✓			Sample ID's affected:
12	COC form is properly signed in relinquished/received sections?	✓			
14	Air Bill ,Tracking #'s, & Additional Comments				1218E 6E7 002 4591 0695 12 18E 6E7 ~~6E7~~ 002 4438 4300 CB 12/12/05

	Suspected Hazard Information	Non-Regulated	Regulated	High Level	
					RSO RAD Receipt # _____ *If > x2 area background is observed on samples identified as "non-regulated/non-radioactive", contact the Radiation Safety group for further investigation.
A	Radiological Classification?	✓			Maximum Counts Observed*: 90cpm
B	PCB Regulated?	✓			Comments:
C	Shipped as DOT Hazardous Material? If yes, contact Waste Manager or ESH Manager.	✓			Hazard Class Shipped: UN#:

PM (or PMA) review of Hazard classification: MAH Initials 12/12/05 Date:

RADIOLOGICAL ANALYSIS

Radiochemistry Case Narrative
Rancho Seco Nuclear Generating Station (SMUD)
Work Order 151732

Method/Analysis Information

Product:	**Alphaspec Np, Liquid**
Analytical Method:	DOE EML HASL 300
Analytical Batch Number:	487213

Sample ID	Client ID
151732001	#1 MW1C
151732002	#2 MW2A
151732003	#3 MW3A
151732004	#4 MW4A
1200994824	Method Blank (MB)
1200994825	151732002(#2 MW2A) Sample Duplicate (DUP)
1200994826	151732002(#2 MW2A) Matrix Spike (MS)
1200994827	Laboratory Control Sample (LCS)

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-032 REV# 6.

Calibration Information:

Calibration Information
All initial and continuing calibration requirements have been met.

Standards Information
Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

Sample Geometry
All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information
The blank volume is representative of the sample volume in this batch.

Designated QC
The following sample was used for QC: 151732002 (#2 MW2A).

QC Information
All of the QC samples met the required acceptance limits.

Technical Information:

Holding Time
All sample procedures for this sample set were performed within the required holding time.

Preparation Information
All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis
None of the samples in this sample set required reprep or reanalysis.

Miscellaneous Information:

NCR Documentation
Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. An NCR was not generated for this SDG.

Manual Integration
No manual integrations were performed on data in this batch.

Qualifier information
Manual qualifiers were not required.

Method/Analysis Information

Product:	**Alphaspec Am241, Cm244, Liquid**
Analytical Method:	DOE EML HASL-300, Am-05-RC Modified
Analytical Batch Number:	487212

Sample ID	Client ID
151732001	#1 MW1C
151732002	#2 MW2A
151732003	#3 MW3A
151732004	#4 MW4A
1200994820	Method Blank (MB)
1200994821	151732001(#1 MW1C) Sample Duplicate (DUP)
1200994822	151732001(#1 MW1C) Matrix Spike (MS)
1200994823	Laboratory Control Sample (LCS)

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-011 REV# 14.

Calibration Information:

Calibration Information
All initial and continuing calibration requirements have been met.

Standards Information
Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

Sample Geometry
All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information
The blank volume is representative of the sample volume in this batch.

Designated QC
The following sample was used for QC: 151732001 (#1 MW1C).

QC Information
Matrix Spike 1200994822 (#1 MW1C) failed required detection limit.

Technical Information:

Holding Time
All sample procedures for this sample set were performed within the required holding time.

Preparation Information
All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis
None of the samples in this sample set required reprep or reanalysis.

Miscellaneous Information:

NCR Documentation
Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. An NCR was not generated for this SDG.

Manual Integration
No manual integrations were performed on data in this batch.

Qualifier information
Manual qualifiers were not required.

Method/Analysis Information

Product:	**Alphaspec Pu, Liquid**
Analytical Method:	DOE EML HASL-300, Pu-11-RC Modified
Analytical Batch Number:	487214

Sample ID	Client ID
151732001	#1 MW1C
151732002	#2 MW2A
151732003	#3 MW3A
151732004	#4 MW4A
1200994828	Method Blank (MB)
1200994829	151732001(#1 MW1C) Sample Duplicate (DUP)
1200994830	151732001(#1 MW1C) Matrix Spike (MS)
1200994831	Laboratory Control Sample (LCS)

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-011 REV# 14.

Calibration Information:

Calibration Information
All initial and continuing calibration requirements have been met.

Standards Information
Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

Sample Geometry
All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information
The blank volume is representative of the sample volume in this batch.

Designated QC
The following sample was used for QC: 151732001 (#1 MW1C).

QC Information
All of the QC samples met the required acceptance limits.

Technical Information:

Holding Time
All sample procedures for this sample set were performed within the required holding time.

Preparation Information
All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis
None of the samples in this sample set required reprep or reanalysis.

Miscellaneous Information:

NCR Documentation
Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. An NCR was not generated for this SDG.

Manual Integration
No manual integrations were performed on data in this batch.

Qualifier information

Qualifier	Reason	Analyte	Sample
X	Results rejected due to tailing from the Pu-242 tracer region.	Plutonium-244	151732004

Method/Analysis Information

Product:	**Liquid Scint Pu241, Liquid**
Analytical Method:	DOE EML HASL-300, Pu-11-RC Modified
Analytical Batch Number:	487216

Sample ID	Client ID
151732001	#1 MW1C
151732003	#3 MW3A
151732004	#4 MW4A
1200994833	Method Blank (MB)
1200994834	151732003(#3 MW3A) Sample Duplicate (DUP)
1200994835	151732003(#3 MW3A) Matrix Spike (MS)
1200994836	Laboratory Control Sample (LCS)

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-035 REV# 7.

Calibration Information:

Calibration Information
All initial and continuing calibration requirements have been met.

Standards Information
Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

Sample Geometry
All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information
The blank volume is representative of the sample volume in this batch.

Designated QC
The following sample was used for QC: 151732003 (#3 MW3A).

QC Information
All of the QC samples met the required acceptance limits.

Technical Information:

Holding Time
All sample procedures for this sample set were performed within the required holding time.

Preparation Information
All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis
None of the samples in this sample set required reprep or reanalysis.

Miscellaneous Information:

NCR Documentation
Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. An NCR was not generated for this SDG.

Manual Integration
No manual integrations were performed on data in this batch.

Qualifier information
Manual qualifiers were not required.

Method/Analysis Information

Product:	**Liquid Scint Pu241, Liquid**
Analytical Method:	DOE EML HASL-300, Pu-11-RC Modified
Analytical Batch Number:	490003

Sample ID	Client ID
151732002	#2 MW2A
1201001147	Method Blank (MB)
1201001148	151732002(#2 MW2A) Sample Duplicate (DUP)
1201001149	151732002(#2 MW2A) Matrix Spike (MS)
1201001150	Laboratory Control Sample (LCS)

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-035 REV# 7.

Calibration Information:

Calibration Information
All initial and continuing calibration requirements have been met.

Standards Information
Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

Sample Geometry
All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information
The blank volume is representative of the sample volume in this batch.

Designated QC
The following sample was used for QC: 151732002 (#2 MW2A).

QC Information
All of the QC samples met the required acceptance limits.

Technical Information:

Holding Time
All sample procedures for this sample set were performed within the required holding time.

Preparation Information
All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis
Samples were reprepped once due to interference and once for low tracer yield.

Miscellaneous Information:

NCR Documentation
Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. The following NCR was generated for this SDG:
NCR 280211 was generated due to RDL less than MDA. 1. Sample 151732002, 1201001147, and 1201001148 did not meet the client's detection limit due to small sample aliquot. The samples were reprepped twice and the aliquots reduced due to interference and low tracer yields. 1. Reporting results.

Manual Integration
No manual integrations were performed on data in this batch.

Qualifier information
Manual qualifiers were not required.

Method/Analysis Information

Product:	**Gammaspec, Gamma, Liquid (Standard List)**
Analytical Method:	EPA 901.1
Analytical Batch Number:	488129

Sample ID	Client ID
151732001	#1 MW1C
151732002	#2 MW2A
151732003	#3 MW3A
151732004	#4 MW4A
1200996967	Method Blank (MB)
1200996968	151732001(#1 MW1C) Sample Duplicate (DUP)
1200996969	151732001(#1 MW1C) Matrix Spike (MS)
1200996970	Laboratory Control Sample (LCS)

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-013 REV# 10.

Calibration Information:

Calibration Information
All initial and continuing calibration requirements have been met.

Standards Information
Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

Sample Geometry
All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information
The blank volume is representative of the sample volume in this batch.

Designated QC
The following sample was used for QC: 151732001 (#1 MW1C).

QC Information
All of the QC samples met the required acceptance limits.

Technical Information:

Holding Time
All sample procedures for this sample set were performed within the required holding time.

Preparation Information

All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis
Sample 1200996967 (MB) was recounted due to analyst error.
Sample 151732001 (#1 MW1C) was recounted due to high relative percent difference/relative error ratio.
Sample 1200996969 (#1 MW1C) was recounted due to low/high recovery.

Miscellaneous Information:

NCR Documentation
Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. An NCR was not generated for this SDG.

Additional Comments
The relative percent difference for K-40 did not meet the client requirements. However, precision is shown when a relative error ratio of 2.37 is calculated.

Qualifier information

Qualifier	Reason	Analyte	Sample
UI	Data rejected due to high peak uncertainty.	Thorium-230	151732002
UI	Data rejected due to high uncertainty.	Potassium-40	1200996967
UI	Data rejected due to low abundance.	Bismuth-214	151732003
		Lead-212	151732002
		Lead-214	151732003
		Promethium-146	1200996967
		Thorium-234	1200996968
		Uranium-238	1200996968
UI	Data rejected due to no valid peak.	Bismuth-212	151732003
		Cerium-144	1200996967

Method/Analysis Information

Product:	**GFPC, Gross A/B, liquid**
Analytical Method:	EPA 900.0
Analytical Batch Number:	489159

Sample ID	Client ID
151732001	#1 MW1C
151732002	#2 MW2A
151732003	#3 MW3A
151732004	#4 MW4A
1200999365	Method Blank (MB)
1200999366	151735002(S-0000222701) Sample Duplicate (DUP)
1200999367	151735002(S-0000222701) Matrix Spike (MS)
1200999368	151735002(S-0000222701) Matrix Spike Duplicate (MSD)
1200999369	Laboratory Control Sample (LCS)

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-001 REV# 9.

Calibration Information:

Calibration Information
All initial and continuing calibration requirements have been met.

Standards Information
Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

Sample Geometry
All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information
The blank volume is representative of the sample volume in this batch.

Designated QC
The following sample was used for QC: 151735002 (S-0000222701).

QC Information
All of the QC samples met the required acceptance limits.

Technical Information:

Holding Time
All sample procedures for this sample set were performed within the required holding time.

Preparation Information
All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis
Samples were reprepped due to high relative percent difference/relative error ratio.

Chemical Recoveries
All chemical recoveries meet the required acceptance limits for this sample set.

Gross Alpha/Beta Preparation Information
High hygroscopic salt content in evaporated samples can cause the sample mass to fluctuate due to moisture absorption. To minimize this interference, the salts are converted to oxides by heating the sample under a flame until a dull red color is obtained. The conversion to oxides stabilizes the sample weight and ensures that proper alpha/beta efficiencies are assigned for each sample. Volatile radioisotopes of carbon, hydrogen, technetium, polonium and cesium may be lost during sample heating.

Miscellaneous Information:

NCR Documentation
Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. An NCR was not generated for this SDG.

Qualifier information
Manual qualifiers were not required.

Method/Analysis Information

Product:	**GFPC, Total Sr, Liquid**
Analytical Method:	EPA 905.0 Modified

Analytical Batch Number: 487482

Sample ID	Client ID
151732001	#1 MW1C
151732002	#2 MW2A
151732003	#3 MW3A
151732004	#4 MW4A
1200995396	Method Blank (MB)
1200995397	151732003(#3 MW3A) Sample Duplicate (DUP)
1200995398	151732003(#3 MW3A) Matrix Spike (MS)
1200995399	Laboratory Control Sample (LCS)

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-004 REV# 9.

Calibration Information:

Calibration Information
All initial and continuing calibration requirements have been met.

Standards Information
Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

Sample Geometry
All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information
The blank volume is representative of the sample volume in this batch.

Designated QC
The following sample was used for QC: 151732003 (#3 MW3A).

QC Information
All of the QC samples met the required acceptance limits.

Technical Information:

Holding Time
All sample procedures for this sample set were performed within the required holding time.

Preparation Information
All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis
None of the samples in this sample set required reprep or reanalysis.

Chemical Recoveries
All chemical recoveries meet the required acceptance limits for this sample set.

Miscellaneous Information:

NCR Documentation
Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. An NCR was not generated for this SDG.

Qualifier information
Manual qualifiers were not required.

Method/Analysis Information

Product:	**Liquid Scint Tc99, Liquid**
Analytical Method:	DOE EML HASL-300, Tc-02-RC Modified
Analytical Batch Number:	487449

Sample ID	Client ID
151732001	#1 MW1C
151732002	#2 MW2A
151732003	#3 MW3A
151732004	#4 MW4A
1200995311	Method Blank (MB)
1200995312	151732001(#1 MW1C) Sample Duplicate (DUP)
1200995313	151732001(#1 MW1C) Matrix Spike (MS)
1200995314	Laboratory Control Sample (LCS)

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-005 REV# 12.

Calibration Information:

Calibration Information
All initial and continuing calibration requirements have been met.

Standards Information
Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

Sample Geometry
All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information
The blank volume is representative of the sample volume in this batch.

Designated QC
The following sample was used for QC: 151732001 (#1 MW1C).

QC Information
All of the QC samples met the required acceptance limits.

Technical Information:

Holding Time
All sample procedures for this sample set were performed within the required holding time.

Preparation Information
All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis
None of the samples in this sample set required reprep or reanalysis.

Miscellaneous Information:

NCR Documentation
Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. An NCR was not generated for this SDG.

Qualifier information
Manual qualifiers were not required.

Method/Analysis Information

Product:	**Liquid Scint Fe55, Liquid**
Analytical Method:	DOE RESL Fe-1, Modified
Analytical Batch Number:	487444

Sample ID	Client ID
151732001	#1 MW1C
151732002	#2 MW2A
151732003	#3 MW3A
151732004	#4 MW4A
1200995299	Method Blank (MB)
1200995300	151732001(#1 MW1C) Sample Duplicate (DUP)
1200995301	151732001(#1 MW1C) Matrix Spike (MS)
1200995302	Laboratory Control Sample (LCS)

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-040 REV# 3.

Calibration Information:

Calibration Information
All initial and continuing calibration requirements have been met.

Standards Information
Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

Sample Geometry
All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information
The blank volume is representative of the sample volume in this batch.

Designated QC
The following sample was used for QC: 151732001 (#1 MW1C).

QC Information
All of the QC samples met the required acceptance limits.

Technical Information:

Holding Time
All sample procedures for this sample set were performed within the required holding time.

Preparation Information
All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis
None of the samples in this sample set required reprep or reanalysis.

Miscellaneous Information:

NCR Documentation
Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. An NCR was not generated for this SDG.

Qualifier information
Manual qualifiers were not required.

Method/Analysis Information

Product:	**Liquid Scint Ni63, Liquid**
Analytical Method:	DOE RESL Ni-1, Modified
Analytical Batch Number:	487445

Sample ID	Client ID
151732001	#1 MW1C
151732002	#2 MW2A
151732003	#3 MW3A
151732004	#4 MW4A
1200995303	Method Blank (MB)
1200995304	151732001(#1 MW1C) Sample Duplicate (DUP)
1200995305	151732001(#1 MW1C) Matrix Spike (MS)
1200995306	Laboratory Control Sample (LCS)

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-022 REV# 7.

Calibration Information:

Calibration Information
All initial and continuing calibration requirements have been met.

Standards Information
Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

Sample Geometry
All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information
The blank volume is representative of the sample volume in this batch.

Designated QC
The following sample was used for QC: 151732001 (#1 MW1C).

QC Information
All of the QC samples met the required acceptance limits.

Technical Information:

Holding Time
All sample procedures for this sample set were performed within the required holding time.

Preparation Information
All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis
None of the samples in this sample set required reprep or reanalysis.

Miscellaneous Information:

NCR Documentation
Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. An NCR was not generated for this SDG.

Qualifier information
Manual qualifiers were not required.

Method/Analysis Information

Product:	**LSC, Tritium Dist, Liquid**
Analytical Method:	EPA 906.0 Modified
Analytical Batch Number:	487451

Sample ID	Client ID
151732001	#1 MW1C
151732002	#2 MW2A
151732003	#3 MW3A
151732004	#4 MW4A
1200995315	Method Blank (MB)
1200995316	151732001(#1 MW1C) Sample Duplicate (DUP)
1200995317	151732001(#1 MW1C) Matrix Spike (MS)
1200995318	Laboratory Control Sample (LCS)

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-002 REV# 10.

Calibration Information:

Calibration Information

All initial and continuing calibration requirements have been met.

Standards Information
Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

Sample Geometry
All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information
The blank volume is representative of the sample volume in this batch.

Designated QC
The following sample was used for QC: 151732001 (#1 MW1C).

QC Information
All of the QC samples met the required acceptance limits.

Technical Information:

Holding Time
All sample procedures for this sample set were performed within the required holding time.

Preparation Information
All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis
None of the samples in this sample set required reprep or reanalysis.

Miscellaneous Information:

NCR Documentation
Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. An NCR was not generated for this SDG.

Qualifier information
Manual qualifiers were not required.

Method/Analysis Information

Product:	**Liquid Scint C14, Liquid**
Analytical Method:	EPA EERF C-01 Modified
Analytical Batch Number:	487453

Sample ID	Client ID
151732001	#1 MW1C
151732002	#2 MW2A
151732003	#3 MW3A
151732004	#4 MW4A
1200995323	Method Blank (MB)
1200995324	151732001(#1 MW1C) Sample Duplicate (DUP)
1200995325	151732001(#1 MW1C) Matrix Spike (MS)
1200995326	Laboratory Control Sample (LCS)

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-003 REV# 8.

Calibration Information:

Calibration Information
All initial and continuing calibration requirements have been met.

Standards Information
Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

Sample Geometry
All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information
The blank volume is representative of the sample volume in this batch.

Designated QC
The following sample was used for QC: 151732001 (#1 MW1C).

QC Information
All of the QC samples met the required acceptance limits.

Technical Information:

Holding Time
All sample procedures for this sample set were performed within the required holding time.

Preparation Information
All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis
None of the samples in this sample set required reprep or reanalysis.

Miscellaneous Information:

NCR Documentation
Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. An NCR was not generated for this SDG.

Qualifier information
Manual qualifiers were not required.

Method/Analysis Information

Product:	**Liquid Scint Pm147, liquid**
Analytical Method:	EPA EERF PM-01-1 Modified
Analytical Batch Number:	487442

Sample ID	Client ID

151732001	#1 MW1C
151732002	#2 MW2A
151732003	#3 MW3A
151732004	#4 MW4A
1200995295	Method Blank (MB)
1200995296	151732004(#4 MW4A) Sample Duplicate (DUP)
1200995297	151732004(#4 MW4A) Matrix Spike (MS)
1200995298	Laboratory Control Sample (LCS)

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-020 REV# 6.

Calibration Information:

Calibration Information
All initial and continuing calibration requirements have been met.

Standards Information
Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

Sample Geometry
All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information
The blank volume is representative of the sample volume in this batch.

Designated QC
The following sample was used for QC: 151732004 (#4 MW4A).

QC Information
All of the QC samples met the required acceptance limits.

Technical Information:

Holding Time
All sample procedures for this sample set were performed within the required holding time.

Preparation Information
All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis
Samples 1200995295 (MB), 1200995296 (#4 MW4A), 151732001 (#1 MW1C), 151732002 (#2 MW2A), 151732003 (#3 MW3A) and 151732004 (#4 MW4A) were recounted due to high MDAs.

Miscellaneous Information:

NCR Documentation
Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. An NCR was not generated for this SDG.

Qualifier information
Manual qualifiers were not required.

Method/Analysis Information

Product: **Gamma Ni59, Liquid**
Analytical Method: DOE RESL Ni-1
Analytical Batch Number: 490999

	Sample ID	Client ID
SOP Reference	151732001	#1 MW1C
Procedure for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-022 REV# 7.	151732002	#2 MW2A
	151732003	#3 MW3A
	151732004	#4 MW4A
	1201003355	Method Blank (MB)
	1201003356	151732001(#1 MW1C) Sample Duplicate (DUP)
	1201003357	151732001(#1 MW1C) Matrix Spike (MS)
	1201003358	Laboratory Control Sample (LCS)

Calibration Information:

Calibration Information
All initial and continuing calibration requirements have been met.

Standards Information
Standard solution(s) for these analyses are NIST traceable and used before the expiration date(s).

Sample Geometry
All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information
The blank volume is representative of the sample volume in this batch.

Designated QC
The following sample was used for QC: 151732001 (#1 MW1C).

QC Information
All of the QC samples met the required acceptance limits.

Technical Information:

Holding Time
All sample procedures for this sample set were performed within the required holding time.

Preparation Information
All preparation criteria have been met for these analyses.

Sample Re-prep/Re-analysis

Samples were reprepped with a higher volume to meet the required detection limits.

Chemical Recoveries
All chemical recoveries meet the required acceptance limits for this sample set.

Miscellaneous Information:

NCR Documentation
Nonconformance reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. An NCR was not generated for this SDG.

Qualifier information
Manual qualifiers were not required.

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.

Review Validation:
GEL requires all analytical data to be verified by a qualified data validator. In addition, all data designated for CLP or CLP-like packaging will receive a third level validation upon completion of the data package.
The following data validator verified the information presented in this case narrative:

Reviewer: [signature] 12/31/05

COMPANY - WIDE NONCONFORMANCE REPORT

Mo.Day Yr.	Division:	Quality Criteria:	Type:
29-DEC-05	Radiochemistry	Specifications	Process
Instrument Type:	**Test / Method:**	**Matrix Type:**	**Client Code:**
LSC	DOE EML HASL-300, Pu-11-RC Modified	Liquid	SMUD
Batch ID:	**Sample Numbers:**		
490003	See Below		

Potentially affected work order(s)(SDG): 151732

Application Issues:

RDL less than MDA

Specification and Requirements Nonconformance Description:	NRG Disposition:
1. Sample 151732002, 1201001147, and 1201001148 did not meet the client's detection limit due to small sample aliquot. The samples were reprepped twice and the aliquots reduced due to interference and low tracer yields.	1. Reporting results.

Originator's Name:
Melanie Aycock 29-DEC-05

Data Validator/Group Leader:
Heather Anderson 30-DEC-05

Quality Review:

Director:

SAMPLE DATA SUMMARY

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

Certificate of Analysis Report for
for
SMUD001 Rancho Seco Nuclear Generating Station
Client SDG: 151732 GEL Work Order: 151732

Sample(s) Contained within this report:

Lab Sample ID	Client Sample ID	Sample Description	Collected
151732001	#1 MW1C	N/A	12/05/2005 14:00
151732002	#2 MW2A	N/A	11/29/2005 12:30
151732003	#3 MW3A	N/A	12/05/2005 14:50
151732004	#4 MW4A	N/A	12/06/2005 11:50

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 Certificate of Analysis.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, LLC standard operating procedures. Please direct any questions to your Project Manager, Martha Harrison.

MH exit by Gibson 12/31/05

Reviewed by

GENERAL ENGINEERING LABORATORIES, LLC

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

10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID:	**151732001**	**Client:**	**Rancho Seco Nuclear Generating Station**
Client Sample ID:	**#1 MW1C**	**Collect Date:**	**December 05, 2005**
Matrix:	**Ground Water**	**Receive Date:**	**December 12, 2005**
Amount of Sample Received:		**Report Date:**	**December 31, 2005**

Analyte	Run Date	Qualifier	Activity[2]	Uncertainty	MDA[1]	RL	TPU	Critical Level	Units
ALPHA	12/23/05	U	5.05E-01	6.26E-01	1.13E+00	5.00E+00	6.29E-01	4.20E-01	pCi/L
BETA	12/23/05	U	2.23E+00	1.89E+00	3.71E+00	5.00E+00	1.89E+00	1.77E+00	pCi/L
H-3	12/14/05	U	1.13E+02	2.11E+02	3.59E+02	7.00E+02	2.11E+02	1.73E+02	pCi/L
C-14	12/14/05	U	9.08E+00	1.57E+01	2.66E+01	5.00E+01	1.57E+01	1.30E+01	pCi/L
Fe-55	12/15/05	U	-2.82E+01	3.71E+01	5.66E+01	1.00E+02	3.71E+01	2.79E+01	pCi/L
Ni-63	12/15/05	U	1.76E+00	1.46E+01	2.51E+01	5.00E+01	1.46E+01	1.22E+01	pCi/L
Tc-99	12/19/05	U	-5.14E+00	1.34E+01	2.31E+01	5.00E+01	1.34E+01	1.13E+01	pCi/L
Pm-147	12/21/05	U	3.04E+00	4.19E+00	7.06E+00	1.00E+01	4.20E+00	3.47E+00	pCi/L
Pu-241	12/16/05	U	-1.29E+00	7.06E+00	1.22E+01	1.50E+01	7.06E+00	5.95E+00	pCi/L
Total Strontium	12/14/05	U	-7.03E-01	4.89E-01	1.27E+00	2.00E+00	4.90E-01	5.98E-01	pCi/L
Alpha Spec									
Np-237	12/15/05	U	3.85E-02	1.53E-01	4.39E-01	1.00E+00	1.53E-01	1.19E-01	pCi/L
Pu-238	12/15/05	U	0.00E+00	1.62E-01	2.24E-01	1.00E+00	1.62E-01	0.00E+00	pCi/L
Pu-239/240	12/15/05	U	-5.96E-02	6.74E-02	5.51E-01	1.00E+00	6.77E-02	1.63E-01	pCi/L
Pu-244	12/15/05	U	1.65E-01	2.29E-01	2.24E-01	1.00E+00	2.30E-01	0.00E+00	pCi/L
Am-241	12/15/05	U	2.02E-01	2.37E-01	3.28E-01	1.00E+00	2.38E-01	7.51E-02	pCi/L
Cm-243/244	12/15/05	U	-4.74E-02	1.40E-01	4.39E-01	1.00E+00	1.40E-01	1.30E-01	pCi/L
Gamma Spec									
Be-7	12/28/05	U	-6.28E-01	1.88E+01	3.17E+01	1.00E+01	1.85E+01	1.50E+01	pCi/L
Na-22	12/28/05	U	-1.20E+00	1.86E+00	3.14E+00	1.00E+01	1.82E+00	1.43E+00	pCi/L
K-40	12/28/05		3.27E+01	2.75E+01	3.05E+01	1.00E+01	2.70E+01	1.39E+01	pCi/L
Cr-51	12/28/05	U	-2.41E+00	2.50E+01	4.25E+01	1.00E+01	2.45E+01	2.03E+01	pCi/L
Mn-54	12/28/05	U	-1.08E+00	1.57E+00	2.58E+00	1.00E+01	1.53E+00	1.19E+00	pCi/L
Fe-59	12/28/05	U	1.72E+00	4.28E+00	8.09E+00	1.00E+01	4.20E+00	3.73E+00	pCi/L
Co-56	12/28/05	U	2.13E-01	1.88E+00	3.34E+00	1.00E+01	1.84E+00	1.55E+00	pCi/L
Co-57	12/28/05	U	7.97E-01	1.66E+00	2.96E+00	1.00E+01	1.63E+00	1.43E+00	pCi/L
Co-58	12/28/05	U	-1.79E+00	1.94E+00	3.13E+00	1.00E+01	1.90E+00	1.45E+00	pCi/L
Co-60	12/28/05	U	-1.02E-01	1.84E+00	3.32E+00	1.00E+01	1.80E+00	1.52E+00	pCi/L
Ni-59	12/29/05	U	1.51E+01	1.04E+01	1.66E+01	2.00E+01	1.02E+01	7.68E+00	pCi/L
Zn-65	12/28/05	U	-7.23E-01	3.71E+00	6.63E+00	1.00E+01	3.64E+00	3.05E+00	pCi/L
Y-88	12/28/05	U	-3.74E-01	1.65E+00	2.94E+00	1.00E+01	1.61E+00	1.28E+00	pCi/L
Zr-95	12/28/05	U	-2.36E-01	3.75E+00	6.55E+00	1.00E+01	3.67E+00	3.06E+00	pCi/L
Nb-94	12/28/05	U	6.19E-01	1.67E+00	3.01E+00	1.00E+01	1.64E+00	1.42E+00	pCi/L
Nb-95	12/28/05	U	7.80E-01	2.43E+00	4.40E+00	1.00E+01	2.38E+00	2.05E+00	pCi/L
Ru-106	12/28/05	U	1.15E+01	1.64E+01	3.03E+01	1.00E+01	1.60E+01	1.43E+01	pCi/L
Ag-110m	12/28/05	U	-2.34E-01	1.61E+00	2.82E+00	1.00E+01	1.58E+00	1.32E+00	pCi/L
Sn-113	12/28/05	U	-9.27E-01	2.56E+00	4.25E+00	1.00E+01	2.51E+00	2.02E+00	pCi/L

Note(s): **1. Calculated MDAs are a-posteriori values.**

2. Activity concentration net +/- 2 sigma overall on reference date.

3. Results are statistically positive at the 99.9% confidence level (activity is greater than three times the one sigma uncertainty)

U **Target analyte was analyzed for but not detected above the MDL or LOD.**

UI **Uncertain identification for gamma spectroscopy.**

X **Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.**

GENERAL ENGINEERING LABORATORIES, LLC

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

10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID:	151732001	**Client:**	Rancho Seco Nuclear Generating Station
Client Sample ID:	#1 MW1C	**Collect Date:**	December 05, 2005
Matrix:	Ground Water	**Receive Date:**	December 12, 2005
Amount of Sample Received:		**Report Date:**	December 31, 2005

Analyte	Run Date	Qualifier	Activity[2]	Uncertainty	MDA[1]	RL	TPU	Critical Level	Units
Sb-124	12/28/05	U	-1.85E+00	3.98E+00	6.82E+00	1.00E+01	3.90E+00	2.98E+00	pCi/L
Sb-125	12/28/05	U	2.44E+00	5.31E+00	8.24E+00	1.00E+01	5.20E+00	3.90E+00	pCi/L
Cs-134	12/28/05	U	6.24E-01	1.82E+00	3.30E+00	1.00E+01	1.78E+00	1.54E+00	pCi/L
Cs-136	12/28/05	U	5.23E+00	6.86E+00	1.30E+01	1.00E+01	6.72E+00	5.99E+00	pCi/L
Cs-137	12/28/05	U	3.08E-01	2.38E+00	2.99E+00	1.00E+01	2.33E+00	1.40E+00	pCi/L
Ba-133	12/28/05	U	5.06E-01	2.60E+00	3.95E+00	1.00E+01	2.55E+00	1.88E+00	pCi/L
Ba-140	12/28/05	U	1.07E+01	2.01E+01	3.69E+01	1.00E+01	1.97E+01	1.75E+01	pCi/L
Ce-139	12/28/05	U	-4.91E-01	1.86E+00	3.19E+00	1.00E+01	1.82E+00	1.54E+00	pCi/L
Ce-141	12/28/05	U	2.85E+00	6.81E+00	7.27E+00	1.00E+01	6.67E+00	3.51E+00	pCi/L
Ce-144	12/28/05	U	-6.92E+00	1.25E+01	2.14E+01	1.00E+01	1.22E+01	1.03E+01	pCi/L
Nd-147	12/28/05	U	1.63E+01	4.62E+01	8.41E+01	1.00E+01	4.53E+01	3.97E+01	pCi/L
Pm-144	12/28/05	U	-5.11E-03	1.70E+00	2.99E+00	1.00E+01	1.67E+00	1.41E+00	pCi/L
Pm-146	12/28/05	U	2.65E+00	2.38E+00	4.31E+00	1.00E+01	2.33E+00	2.05E+00	pCi/L
Eu-152	12/28/05	U	4.63E+00	6.19E+00	9.76E+00	1.00E+01	6.06E+00	4.67E+00	pCi/L
Eu-154	12/28/05	U	-3.39E+00	5.16E+00	8.72E+00	1.00E+01	5.05E+00	3.97E+00	pCi/L
Eu-155	12/28/05	U	1.39E-01	6.87E+00	1.13E+01	1.00E+01	6.73E+00	5.46E+00	pCi/L
Ir-192	12/28/05	U	-1.13E+00	2.03E+00	3.36E+00	1.00E+01	1.99E+00	1.60E+00	pCi/L
Hg-203	12/28/05	U	-2.83E-01	2.55E+00	4.35E+00	1.00E+01	2.50E+00	2.08E+00	pCi/L
Tl-208	12/28/05	U	9.45E-01	2.91E+00	3.41E+00	1.00E+01	2.85E+00	1.61E+00	pCi/L
Pb-210	12/28/05	U	-1.98E+01	3.87E+02	5.80E+02	1.00E+01	3.79E+02	2.80E+02	pCi/L
Pb-212	12/28/05	U	1.35E+00	5.89E+00	5.61E+00	1.00E+01	5.77E+00	2.70E+00	pCi/L
Pb-214	12/28/05	U	4.05E+00	6.54E+00	6.16E+00	1.00E+01	6.41E+00	2.93E+00	pCi/L
Bi-212	12/28/05	U	5.49E+00	1.32E+01	2.40E+01	1.00E+01	1.29E+01	1.13E+01	pCi/L
Bi-214	12/28/05	U	4.62E+00	8.74E+00	7.62E+00	1.00E+01	8.56E+00	3.64E+00	pCi/L
Ra-228	12/28/05	U	-3.73E-01	6.17E+00	1.07E+01	1.00E+01	6.05E+00	4.99E+00	pCi/L
Ac-228	12/28/05	U	-3.73E-01	6.17E+00	1.07E+01	1.00E+01	6.05E+00	4.99E+00	pCi/L
Th-230	12/28/05	U	4.62E+00	8.73E+00	5.56E+00	1.00E+01	8.56E+00	2.61E+00	pCi/L
Th-234	12/28/05	3,U	1.66E+02	9.50E+01	1.68E+02	1.00E+01	9.31E+01	8.18E+01	pCi/L
U-235	12/28/05	U	8.78E+00	1.84E+01	2.24E+01	1.00E+01	1.81E+01	1.09E+01	pCi/L
U-238	12/28/05	3,U	1.66E+02	9.50E+01	1.68E+02	1.00E+01	9.31E+01	8.18E+01	pCi/L
Np-239	12/28/05	U	2.11E-01	1.27E+01	2.07E+01	1.00E+01	1.24E+01	1.00E+01	pCi/L
Am-241	12/28/05	U	-5.11E+00	1.16E+01	1.90E+01	1.00E+01	1.13E+01	9.17E+00	pCi/L

Note(s): **1. Calculated MDAs are a-posteriori values.**
2. Activity concentration net +/- 2 sigma overall on reference date.
3. Results are statistically positive at the 99.9% confidence level (activity is greater than three times the one sigma uncertainty)

U Target analyte was analyzed for but not detected above the MDL or LOD.
UI Uncertain identification for gamma spectroscopy.
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GENERAL ENGINEERING LABORATORIES, LLC

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10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID:	**151732002**	**Client:**	**Rancho Seco Nuclear Generating Station**
Client Sample ID:	**#2 MW2A**	**Collect Date:**	**November 29, 2005**
Matrix:	**Ground Water**	**Receive Date:**	**December 12, 2005**
Amount of Sample Received:		**Report Date:**	**December 31, 2005**

Analyte	Run Date	Qualifier	Activity[2]	Uncertainty	MDA[1]	RL	TPU	Critical Level	Units
ALPHA	12/22/05	3	7.07E+00	2.45E+00	2.95E+00	5.00E+00	2.57E+00	1.34E+00	pCi/L
BETA	12/22/05	3	1.71E+01	3.07E+00	4.36E+00	5.00E+00	3.12E+00	2.12E+00	pCi/L
H-3	12/14/05	U	2.62E+02	2.17E+02	3.59E+02	7.00E+02	2.17E+02	1.73E+02	pCi/L
C-14	12/14/05	U	6.18E+00	1.56E+01	2.66E+01	5.00E+01	1.56E+01	1.30E+01	pCi/L
Fe-55	12/15/05	U	-1.98E+01	3.26E+01	5.02E+01	1.00E+02	3.26E+01	2.47E+01	pCi/L
Ni-63	12/15/05	U	3.05E+00	1.69E+01	2.89E+01	5.00E+01	1.69E+01	1.41E+01	pCi/L
Tc-99	12/19/05	U	-3.14E+00	1.17E+01	2.01E+01	5.00E+01	1.17E+01	9.89E+00	pCi/L
Pm-147	12/21/05	U	4.64E+00	5.15E+00	8.64E+00	1.00E+01	5.16E+00	4.25E+00	pCi/L
Pu-241	12/28/05	U	2.13E+01	3.44E+01	5.79E+01	1.50E+01	3.44E+01	2.85E+01	pCi/L
Total Strontium	12/14/05	U	-2.20E-02	4.46E-01	1.03E+00	2.00E+00	4.45E-01	4.77E-01	pCi/L
Alpha Spec									
Np-237	12/15/05	U	8.02E-02	1.57E-01	2.17E-01	1.00E+00	1.57E-01	0.00E+00	pCi/L
Pu-238	12/15/05	U	-5.22E-02	2.59E-01	8.37E-01	1.00E+00	2.59E-01	3.08E-01	pCi/L
Pu-239/240	12/15/05	U	-1.34E-01	2.04E-01	8.36E-01	1.00E+00	2.05E-01	3.08E-01	pCi/L
Pu-244	12/15/05	U	2.05E-01	2.82E-01	4.83E-01	1.00E+00	2.83E-01	1.31E-01	pCi/L
Am-241	12/15/05	U	5.45E-02	1.45E-01	2.72E-01	1.00E+00	1.45E-01	0.00E+00	pCi/L
Cm-243/244	12/15/05	U	7.64E-02	2.03E-01	5.01E-01	1.00E+00	2.03E-01	1.15E-01	pCi/L
Gamma Spec									
Be-7	12/19/05	U	-9.72E+00	1.71E+01	2.78E+01	1.00E+01	1.68E+01	1.30E+01	pCi/L
Na-22	12/19/05	U	-2.31E-01	1.68E+00	3.01E+00	1.00E+01	1.65E+00	1.34E+00	pCi/L
K-40	12/19/05		4.38E+01	3.61E+01	2.74E+01	1.00E+01	3.54E+01	1.20E+01	pCi/L
Cr-51	12/19/05	U	-4.62E+00	2.46E+01	4.14E+01	1.00E+01	2.41E+01	1.97E+01	pCi/L
Mn-54	12/19/05	U	-1.37E-01	1.62E+00	2.91E+00	1.00E+01	1.59E+00	1.33E+00	pCi/L
Fe-59	12/19/05	U	1.59E+00	6.03E+00	8.22E+00	1.00E+01	5.91E+00	3.76E+00	pCi/L
Co-56	12/19/05	U	2.72E-01	1.93E+00	3.52E+00	1.00E+01	1.89E+00	1.62E+00	pCi/L
Co-57	12/19/05	U	-2.26E-01	1.76E+00	3.01E+00	1.00E+01	1.72E+00	1.46E+00	pCi/L
Co-58	12/19/05	U	1.38E+00	1.83E+00	3.55E+00	1.00E+01	1.79E+00	1.64E+00	pCi/L
Co-60	12/19/05	U	1.88E-01	1.68E+00	3.12E+00	1.00E+01	1.65E+00	1.39E+00	pCi/L
Ni-59	12/30/05	U	1.37E+01	9.82E+00	1.57E+01	2.00E+01	9.68E+00	7.49E+00	pCi/L
Zn-65	12/19/05	U	-1.19E+00	3.98E+00	6.90E+00	1.00E+01	3.90E+00	3.14E+00	pCi/L
Y-88	12/19/05	U	1.89E+00	1.99E+00	4.30E+00	1.00E+01	1.95E+00	1.91E+00	pCi/L
Zr-95	12/19/05	U	3.29E+00	4.39E+00	6.18E+00	1.00E+01	4.30E+00	2.85E+00	pCi/L
Nb-94	12/19/05	U	-5.65E-01	1.69E+00	2.95E+00	1.00E+01	1.66E+00	1.38E+00	pCi/L
Nb-95	12/19/05	U	-4.92E-01	2.23E+00	3.95E+00	1.00E+01	2.19E+00	1.81E+00	pCi/L
Ru-106	12/19/05	U	-1.15E+01	1.51E+01	2.55E+01	1.00E+01	1.48E+01	1.18E+01	pCi/L
Ag-110m	12/19/05	U	-9.87E-01	1.42E+00	2.41E+00	1.00E+01	1.39E+00	1.10E+00	pCi/L
Sn-113	12/19/05	U	1.18E+00	2.41E+00	4.27E+00	1.00E+01	2.37E+00	2.02E+00	pCi/L

Note(s): **1. Calculated MDAs are a-posteriori values.**

2. Activity concentration net +/- 2 sigma overall on reference date.

3. Results are statistically positive at the 99.9% confidence level (activity is greater than three times the one sigma uncertainty)

U **Target analyte was analyzed for but not detected above the MDL or LOD.**

UI **Uncertain identification for gamma spectroscopy.**

X **Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.**

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10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID:	151732002	**Client:**	Rancho Seco Nuclear Generating Station
Client Sample ID:	#2 MW2A	**Collect Date:**	November 29, 2005
Matrix:	Ground Water	**Receive Date:**	December 12, 2005
Amount of Sample Received:		**Report Date:**	December 31, 2005

Analyte	Run Date	Qualifier	Activity[2]	Uncertainty	MDA[1]	RL	TPU	Critical Level	Units
Sb-124	12/19/05	U	3.20E+00	4.60E+00	9.54E+00	1.00E+01	4.51E+00	4.25E+00	pCi/L
Sb-125	12/19/05	U	2.82E+00	5.09E+00	9.01E+00	1.00E+01	4.99E+00	4.26E+00	pCi/L
Cs-134	12/19/05	U	4.83E-01	1.75E+00	3.26E+00	1.00E+01	1.72E+00	1.50E+00	pCi/L
Cs-136	12/19/05	U	-3.68E-01	6.08E+00	1.09E+01	1.00E+01	5.96E+00	4.95E+00	pCi/L
Cs-137	12/19/05	U	6.04E-01	1.65E+00	2.75E+00	1.00E+01	1.61E+00	1.27E+00	pCi/L
Ba-133	12/19/05	U	9.28E-01	2.32E+00	3.64E+00	1.00E+01	2.28E+00	1.72E+00	pCi/L
Ba-140	12/19/05	U	1.07E+01	2.12E+01	3.28E+01	1.00E+01	2.07E+01	1.54E+01	pCi/L
Ce-139	12/19/05	U	9.16E-02	1.85E+00	3.17E+00	1.00E+01	1.81E+00	1.53E+00	pCi/L
Ce-141	12/19/05	U	-5.00E-01	4.52E+00	7.72E+00	1.00E+01	4.43E+00	3.74E+00	pCi/L
Ce-144	12/19/05	U	-4.37E+00	1.39E+01	2.35E+01	1.00E+01	1.36E+01	1.14E+01	pCi/L
Nd-147	12/19/05	U	-1.47E+01	3.85E+01	6.35E+01	1.00E+01	3.77E+01	2.95E+01	pCi/L
Pm-144	12/19/05	U	2.17E-01	1.59E+00	2.89E+00	1.00E+01	1.55E+00	1.34E+00	pCi/L
Pm-146	12/19/05	U	-7.84E-01	2.31E+00	3.83E+00	1.00E+01	2.26E+00	1.80E+00	pCi/L
Eu-152	12/19/05	U	3.25E+00	5.27E+00	9.34E+00	1.00E+01	5.16E+00	4.44E+00	pCi/L
Eu-154	12/19/05	U	-6.31E-01	4.69E+00	8.40E+00	1.00E+01	4.60E+00	3.73E+00	pCi/L
Eu-155	12/19/05	U	3.97E+00	7.25E+00	1.28E+01	1.00E+01	7.10E+00	6.19E+00	pCi/L
Ir-192	12/19/05	U	1.92E+00	2.17E+00	3.87E+00	1.00E+01	2.13E+00	1.85E+00	pCi/L
Hg-203	12/19/05	U	-1.55E+00	2.47E+00	4.07E+00	1.00E+01	2.42E+00	1.95E+00	pCi/L
Tl-208	12/19/05	U	1.55E+00	1.95E+00	3.67E+00	1.00E+01	1.91E+00	1.73E+00	pCi/L
Pb-210	12/19/05	U	2.04E+02	5.25E+02	8.32E+02	1.00E+01	5.14E+02	4.02E+02	pCi/L
Pb-212	12/19/05	UUI	0.00E+00	3.74E+00	6.76E+00	1.00E+01	3.66E+00	3.27E+00	pCi/L
Pb-214	12/19/05	U	5.40E+00	8.77E+00	7.77E+00	1.00E+01	8.60E+00	3.72E+00	pCi/L
Bi-212	12/19/05	U	9.35E+00	1.21E+01	2.35E+01	1.00E+01	1.19E+01	1.08E+01	pCi/L
Bi-214	12/19/05	U	5.80E+00	7.27E+00	8.56E+00	1.00E+01	7.12E+00	4.09E+00	pCi/L
Ra-228	12/19/05	U	6.35E+00	6.28E+00	1.23E+01	1.00E+01	6.15E+00	5.69E+00	pCi/L
Ac-228	12/19/05	U	6.35E+00	6.28E+00	1.23E+01	1.00E+01	6.15E+00	5.69E+00	pCi/L
Th-230	12/19/05	UUI	0.00E+00	7.27E+00	5.72E+00	1.00E+01	7.12E+00	2.67E+00	pCi/L
Th-234	12/19/05	U	5.44E+01	1.66E+02	1.91E+02	1.00E+01	1.62E+02	9.26E+01	pCi/L
U-235	12/19/05	U	1.26E+01	1.53E+01	2.38E+01	1.00E+01	1.50E+01	1.16E+01	pCi/L
U-238	12/19/05	U	5.44E+01	1.66E+02	1.91E+02	1.00E+01	1.62E+02	9.26E+01	pCi/L
Np-239	12/19/05	U	-6.41E+00	1.34E+01	2.26E+01	1.00E+01	1.31E+01	1.10E+01	pCi/L
Am-241	12/19/05	U	-1.38E+01	1.59E+01	2.32E+01	1.00E+01	1.56E+01	1.12E+01	pCi/L

Note(s):

1. Calculated MDAs are a-posteriori values.
2. Activity concentration net +/- 2 sigma overall on reference date.
3. Results are statistically positive at the 99.9% confidence level (activity is greater than three times the one sigma uncertainty)

- **U** Target analyte was analyzed for but not detected above the MDL or LOD.
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10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID:	**151732003**	**Client:**	**Rancho Seco Nuclear Generating Station**
Client Sample ID:	**#3 MW3A**	**Collect Date:**	**December 05, 2005**
Matrix:	**Ground Water**	**Receive Date:**	**December 12, 2005**
Amount of Sample Received:		**Report Date:**	**December 31, 2005**

Analyte	Run Date	Qualifier	Activity[2]	Uncertainty	MDA[1]	RL	TPU	Critical Level	Units
ALPHA	12/23/05	U	-3.14E-01	3.74E-01	1.25E+00	5.00E+00	3.74E-01	4.89E-01	pCi/L
BETA	12/23/05	U	2.18E+00	2.19E+00	4.38E+00	5.00E+00	2.19E+00	2.10E+00	pCi/L
H-3	12/14/05	U	5.03E+01	2.12E+02	3.65E+02	7.00E+02	2.12E+02	1.76E+02	pCi/L
C-14	12/14/05	U	7.00E+00	1.57E+01	2.67E+01	5.00E+01	1.57E+01	1.30E+01	pCi/L
Fe-55	12/15/05	U	-1.19E+01	3.88E+01	5.89E+01	1.00E+02	3.88E+01	2.90E+01	pCi/L
Ni-63	12/15/05	3	2.76E+01	1.62E+01	2.64E+01	5.00E+01	1.62E+01	1.28E+01	pCi/L
Tc-99	12/19/05	U	5.45E-01	1.23E+01	2.10E+01	5.00E+01	1.23E+01	1.03E+01	pCi/L
Pm-147	12/21/05	U	6.44E+00	4.71E+00	7.82E+00	1.00E+01	4.72E+00	3.84E+00	pCi/L
Pu-241	12/16/05	U	-2.02E+00	5.63E+00	9.75E+00	1.50E+01	5.64E+00	4.77E+00	pCi/L
Total Strontium	12/14/05	U	-2.79E-01	3.81E-01	9.55E-01	2.00E+00	3.81E-01	4.43E-01	pCi/L
Alpha Spec									
Np-237	12/15/05	U	-1.08E-01	9.48E-02	7.03E-01	1.00E+00	9.54E-02	2.30E-01	pCi/L
Pu-238	12/15/05	U	-1.33E-01	2.43E-01	8.56E-01	1.00E+00	2.43E-01	3.30E-01	pCi/L
Pu-239/240	12/15/05	U	-8.40E-02	1.75E-01	6.91E-01	1.00E+00	1.75E-01	2.47E-01	pCi/L
Pu-244	12/15/05	U	5.50E-02	1.46E-01	3.61E-01	1.00E+00	1.46E-01	8.25E-02	pCi/L
Am-241	12/15/05	U	6.33E-02	1.40E-01	3.10E-01	1.00E+00	1.40E-01	7.08E-02	pCi/L
Cm-243/244	12/15/05	U	4.72E-02	1.25E-01	3.10E-01	1.00E+00	1.25E-01	7.08E-02	pCi/L
Gamma Spec									
Be-7	12/19/05	U	2.78E+00	1.90E+01	3.32E+01	1.00E+01	1.86E+01	1.57E+01	pCi/L
Na-22	12/19/05	U	7.56E-01	1.84E+00	3.49E+00	1.00E+01	1.80E+00	1.58E+00	pCi/L
K-40	12/19/05	U	1.11E+01	2.92E+01	2.90E+01	1.00E+01	2.87E+01	1.29E+01	pCi/L
Cr-51	12/19/05	U	-1.17E+00	2.23E+01	3.87E+01	1.00E+01	2.18E+01	1.85E+01	pCi/L
Mn-54	12/19/05	U	2.41E+00	1.93E+00	3.77E+00	1.00E+01	1.89E+00	1.77E+00	pCi/L
Fe-59	12/19/05	U	4.17E-02	4.52E+00	8.08E+00	1.00E+01	4.43E+00	3.73E+00	pCi/L
Co-56	12/19/05	U	-3.13E-01	1.91E+00	3.41E+00	1.00E+01	1.88E+00	1.57E+00	pCi/L
Co-57	12/19/05	U	8.00E-01	1.93E+00	2.91E+00	1.00E+01	1.89E+00	1.41E+00	pCi/L
Co-58	12/19/05	U	1.54E+00	2.15E+00	4.06E+00	1.00E+01	2.11E+00	1.90E+00	pCi/L
Co-60	12/19/05	U	1.32E+00	2.29E+00	3.35E+00	1.00E+01	2.25E+00	1.51E+00	pCi/L
Ni-59	12/30/05	U	2.67E+00	1.07E+01	1.56E+01	2.00E+01	1.04E+01	7.34E+00	pCi/L
Zn-65	12/19/05	U	-6.19E+00	4.57E+00	7.02E+00	1.00E+01	4.48E+00	3.21E+00	pCi/L
Y-88	12/19/05	U	-7.51E-02	1.95E+00	3.65E+00	1.00E+01	1.91E+00	1.60E+00	pCi/L
Zr-95	12/19/05	U	-2.56E+00	4.02E+00	5.76E+00	1.00E+01	3.94E+00	2.66E+00	pCi/L
Nb-94	12/19/05	U	-1.22E+00	1.86E+00	3.02E+00	1.00E+01	1.82E+00	1.41E+00	pCi/L
Nb-95	12/19/05	U	1.18E+00	2.39E+00	4.44E+00	1.00E+01	2.34E+00	2.08E+00	pCi/L
Ru-106	12/19/05	U	1.01E+01	1.70E+01	3.08E+01	1.00E+01	1.67E+01	1.45E+01	pCi/L
Ag-110m	12/19/05	U	-1.86E+00	2.14E+00	3.42E+00	1.00E+01	2.10E+00	1.61E+00	pCi/L
Sn-113	12/19/05	U	1.80E+00	2.55E+00	4.62E+00	1.00E+01	2.50E+00	2.20E+00	pCi/L

Note(s): **1. Calculated MDAs are a-posteriori values.**
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10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID:	**151732003**	**Client:**	**Rancho Seco Nuclear Generating Station**
Client Sample ID:	**#3 MW3A**	**Collect Date:**	**December 05, 2005**
Matrix:	**Ground Water**	**Receive Date:**	**December 12, 2005**
Amount of Sample Received:		**Report Date:**	**December 31, 2005**

Analyte	Run Date	Qualifier	Activity[2]	Uncertainty	MDA[1]	RL	TPU	Critical Level	Units
Sb-124	12/19/05	U	-1.85E+00	4.85E+00	8.59E+00	1.00E+01	4.75E+00	3.82E+00	pCi/L
Sb-125	12/19/05	U	-2.58E+00	5.51E+00	9.30E+00	1.00E+01	5.40E+00	4.41E+00	pCi/L
Cs-134	12/19/05	U	7.61E-02	2.03E+00	3.67E+00	1.00E+01	1.99E+00	1.70E+00	pCi/L
Cs-136	12/19/05	U	-3.79E-01	4.54E+00	8.16E+00	1.00E+01	4.45E+00	3.71E+00	pCi/L
Cs-137	12/19/05	U	1.10E+00	2.25E+00	3.99E+00	1.00E+01	2.20E+00	1.88E+00	pCi/L
Ba-133	12/19/05	U	1.21E+00	2.88E+00	4.51E+00	1.00E+01	2.82E+00	2.15E+00	pCi/L
Ba-140	12/19/05	U	5.81E+00	1.41E+01	2.50E+01	1.00E+01	1.39E+01	1.18E+01	pCi/L
Ce-139	12/19/05	U	-1.16E-01	1.95E+00	3.26E+00	1.00E+01	1.91E+00	1.58E+00	pCi/L
Ce-141	12/19/05	U	1.50E+00	4.31E+00	6.79E+00	1.00E+01	4.22E+00	3.29E+00	pCi/L
Ce-144	12/19/05	U	8.16E+00	1.57E+01	2.37E+01	1.00E+01	1.54E+01	1.15E+01	pCi/L
Nd-147	12/19/05	U	9.92E+00	3.03E+01	5.39E+01	1.00E+01	2.97E+01	2.54E+01	pCi/L
Pm-144	12/19/05	U	8.05E-01	1.81E+00	3.23E+00	1.00E+01	1.77E+00	1.52E+00	pCi/L
Pm-146	12/19/05	U	-3.64E-01	2.52E+00	4.34E+00	1.00E+01	2.47E+00	2.05E+00	pCi/L
Eu-152	12/19/05	U	-7.22E-01	5.94E+00	1.03E+01	1.00E+01	5.82E+00	4.92E+00	pCi/L
Eu-154	12/19/05	U	2.06E+00	5.14E+00	9.72E+00	1.00E+01	5.03E+00	4.41E+00	pCi/L
Eu-155	12/19/05	U	2.24E-01	8.12E+00	1.21E+01	1.00E+01	7.96E+00	5.84E+00	pCi/L
Ir-192	12/19/05	U	-1.04E-01	2.12E+00	3.70E+00	1.00E+01	2.08E+00	1.77E+00	pCi/L
Hg-203	12/19/05	U	8.70E-01	2.41E+00	4.28E+00	1.00E+01	2.36E+00	2.06E+00	pCi/L
Tl-208	12/19/05	U	3.10E+00	2.26E+00	4.22E+00	1.00E+01	2.22E+00	2.00E+00	pCi/L
Pb-210	12/19/05	U	2.61E+02	4.18E+02	6.52E+02	1.00E+01	4.09E+02	3.16E+02	pCi/L
Pb-212	12/19/05	U	3.96E+00	4.04E+00	6.92E+00	1.00E+01	3.96E+00	3.35E+00	pCi/L
Pb-214	12/19/05	UUI	0.00E+00	8.05E+00	9.68E+00	1.00E+01	7.89E+00	4.68E+00	pCi/L
Bi-212	12/19/05	UUI	0.00E+00	5.17E+01	2.38E+01	1.00E+01	5.07E+01	1.10E+01	pCi/L
Bi-214	12/19/05	UUI	0.00E+00	8.41E+00	9.97E+00	1.00E+01	8.24E+00	4.79E+00	pCi/L
Ra-228	12/19/05	U	5.42E+00	1.48E+01	1.34E+01	1.00E+01	1.45E+01	6.25E+00	pCi/L
Ac-228	12/19/05	U	5.42E+00	1.48E+01	1.34E+01	1.00E+01	1.45E+01	6.25E+00	pCi/L
Th-230	12/19/05	3	1.76E+01	8.41E+00	6.54E+00	1.00E+01	8.24E+00	3.08E+00	pCi/L
Th-234	12/19/05	U	-7.78E+01	1.22E+02	1.75E+02	1.00E+01	1.19E+02	8.52E+01	pCi/L
U-235	12/19/05	U	8.68E+00	1.52E+01	2.29E+01	1.00E+01	1.49E+01	1.11E+01	pCi/L
U-238	12/19/05	U	-7.78E+01	1.22E+02	1.75E+02	1.00E+01	1.19E+02	8.52E+01	pCi/L
Np-239	12/19/05	U	6.77E+00	1.48E+01	2.24E+01	1.00E+01	1.45E+01	1.09E+01	pCi/L
Am-241	12/19/05	U	-1.04E+01	1.49E+01	2.15E+01	1.00E+01	1.46E+01	1.05E+01	pCi/L

Note(s): **1. Calculated MDAs are a-posteriori values.**
2. Activity concentration net +/- 2 sigma overall on reference date.
3. Results are statistically positive at the 99.9% confidence level (activity is greater than three times the one sigma uncertainty)

U **Target analyte was analyzed for but not detected above the MDL or LOD.**
UI **Uncertain identification for gamma spectroscopy.**
X **Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.**

GENERAL ENGINEERING LABORATORIES, LLC

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

10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 151732004
Client Sample ID: #4 MW4A
Matrix: Ground Water
Amount of Sample Received:

Client: Rancho Seco Nuclear Generating Station
Collect Date: December 06, 2005
Receive Date: December 12, 2005
Report Date: December 31, 2005

Analyte	Run Date	Qualifier	Activity[2]	Uncertainty	MDA[1]	RL	TPU	Critical Level	Units
ALPHA	12/23/05	U	1.21E+00	1.80E+00	3.61E+00	5.00E+00	1.80E+00	1.65E+00	pCi/L
BETA	12/23/05	U	1.53E+00	2.13E+00	4.30E+00	5.00E+00	2.13E+00	2.06E+00	pCi/L
H-3	12/15/05	U	-2.70E+01	2.07E+02	3.62E+02	7.00E+02	2.07E+02	1.75E+02	pCi/L
C-14	12/14/05	U	1.25E+01	1.59E+01	2.67E+01	5.00E+01	1.59E+01	1.30E+01	pCi/L
Fe-55	12/16/05	U	2.07E-01	3.37E+01	5.07E+01	1.00E+02	3.37E+01	2.49E+01	pCi/L
Ni-63	12/15/05	U	5.74E+00	1.56E+01	2.67E+01	5.00E+01	1.56E+01	1.30E+01	pCi/L
Tc-99	12/19/05	U	-3.57E+00	1.30E+01	2.23E+01	5.00E+01	1.30E+01	1.10E+01	pCi/L
Pm-147	12/22/05	U	3.20E+00	4.65E+00	7.83E+00	1.00E+01	4.65E+00	3.85E+00	pCi/L
Pu-241	12/16/05	U	-3.20E+00	6.15E+00	1.07E+01	1.50E+01	6.16E+00	5.23E+00	pCi/L
Total Strontium	12/14/05	U	-1.51E-01	4.01E-01	9.64E-01	2.00E+00	4.01E-01	4.47E-01	pCi/L
Alpha Spec									
Np-237	12/15/05	U	-1.01E-01	7.50E-02	5.27E-01	1.00E+00	7.56E-02	1.82E-01	pCi/L
Pu-238	12/15/05	U	-2.20E-01	2.46E-01	1.05E+00	1.00E+00	2.47E-01	3.98E-01	pCi/L
Pu-239/240	12/15/05	U	-6.72E-02	1.98E-01	6.21E-01	1.00E+00	1.98E-01	1.84E-01	pCi/L
Pu-244	12/15/05	3,X	1.07E+00	6.36E-01	5.53E-01	1.00E+00	6.48E-01	1.50E-01	pCi/L
Am-241	12/15/05	U	-4.60E-02	3.13E-01	4.32E-01	1.00E+00	3.14E-01	0.00E+00	pCi/L
Cm-243/244	12/15/05	U	0.00E+00	3.13E-01	4.32E-01	1.00E+00	3.13E-01	0.00E+00	pCi/L
Gamma Spec									
Be-7	12/20/05	U	-9.69E+00	2.06E+01	3.37E+01	1.00E+01	2.02E+01	1.57E+01	pCi/L
Na-22	12/20/05	U	-2.26E-01	2.08E+00	3.82E+00	1.00E+01	2.04E+00	1.70E+00	pCi/L
K-40	12/20/05	U	2.97E+01	2.56E+01	5.20E+01	1.00E+01	2.51E+01	2.39E+01	pCi/L
Cr-51	12/20/05	U	1.77E+01	4.01E+01	4.56E+01	1.00E+01	3.93E+01	2.17E+01	pCi/L
Mn-54	12/20/05	U	-3.57E-01	1.87E+00	3.28E+00	1.00E+01	1.83E+00	1.49E+00	pCi/L
Fe-59	12/20/05	U	-1.34E+00	4.66E+00	7.16E+00	1.00E+01	4.57E+00	3.17E+00	pCi/L
Co-56	12/20/05	U	-4.89E-01	2.19E+00	3.81E+00	1.00E+01	2.14E+00	1.74E+00	pCi/L
Co-57	12/20/05	U	-3.93E-01	2.07E+00	3.61E+00	1.00E+01	2.03E+00	1.74E+00	pCi/L
Co-58	12/20/05	U	-7.12E-01	1.99E+00	3.43E+00	1.00E+01	1.95E+00	1.55E+00	pCi/L
Co-60	12/20/05	U	-1.30E+00	1.99E+00	3.38E+00	1.00E+01	1.95E+00	1.48E+00	pCi/L
Ni-59	12/30/05	U	8.76E+00	1.01E+01	1.56E+01	2.00E+01	9.93E+00	7.41E+00	pCi/L
Zn-65	12/20/05	U	4.93E+00	4.32E+00	8.35E+00	1.00E+01	4.23E+00	3.79E+00	pCi/L
Y-88	12/20/05	U	-8.22E-01	2.58E+00	4.49E+00	1.00E+01	2.53E+00	1.97E+00	pCi/L
Zr-95	12/20/05	U	-2.74E+00	3.83E+00	6.35E+00	1.00E+01	3.75E+00	2.88E+00	pCi/L
Nb-94	12/20/05	U	-5.10E-01	1.97E+00	3.44E+00	1.00E+01	1.93E+00	1.59E+00	pCi/L
Nb-95	12/20/05	U	-9.82E-01	2.66E+00	4.56E+00	1.00E+01	2.60E+00	2.10E+00	pCi/L
Ru-106	12/20/05	U	6.36E+00	1.88E+01	3.48E+01	1.00E+01	1.85E+01	1.62E+01	pCi/L
Ag-110m	12/20/05	U	9.81E-01	2.08E+00	3.88E+00	1.00E+01	2.04E+00	1.80E+00	pCi/L
Sn-113	12/20/05	U	-2.40E+00	3.03E+00	4.87E+00	1.00E+01	2.97E+00	2.28E+00	pCi/L

Note(s):
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GENERAL ENGINEERING LABORATORIES, LLC

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

10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID:	**151732004**	**Client:**	**Rancho Seco Nuclear Generating Station**
Client Sample ID:	**#4 MW4A**	**Collect Date:**	**December 06, 2005**
Matrix:	**Ground Water**	**Receive Date:**	**December 12, 2005**
Amount of Sample Received:		**Report Date:**	**December 31, 2005**

Analyte	Run Date	Qualifier	Activity[2]	Uncertainty	MDA[1]	RL	TPU	Critical Level	Units
Sb-124	12/20/05	U	3.25E-01	5.39E+00	1.00E+01	1.00E+01	5.28E+00	4.43E+00	pCi/L
Sb-125	12/20/05	U	-2.19E+00	6.33E+00	1.05E+01	1.00E+01	6.20E+00	4.94E+00	pCi/L
Cs-134	12/20/05	U	-6.57E-01	2.23E+00	3.87E+00	1.00E+01	2.19E+00	1.76E+00	pCi/L
Cs-136	12/20/05	U	1.83E+00	4.90E+00	9.24E+00	1.00E+01	4.80E+00	4.16E+00	pCi/L
Cs-137	12/20/05	U	-1.69E+00	2.47E+00	3.48E+00	1.00E+01	2.42E+00	1.60E+00	pCi/L
Ba-133	12/20/05	U	3.61E+00	3.14E+00	5.29E+00	1.00E+01	3.08E+00	2.51E+00	pCi/L
Ba-140	12/20/05	U	6.49E+00	1.71E+01	2.79E+01	1.00E+01	1.67E+01	1.30E+01	pCi/L
Ce-139	12/20/05	U	-3.90E-01	2.23E+00	3.87E+00	1.00E+01	2.18E+00	1.86E+00	pCi/L
Ce-141	12/20/05	U	1.86E+00	4.70E+00	8.38E+00	1.00E+01	4.61E+00	4.04E+00	pCi/L
Ce-144	12/20/05	U	-6.07E-02	1.57E+01	2.77E+01	1.00E+01	1.54E+01	1.33E+01	pCi/L
Nd-147	12/20/05	U	2.08E+01	3.57E+01	5.98E+01	1.00E+01	3.49E+01	2.79E+01	pCi/L
Pm-144	12/20/05	U	-5.03E-01	1.87E+00	3.26E+00	1.00E+01	1.83E+00	1.50E+00	pCi/L
Pm-146	12/20/05	U	-1.02E+00	3.46E+00	4.97E+00	1.00E+01	3.39E+00	2.33E+00	pCi/L
Eu-152	12/20/05	U	-5.91E-01	7.19E+00	1.23E+01	1.00E+01	7.04E+00	5.81E+00	pCi/L
Eu-154	12/20/05	U	-6.31E-01	5.81E+00	1.07E+01	1.00E+01	5.70E+00	4.75E+00	pCi/L
Eu-155	12/20/05	U	1.34E+00	8.18E+00	1.37E+01	1.00E+01	8.01E+00	6.55E+00	pCi/L
Ir-192	12/20/05	U	1.69E+00	3.82E+00	4.36E+00	1.00E+01	3.75E+00	2.07E+00	pCi/L
Hg-203	12/20/05	U	2.50E+00	2.91E+00	5.26E+00	1.00E+01	2.85E+00	2.51E+00	pCi/L
Tl-208	12/20/05	U	1.73E+00	2.26E+00	4.29E+00	1.00E+01	2.21E+00	2.01E+00	pCi/L
Pb-210	12/20/05	U	-3.84E+01	4.92E+02	7.41E+02	1.00E+01	4.82E+02	3.56E+02	pCi/L
Pb-212	12/20/05	U	4.07E+00	6.35E+00	8.07E+00	1.00E+01	6.22E+00	3.88E+00	pCi/L
Pb-214	12/20/05	3	2.03E+01	9.05E+00	9.31E+00	1.00E+01	8.87E+00	4.43E+00	pCi/L
Bi-212	12/20/05	U	8.61E+00	3.71E+01	2.50E+01	1.00E+01	3.64E+01	1.14E+01	pCi/L
Bi-214	12/20/05	3	1.61E+01	7.58E+00	8.04E+00	1.00E+01	7.43E+00	3.76E+00	pCi/L
Ra-228	12/20/05	U	2.79E+00	1.43E+01	1.56E+01	1.00E+01	1.40E+01	7.20E+00	pCi/L
Ac-228	12/20/05	U	2.79E+00	1.43E+01	1.56E+01	1.00E+01	1.40E+01	7.20E+00	pCi/L
Th-230	12/20/05	3	1.61E+01	7.58E+00	8.04E+00	1.00E+01	7.43E+00	3.76E+00	pCi/L
Th-234	12/20/05	U	6.71E+01	1.78E+02	1.96E+02	1.00E+01	1.74E+02	9.44E+01	pCi/L
U-235	12/20/05	U	1.25E+01	1.85E+01	2.97E+01	1.00E+01	1.82E+01	1.44E+01	pCi/L
U-238	12/20/05	U	6.71E+01	1.78E+02	1.96E+02	1.00E+01	1.74E+02	9.44E+01	pCi/L
Np-239	12/20/05	U	-1.11E+01	1.56E+01	2.48E+01	1.00E+01	1.53E+01	1.19E+01	pCi/L
Am-241	12/20/05	U	7.88E+00	2.04E+01	2.50E+01	1.00E+01	2.00E+01	1.20E+01	pCi/L

Note(s):

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3. Results are statistically positive at the 99.9% confidence level (activity is greater than three times the one sigma uncertainty)

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X Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.

QUALITY CONTROL DATA

QC Summary

Report Date: December 31, 2005
Page 1 of 20

Client : Rancho Seco Nuclear Generating Station
14440 Twin Cities Road

Herald, California

Contact: Mr. John Newey

Workorder: 151732

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Alpha Spec										
Batch 487212										
QC1200994821 151732001 DUP										
Americium-241	U	0.202	U	-0.0245	pCi/L	N/A		(0% - 100%)	DDR1	12/15/05 16:40
	Uncert:	+/-0.237		+/-0.114						
	TPU:	+/-0.238		+/-0.114						
Curium-243/244	U	-0.0474	U	-0.0736	pCi/L	N/A		(0% - 100%)		
	Uncert:	+/-0.140		+/-0.167						
	TPU:	+/-0.140		+/-0.167						
QC1200994823 LCS										
Americium-241	27.2			26.3	pCi/L		97	(75%-125%)		12/15/05 16:40
	Uncert:			+/-2.60						
	TPU:			+/-4.22						
Curium-243/244	33.0			30.3	pCi/L		92			
	Uncert:			+/-2.79						
	TPU:			+/-4.74						
QC1200994820 MB										
Americium-241			U	0.0263	pCi/L					12/15/05 16:40
	Uncert:			+/-0.129						
	TPU:			+/-0.129						
Curium-243/244			U	0.00	pCi/L					
	Uncert:			+/-0.111						
	TPU:			+/-0.111						
QC1200994822 151732001 MS										
Americium-241	54.5 U	0.202		48.7	pCi/L		87	(75%-125%)		12/16/05 16:39
	Uncert:	+/-0.237		+/-4.64						
	TPU:	+/-0.238		+/-7.51						
Curium-243/244	66.2 U	-0.0474		67.2	pCi/L		98			
	Uncert:	+/-0.140		+/-5.45						
	TPU:	+/-0.140		+/-9.80						
Batch 487213										
QC1200994825 151732002 DUP										
Neptunium-237	U	0.0802	U	-0.0939	pCi/L	N/A		(0% - 100%)	DDR1	12/15/05 08:05
	Uncert:	+/-0.157		+/-0.0752						
	TPU:	+/-0.157		+/-0.0757						
QC1200994827 LCS										
Neptunium-237	37.3			42.7	pCi/L		115	(75%-125%)		12/15/05 08:04
	Uncert:			+/-3.35						
	TPU:			+/-5.21						
QC1200994824 MB										
Neptunium-237			U	-0.0305	pCi/L					12/15/05 08:05
	Uncert:			+/-0.0423						
	TPU:			+/-0.0424						
QC1200994826 151732002 MS										
Neptunium-237	74.5 U	0.0802		86.9	pCi/L		117	(75%-125%)		12/15/05 08:04

QC Summary

Workorder: 151732

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Alpha Spec										
Batch 487213										
	Uncert:	+/-0.157		+/-6.66						
	TPU:	+/-0.157		+/-10.5						
Batch 487214										
QC1200994829 151732001 DUP										
Plutonium-238	U	0.00	U	0.0724	pCi/L	0		(0% - 100%)	DDR1	12/15/05 08:04
	Uncert:	+/-0.162		+/-0.298						
	TPU:	+/-0.162		+/-0.298						
Plutonium-239/240	U	-0.0596	U	-0.102	pCi/L	N/A		(0% - 100%)		
	Uncert:	+/-0.0674		+/-0.156						
	TPU:	+/-0.0677		+/-0.157						
Plutonium-244	U	0.165	U	0.0798	pCi/L	70		(0% - 100%)		
	Uncert:	+/-0.229		+/-0.180						
	TPU:	+/-0.230		+/-0.180						
QC1200994831 LCS										
Plutonium-238			U	0.418	pCi/L			(75%-125%)		12/15/05 08:04
	Uncert:			+/-0.410						
	TPU:			+/-0.413						
Plutonium-239/240	25.2			23.5	pCi/L		93	(75%-125%)		
	Uncert:			+/-2.90						
	TPU:			+/-3.91						
Plutonium-244				0.370	pCi/L			(75%-125%)		
	Uncert:			+/-0.362						
	TPU:			+/-0.365						
QC1200994828 MB										
Plutonium-238			U	-0.121	pCi/L					12/15/05 08:04
	Uncert:			+/-0.0898						
	TPU:			+/-0.0907						
Plutonium-239/240			U	0.00289	pCi/L					
	Uncert:			+/-0.157						
	TPU:			+/-0.157						
Plutonium-244			U	0.0722	pCi/L					
	Uncert:			+/-0.141						
	TPU:			+/-0.142						
QC1200994830 151732001 MS										
Plutonium-238	U	0.00	U	-0.152	pCi/L			(75%-125%)		12/15/05 08:04
	Uncert:	+/-0.162		+/-0.550						
	TPU:	+/-0.162		+/-0.550						
Plutonium-239/240	50.3 U	-0.0596		51.2	pCi/L		102	(75%-125%)		
	Uncert:	+/-0.0674		+/-5.27						
	TPU:	+/-0.0677		+/-7.39						
Plutonium-244	U	0.165	U	0.636	pCi/L			(75%-125%)		
	Uncert:	+/-0.229		+/-0.623						
	TPU:	+/-0.230		+/-0.627						
Batch 487216										
QC1200994834 151732003 DUP										
Plutonium-241	U	-2.02	U	-1.91	pCi/L	N/A		(0% - 100%)	DDR1	12/16/05 18:46
	Uncert:	+/-5.63		+/-6.31						
	TPU:	+/-5.64		+/-6.31						

QC Summary

Workorder: 151732

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Alpha Spec										
Batch 487216										
QC1200994836 LCS										
Plutonium-241	181			175	pCi/L		97	(75%-125%)		12/16/05 20:05
	Uncert:			+/-17.1						
	TPU:			+/-24.3						
QC1200994833 MB										
Plutonium-241			U	-1.32	pCi/L					12/16/05 17:43
	Uncert:			+/-6.13						
	TPU:			+/-6.13						
QC1200994835 151732003 MS										
Plutonium-241	725 U	-2.02		641	pCi/L		88	(75%-125%)		12/16/05 19:48
	Uncert:	+/-5.63		+/-64.8						
	TPU:	+/-5.64		+/-89.1						
Batch 490003										
QC1201001148 151732002 DUP										
Plutonium-241	U	21.3	U	55.8	pCi/L	0*		(0% - 100%)	DDR1	12/28/05 21:59
	Uncert:	+/-34.3		+/-38.2						
	TPU:	+/-34.4		+/-38.6						
QC1201001150 LCS										
Plutonium-241	1810			1710	pCi/L		94	(75%-125%)		12/29/05 02:07
	Uncert:			+/-56.9						
	TPU:			+/-174						
QC1201001147 MB										
Plutonium-241			U	13.9	pCi/L					12/28/05 19:54
	Uncert:			+/-36.9						
	TPU:			+/-36.9						
QC1201001149 151732002 MS										
Plutonium-241	1810 U	21.3		1690	pCi/L		93	(75%-125%)		12/29/05 00:03
	Uncert:	+/-34.3		+/-82.9						
	TPU:	+/-34.4		+/-214						
Rad Gamma Spec										
Batch 488129										
QC1200996968 151732001 DUP										
Actinium-228	U	-0.373	U	3.36	pCi/L	N/A		(0% - 100%)	MJH1	12/20/05 18:26
	Uncert:	+/-6.17		+/-9.43						
	TPU:	+/-6.05		+/-9.24						
Americium-241	U	-5.11	U	-0.209	pCi/L	N/A		(0% - 100%)		
	Uncert:	+/-11.6		+/-16.3						
	TPU:	+/-11.3		+/-16.0						
Antimony-124	U	-1.85	U	-1.88	pCi/L	N/A		(0% - 100%)		
	Uncert:	+/-3.98		+/-3.01						
	TPU:	+/-3.90		+/-2.95						
Antimony-125	U	2.44	U	0.160	pCi/L	127		(0% - 100%)		
	Uncert:	+/-5.31		+/-3.75						
	TPU:	+/-5.20		+/-3.67						
Barium-133	U	0.506	U	1.30	pCi/L	162		(0% - 100%)		
	Uncert:	+/-2.60		+/-2.09						
	TPU:	+/-2.55		+/-2.05						
Barium-140	U	10.7	U	-4.75	pCi/L	N/A		(0% - 100%)		

QC Summary

Workorder: 151732

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch 488129											
	Uncert:	+/-20.1		+/-10.2							
	TPU:	+/-19.7		+/-10.0							
Beryllium-7	U	-0.628	U	-9.6	pCi/L	N/A		(0% - 100%)			
	Uncert:	+/-18.8		+/-13.1							
	TPU:	+/-18.5		+/-12.8							
Bismuth-212	U	5.49	U	3.50	pCi/L	82		(0% - 100%)			
	Uncert:	+/-13.2		+/-14.4							
	TPU:	+/-12.9		+/-14.1							
Bismuth-214	U	4.62	U	3.05	pCi/L	147		(0% - 100%)			
	Uncert:	+/-8.74		+/-5.18							
	TPU:	+/-8.56		+/-5.08							
Cerium-139	U	-0.491	U	-1.03	pCi/L	N/A		(0% - 100%)			
	Uncert:	+/-1.86		+/-1.46							
	TPU:	+/-1.82		+/-1.43							
Cerium-141	U	2.85	U	-0.205	pCi/L	N/A		(0% - 100%)			
	Uncert:	+/-6.81		+/-3.17							
	TPU:	+/-6.67		+/-3.11							
Cerium-144	U	-6.92	U	0.212	pCi/L	N/A		(0% - 100%)			
	Uncert:	+/-12.5		+/-10.5							
	TPU:	+/-12.2		+/-10.3							
Cesium-134	U	0.624	U	0.878	pCi/L	35		(0% - 100%)			
	Uncert:	+/-1.82		+/-1.43							
	TPU:	+/-1.78		+/-1.40							
Cesium-136	U	5.23	U	-1.1	pCi/L	N/A		(0% - 100%)			
	Uncert:	+/-6.86		+/-4.22							
	TPU:	+/-6.72		+/-4.13							
Cesium-137	U	0.308	U	-0.602	pCi/L	N/A		(0% - 100%)			
	Uncert:	+/-2.38		+/-1.22							
	TPU:	+/-2.33		+/-1.19							
Chromium-51	U	-2.41	U	-15.9	pCi/L	N/A		(0% - 100%)			
	Uncert:	+/-25.0		+/-16.0							
	TPU:	+/-24.5		+/-15.7							
Cobalt-56	U	0.213	U	0.750	pCi/L	232		(0% - 100%)			
	Uncert:	+/-1.88		+/-1.36							
	TPU:	+/-1.84		+/-1.33							
Cobalt-57	U	0.797	U	0.718	pCi/L	846		(0% - 100%)			
	Uncert:	+/-1.66		+/-1.34							
	TPU:	+/-1.63		+/-1.31							
Cobalt-58	U	-1.79	U	-0.526	pCi/L	N/A		(0% - 100%)			
	Uncert:	+/-1.94		+/-1.34							
	TPU:	+/-1.90		+/-1.31							
Cobalt-60	U	-0.102	U	0.322	pCi/L	N/A		(0% - 100%)			
	Uncert:	+/-1.84		+/-1.51							
	TPU:	+/-1.80		+/-1.48							
Europium-152	U	4.63	U	-2.21	pCi/L	N/A		(0% - 100%)			
	Uncert:	+/-6.19		+/-4.08							
	TPU:	+/-6.06		+/-4.00							
Europium-154	U	-3.39	U	-1.44	pCi/L	N/A		(0% - 100%)			

QC Summary

Workorder: 151732

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch 488129											
	Uncert:	+/-5.16		+/-4.05							
	TPU:	+/-5.05		+/-3.97							
Europium-155	U	0.139	U	2.75	pCi/L	1660		(0% - 100%)			
	Uncert:	+/-6.87		+/-5.69							
	TPU:	+/-6.73		+/-5.58							
Iridium-192	U	-1.13	U	0.963	pCi/L	N/A		(0% - 100%)			
	Uncert:	+/-2.03		+/-1.49							
	TPU:	+/-1.99		+/-1.46							
Iron-59	U	1.72	U	0.443	pCi/L	108		(0% - 100%)			
	Uncert:	+/-4.28		+/-3.07							
	TPU:	+/-4.20		+/-3.01							
Lead-210	U	-19.8	U	315	pCi/L	N/A					
	Uncert:	+/-387		+/-416							
	TPU:	+/-379		+/-407							
Lead-212	U	1.35	U	2.98	pCi/L	71		(0% - 100%)			
	Uncert:	+/-5.89		+/-4.73							
	TPU:	+/-5.77		+/-4.63							
Lead-214	U	4.05	U	1.79	pCi/L	128		(0% - 100%)			
	Uncert:	+/-6.54		+/-5.30							
	TPU:	+/-6.41		+/-5.20							
Manganese-54	U	-1.08	U	0.740	pCi/L	N/A		(0% - 100%)			
	Uncert:	+/-1.57		+/-1.31							
	TPU:	+/-1.53		+/-1.28							
Mercury-203	U	-0.283	U	2.19	pCi/L	N/A		(0% - 100%)			
	Uncert:	+/-2.55		+/-1.79							
	TPU:	+/-2.50		+/-1.76							
Neodymium-147	U	16.3	U	0.741	pCi/L	169*		(0% - 100%)			
	Uncert:	+/-46.2		+/-22.5							
	TPU:	+/-45.3		+/-22.1							
Neptunium-239	U	0.211	U	4.99	pCi/L	153		(0% - 100%)			
	Uncert:	+/-12.7		+/-9.79							
	TPU:	+/-12.4		+/-9.60							
Niobium-94	U	0.619	U	-1.18	pCi/L	N/A		(0% - 100%)			
	Uncert:	+/-1.67		+/-1.42							
	TPU:	+/-1.64		+/-1.39							
Niobium-95	U	0.780	U	0.919	pCi/L	533		(0% - 100%)			
	Uncert:	+/-2.43		+/-1.81							
	TPU:	+/-2.38		+/-1.77							
Potassium-40		32.7		43.5	pCi/L	182*		(0% - 100%)			
	Uncert:	+/-27.5		+/-20.2							
	TPU:	+/-27.0		+/-19.8							
Promethium-144	U	-0.00511	U	2.23	pCi/L	N/A		(0% - 100%)			
	Uncert:	+/-1.70		+/-1.95							
	TPU:	+/-1.67		+/-1.91							
Promethium-146	U	2.65	U	0.0729	pCi/L	262		(0% - 100%)			
	Uncert:	+/-2.38		+/-1.72							
	TPU:	+/-2.33		+/-1.69							
Radium-228	U	-0.373	U	3.36	pCi/L	N/A		(0% - 100%)			

QC Summary

Workorder: 151732

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Gamma Spec										
Batch 488129										
	Uncert:	+/-6.17		+/-9.43						
	TPU:	+/-6.05		+/-9.24						
Ruthenium-106	U	11.5	U	-8.42	pCi/L	N/A		(0% - 100%)		
	Uncert:	+/-16.4		+/-11.4						
	TPU:	+/-16.0		+/-11.2						
Silver-110m	U	-0.234	U	0.379	pCi/L	N/A		(0% - 100%)		
	Uncert:	+/-1.61		+/-1.09						
	TPU:	+/-1.58		+/-1.06						
Sodium-22	U	-1.2	U	-0.511	pCi/L	N/A		(0% - 100%)		
	Uncert:	+/-1.86		+/-1.45						
	TPU:	+/-1.82		+/-1.42						
Thallium-208	U	0.945	U	2.00	pCi/L	110		(0% - 100%)		
	Uncert:	+/-2.91		+/-1.44						
	TPU:	+/-2.85		+/-1.41						
Thorium-230	U	4.62	U	3.05	pCi/L	147		(0% - 100%)		
	Uncert:	+/-8.73		+/-5.18						
	TPU:	+/-8.56		+/-5.08						
Thorium-234	U	166	UUI	0.00	pCi/L	210*				
	Uncert:	+/-95.0		+/-107						
	TPU:	+/-93.1		+/-105						
Tin-113	U	-0.927	U	-0.698	pCi/L	N/A		(0% - 100%)		
	Uncert:	+/-2.56		+/-1.86						
	TPU:	+/-2.51		+/-1.82						
Uranium-235	U	8.78	U	-0.125	pCi/L	N/A		(0% - 100%)		
	Uncert:	+/-18.4		+/-10.8						
	TPU:	+/-18.1		+/-10.6						
Uranium-238	U	166	UUI	0.00	pCi/L	210*				
	Uncert:	+/-95.0		+/-107						
	TPU:	+/-93.1		+/-105						
Yttrium-88	U	-0.374	U	0.147	pCi/L	N/A		(0% - 100%)		
	Uncert:	+/-1.65		+/-1.51						
	TPU:	+/-1.61		+/-1.48						
Zinc-65	U	-0.723	U	-6.22	pCi/L	N/A		(0% - 100%)		
	Uncert:	+/-3.71		+/-3.75						
	TPU:	+/-3.64		+/-3.68						
Zirconium-95	U	-0.236	U	0.555	pCi/L	N/A		(0% - 100%)		
	Uncert:	+/-3.75		+/-2.61						
	TPU:	+/-3.67		+/-2.55						
QC1200996970 LCS										
Actinium-228			U	15.7	pCi/L					12/21/05 07:25
	Uncert:			+/-47.7						
	TPU:			+/-46.7						
Americium-241	1220			1270	pCi/L		104	(75%-125%)		
	Uncert:			+/-111						
	TPU:			+/-109						
Antimony-124			U	1.21	pCi/L					
	Uncert:			+/-14.7						
	TPU:			+/-14.4						

QC Summary

Workorder: 151732

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch 488129											
Antimony-125			U	4.35	pCi/L						
	Uncert:			+/-27.1							
	TPU:			+/-26.6							
Barium-133			U	-3.36	pCi/L						
	Uncert:			+/-11.4							
	TPU:			+/-11.2							
Barium-140			U	-1.36	pCi/L						
	Uncert:			+/-47.7							
	TPU:			+/-46.7							
Beryllium-7			U	-87.7	pCi/L						
	Uncert:			+/-90.7							
	TPU:			+/-88.9							
Bismuth-212			U	-18.1	pCi/L						
	Uncert:			+/-86.5							
	TPU:			+/-84.7							
Bismuth-214			U	0.727	pCi/L						
	Uncert:			+/-19.9							
	TPU:			+/-19.5							
Cerium-139				164	pCi/L						
	Uncert:			+/-21.1							
	TPU:			+/-20.6							
Cerium-141			U	9.14	pCi/L						
	Uncert:			+/-14.0							
	TPU:			+/-13.7							
Cerium-144			U	-41.9	pCi/L						
	Uncert:			+/-57.0							
	TPU:			+/-55.9							
Cesium-134			U	11.8	pCi/L						
	Uncert:			+/-12.4							
	TPU:			+/-12.2							
Cesium-136			U	-0.399	pCi/L						
	Uncert:			+/-23.0							
	TPU:			+/-22.6							
Cesium-137	467			486	pCi/L		104	(75%-125%)			
	Uncert:			+/-47.6							
	TPU:			+/-46.7							
Chromium-51			U	-11.1	pCi/L						
	Uncert:			+/-76.7							
	TPU:			+/-75.1							
Cobalt-56			U	3.63	pCi/L						
	Uncert:			+/-11.8							
	TPU:			+/-11.6							
Cobalt-57				215	pCi/L						
	Uncert:			+/-22.7							
	TPU:			+/-22.3							
Cobalt-58			U	-0.964	pCi/L						
	Uncert:			+/-12.8							
	TPU:			+/-12.6							

QC Summary

Workorder: 151732

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch 488129											
Cobalt-60	691			708	pCi/L		103	(75%-125%)			
	Uncert:			+/-66.2							
	TPU:			+/-64.9							
Europium-152			U	7.28	pCi/L						
	Uncert:			+/-26.5							
	TPU:			+/-26.0							
Europium-154			U	-8.05	pCi/L						
	Uncert:			+/-25.6							
	TPU:			+/-25.1							
Europium-155			U	-7.14	pCi/L						
	Uncert:			+/-33.7							
	TPU:			+/-33.0							
Iridium-192			U	1.00	pCi/L						
	Uncert:			+/-8.22							
	TPU:			+/-8.06							
Iron-59			U	9.36	pCi/L						
	Uncert:			+/-29.9							
	TPU:			+/-29.3							
Lead-210			U	-23.8	pCi/L						
	Uncert:			+/-244							
	TPU:			+/-239							
Lead-212			U	8.65	pCi/L						
	Uncert:			+/-22.2							
	TPU:			+/-21.8							
Lead-214			U	0.698	pCi/L						
	Uncert:			+/-18.6							
	TPU:			+/-18.2							
Manganese-54			U	-7.99	pCi/L						
	Uncert:			+/-11.7							
	TPU:			+/-11.5							
Mercury-203				44.9	pCi/L						
	Uncert:			+/-13.1							
	TPU:			+/-12.9							
Neodymium-147			U	-132	pCi/L						
	Uncert:			+/-103							
	TPU:			+/-100							
Neptunium-239			U	-3.93	pCi/L						
	Uncert:			+/-56.4							
	TPU:			+/-55.3							
Niobium-94			U	4.84	pCi/L						
	Uncert:			+/-10.0							
	TPU:			+/-9.82							
Niobium-95			U	-0.316	pCi/L						
	Uncert:			+/-11.8							
	TPU:			+/-11.6							
Potassium-40			U	-11.9	pCi/L						
	Uncert:			+/-81.9							
	TPU:			+/-80.2							

QC Summary

Workorder: 151732

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch 488129											
Promethium-144			U	2.27	pCi/L						
	Uncert:			+/-9.76							
	TPU:			+/-9.57							
Promethium-146			U	-3.19	pCi/L						
	Uncert:			+/-13.2							
	TPU:			+/-12.9							
Radium-228			U	15.7	pCi/L						
	Uncert:			+/-47.7							
	TPU:			+/-46.7							
Ruthenium-106			U	123	pCi/L						
	Uncert:			+/-98.8							
	TPU:			+/-96.9							
Silver-110m			U	-5.37	pCi/L						
	Uncert:			+/-11.7							
	TPU:			+/-11.4							
Sodium-22			U	-2.77	pCi/L						
	Uncert:			+/-9.14							
	TPU:			+/-8.96							
Thallium-208			U	2.84	pCi/L						
	Uncert:			+/-12.1							
	TPU:			+/-11.9							
Thorium-230			U	0.727	pCi/L						
	Uncert:			+/-19.9							
	TPU:			+/-19.5							
Thorium-234			U	185	pCi/L						
	Uncert:			+/-203							
	TPU:			+/-199							
Tin-113				162	pCi/L						
	Uncert:			+/-32.4							
	TPU:			+/-31.7							
Uranium-235			U	-31	pCi/L						
	Uncert:			+/-56.8							
	TPU:			+/-55.6							
Uranium-238			U	185	pCi/L						
	Uncert:			+/-203							
	TPU:			+/-199							
Yttrium-88				325	pCi/L						
	Uncert:			+/-42.8							
	TPU:			+/-41.9							
Zinc-65			U	15.7	pCi/L						
	Uncert:			+/-28.3							
	TPU:			+/-27.7							
Zirconium-95			U	-4.02	pCi/L						
	Uncert:			+/-20.1							
	TPU:			+/-19.7							
QC1200996967 MB											
Actinium-228			U	6.14	pCi/L					12/29/05	13:19
	Uncert:			+/-8.67							

QC Summary

Workorder: 151732

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch 488129											
	TPU:			+/-8.50							
Americium-241			U	1.83	pCi/L						
	Uncert:			+/-16.2							
	TPU:			+/-15.9							
Antimony-124			U	-1.3	pCi/L						
	Uncert:			+/-4.40							
	TPU:			+/-4.31							
Antimony-125			U	-2.94	pCi/L						
	Uncert:			+/-5.70							
	TPU:			+/-5.58							
Barium-133			U	-1.96	pCi/L						
	Uncert:			+/-2.76							
	TPU:			+/-2.71							
Barium-140			U	2.08	pCi/L						
	Uncert:			+/-15.1							
	TPU:			+/-14.8							
Beryllium-7			U	28.4	pCi/L						
	Uncert:			+/-20.2							
	TPU:			+/-19.8							
Bismuth-212			U	10.8	pCi/L						
	Uncert:			+/-16.9							
	TPU:			+/-16.6							
Bismuth-214			U	6.83	pCi/L						
	Uncert:			+/-5.32							
	TPU:			+/-5.21							
Cerium-139			U	-0.279	pCi/L						
	Uncert:			+/-1.75							
	TPU:			+/-1.71							
Cerium-141			U	0.947	pCi/L						
	Uncert:			+/-4.22							
	TPU:			+/-4.13							
Cerium-144			UUI	0.00	pCi/L						
	Uncert:			+/-15.3							
	TPU:			+/-15.0							
Cesium-134			U	0.191	pCi/L						
	Uncert:			+/-2.08							
	TPU:			+/-2.04							
Cesium-136			U	-2.64	pCi/L						
	Uncert:			+/-5.56							
	TPU:			+/-5.44							
Cesium-137			U	1.64	pCi/L						
	Uncert:			+/-2.11							
	TPU:			+/-2.07							
Chromium-51			U	10.7	pCi/L						
	Uncert:			+/-21.8							
	TPU:			+/-21.4							
Cobalt-56			U	2.84	pCi/L						
	Uncert:			+/-3.25							

QC Summary

Workorder: 151732

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch 488129											
	TPU:			+/-3.19							
Cobalt-57			U	0.813	pCi/L						
	Uncert:			+/-2.05							
	TPU:			+/-2.00							
Cobalt-58			U	0.302	pCi/L						
	Uncert:			+/-2.03							
	TPU:			+/-1.99							
Cobalt-60			U	2.73	pCi/L						
	Uncert:			+/-2.37							
	TPU:			+/-2.33							
Europium-152			U	6.90	pCi/L						
	Uncert:			+/-5.83							
	TPU:			+/-5.71							
Europium-154			U	-0.415	pCi/L						
	Uncert:			+/-5.30							
	TPU:			+/-5.19							
Europium-155			U	1.88	pCi/L						
	Uncert:			+/-6.38							
	TPU:			+/-6.25							
Iridium-192			U	-0.679	pCi/L						
	Uncert:			+/-2.16							
	TPU:			+/-2.12							
Iron-59			U	0.523	pCi/L						
	Uncert:			+/-4.37							
	TPU:			+/-4.28							
Lead-210			U	724	pCi/L						
	Uncert:			+/-596							
	TPU:			+/-584							
Lead-212			U	-0.886	pCi/L						
	Uncert:			+/-3.80							
	TPU:			+/-3.73							
Lead-214			U	5.83	pCi/L						
	Uncert:			+/-4.60							
	TPU:			+/-4.51							
Manganese-54			U	-0.298	pCi/L						
	Uncert:			+/-2.14							
	TPU:			+/-2.10							
Mercury-203			U	0.0663	pCi/L						
	Uncert:			+/-2.42							
	TPU:			+/-2.37							
Neodymium-147			U	-4.28	pCi/L						
	Uncert:			+/-34.0							
	TPU:			+/-33.3							
Neptunium-239			U	-5.05	pCi/L						
	Uncert:			+/-11.8							
	TPU:			+/-11.5							
Niobium-94			U	-1.8	pCi/L						
	Uncert:			+/-2.17							

QC Summary

Workorder: 151732

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch 488129											
	TPU:			+/-2.13							
Niobium-95			U	2.71	pCi/L						
	Uncert:			+/-2.42							
	TPU:			+/-2.37							
Potassium-40			UUI	0.00	pCi/L						
	Uncert:			+/-36.6							
	TPU:			+/-35.8							
Promethium-144			U	-2.14	pCi/L						
	Uncert:			+/-2.22							
	TPU:			+/-2.18							
Promethium-146			UUI	0.00	pCi/L						
	Uncert:			+/-2.79							
	TPU:			+/-2.74							
Radium-228			U	6.14	pCi/L						
	Uncert:			+/-8.67							
	TPU:			+/-8.50							
Ruthenium-106			U	-0.281	pCi/L						
	Uncert:			+/-20.1							
	TPU:			+/-19.7							
Silver-110m			U	-0.852	pCi/L						
	Uncert:			+/-2.09							
	TPU:			+/-2.05							
Sodium-22			U	-0.157	pCi/L						
	Uncert:			+/-1.90							
	TPU:			+/-1.86							
Thallium-208			U	2.60	pCi/L						
	Uncert:			+/-2.39							
	TPU:			+/-2.34							
Thorium-230			U	6.83	pCi/L						
	Uncert:			+/-5.32							
	TPU:			+/-5.21							
Thorium-234			U	33.3	pCi/L						
	Uncert:			+/-143							
	TPU:			+/-140							
Tin-113			U	-1.62	pCi/L						
	Uncert:			+/-2.27							
	TPU:			+/-2.23							
Uranium-235			U	3.20	pCi/L						
	Uncert:			+/-14.2							
	TPU:			+/-14.0							
Uranium-238			U	33.3	pCi/L						
	Uncert:			+/-143							
	TPU:			+/-140							
Yttrium-88			U	1.84	pCi/L						
	Uncert:			+/-2.23							
	TPU:			+/-2.19							
Zinc-65			U	2.91	pCi/L						
	Uncert:			+/-4.39							

QC Summary

Workorder: 151732

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Gamma Spec										
Batch 488129										
	TPU:			+/-4.31						
Zirconium-95			U	-1.8	pCi/L					
	Uncert:			+/-3.88						
	TPU:			+/-3.80						
QC1200996969 151732001 MS										
Actinium-228	U	-0.373	U	-148	pCi/L					12/28/05 10:41
	Uncert:	+/-6.17		+/-599						
	TPU:	+/-6.05		+/-590						
Americium-241	9760 U	-5.11		10800	pCi/L		111			
	Uncert:	+/-11.6		+/-2250						
	TPU:	+/-11.3		+/-4770						
Antimony-124	U	-1.85	U	44.7	pCi/L					
	Uncert:	+/-3.98		+/-279						
	TPU:	+/-3.90		+/-274						
Antimony-125	U	2.44	U	110	pCi/L					
	Uncert:	+/-5.31		+/-297						
	TPU:	+/-5.20		+/-295						
Barium-133	U	0.506	U	-45.2	pCi/L					
	Uncert:	+/-2.60		+/-155						
	TPU:	+/-2.55		+/-153						
Barium-140	U	10.7	U	-146	pCi/L					
	Uncert:	+/-20.1		+/-1330						
	TPU:	+/-19.7		+/-1300						
Beryllium-7	U	-0.628	U	373	pCi/L					
	Uncert:	+/-18.8		+/-1380						
	TPU:	+/-18.5		+/-1360						
Bismuth-212	U	5.49	U	619	pCi/L					
	Uncert:	+/-13.2		+/-1030						
	TPU:	+/-12.9		+/-1040						
Bismuth-214	U	4.62	U	327	pCi/L					
	Uncert:	+/-8.74		+/-251						
	TPU:	+/-8.56		+/-278						
Cerium-139	U	-0.491		1540	pCi/L					
	Uncert:	+/-1.86		+/-266						
	TPU:	+/-1.82		+/-656						
Cerium-141	U	2.85	U	25.1	pCi/L					
	Uncert:	+/-6.81		+/-218						
	TPU:	+/-6.67		+/-214						
Cerium-144	U	-6.92	U	603	pCi/L					
	Uncert:	+/-12.5		+/-751						
	TPU:	+/-12.2		+/-773						
Cesium-134	U	0.624	U	29.0	pCi/L					
	Uncert:	+/-1.82		+/-162						
	TPU:	+/-1.78		+/-160						
Cesium-136	U	5.23	U	355	pCi/L					
	Uncert:	+/-6.86		+/-647						
	TPU:	+/-6.72		+/-649						
Cesium-137	3740 U	0.308		3850	pCi/L		103			

QC Summary

Workorder: 151732

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Gamma Spec										
Batch 488129										
	Uncert:	+/-2.38		+/-519						
	TPU:	+/-2.33		+/-1590						
Chromium-51	U	-2.41	U	377	pCi/L					
	Uncert:	+/-25.0		+/-1500						
	TPU:	+/-24.5		+/-1480						
Cobalt-56	U	0.213	U	64.1	pCi/L					
	Uncert:	+/-1.88		+/-165						
	TPU:	+/-1.84		+/-164						
Cobalt-57	U	0.797		1460	pCi/L					
	Uncert:	+/-1.66		+/-255						
	TPU:	+/-1.63		+/-624						
Cobalt-58	U	-1.79	U	118	pCi/L					
	Uncert:	+/-1.94		+/-166						
	TPU:	+/-1.90		+/-169						
Cobalt-60	5550 U	-0.102		5480	pCi/L		99			
	Uncert:	+/-1.84		+/-729						
	TPU:	+/-1.80		+/-2260						
Europium-152	U	4.63	U	-134	pCi/L					
	Uncert:	+/-6.19		+/-313						
	TPU:	+/-6.06		+/-312						
Europium-154	U	-3.39	U	-44.1	pCi/L					
	Uncert:	+/-5.16		+/-296						
	TPU:	+/-5.05		+/-291						
Europium-155	U	0.139	U	81.8	pCi/L					
	Uncert:	+/-6.87		+/-390						
	TPU:	+/-6.73		+/-384						
Iridium-192	U	-1.13	U	69.4	pCi/L					
	Uncert:	+/-2.03		+/-128						
	TPU:	+/-1.99		+/-128						
Iron-59	U	1.72	U	-21	pCi/L					
	Uncert:	+/-4.28		+/-415						
	TPU:	+/-4.20		+/-407						
Lead-210	U	-19.8	U	5040	pCi/L					
	Uncert:	+/-387		+/-39000						
	TPU:	+/-379		+/-38300						
Lead-212	U	1.35	U	63.6	pCi/L					
	Uncert:	+/-5.89		+/-196						
	TPU:	+/-5.77		+/-194						
Lead-214	U	4.05	U	107	pCi/L					
	Uncert:	+/-6.54		+/-255						
	TPU:	+/-6.41		+/-253						
Manganese-54	U	-1.08	U	-44	pCi/L					
	Uncert:	+/-1.57		+/-118						
	TPU:	+/-1.53		+/-117						
Mercury-203	U	-0.283	U	194	pCi/L					
	Uncert:	+/-2.55		+/-260						
	TPU:	+/-2.50		+/-266						
Neodymium-147	U	16.3	U	-589	pCi/L					

QC Summary

Workorder: 151732

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch 488129											
	Uncert:	+/-46.2		+/-3090							
	TPU:	+/-45.3		+/-3030							
Neptunium-239	U	0.211	U	-143	pCi/L						
	Uncert:	+/-12.7		+/-707							
	TPU:	+/-12.4		+/-695							
Niobium-94	U	0.619	U	-2.06	pCi/L						
	Uncert:	+/-1.67		+/-120							
	TPU:	+/-1.64		+/-117							
Niobium-95	U	0.780	U	152	pCi/L						
	Uncert:	+/-2.43		+/-201							
	TPU:	+/-2.38		+/-206							
Potassium-40		32.7	U	1350	pCi/L						
	Uncert:	+/-27.5		+/-1210							
	TPU:	+/-27.0		+/-1300							
Promethium-144	U	-0.00511	U	-5.0	pCi/L						
	Uncert:	+/-1.70		+/-109							
	TPU:	+/-1.67		+/-107							
Promethium-146	U	2.65	U	-60.5	pCi/L						
	Uncert:	+/-2.38		+/-174							
	TPU:	+/-2.33		+/-172							
Radium-228	U	-0.373	U	-148	pCi/L						
	Uncert:	+/-6.17		+/-599							
	TPU:	+/-6.05		+/-590							
Ruthenium-106	U	11.5	U	517	pCi/L						
	Uncert:	+/-16.4		+/-1270							
	TPU:	+/-16.0		+/-1260							
Silver-110m	U	-0.234	U	-10	pCi/L						
	Uncert:	+/-1.61		+/-139							
	TPU:	+/-1.58		+/-136							
Sodium-22	U	-1.2	U	-16.4	pCi/L						
	Uncert:	+/-1.86		+/-106							
	TPU:	+/-1.82		+/-104							
Thallium-208	U	0.945	U	79.9	pCi/L						
	Uncert:	+/-2.91		+/-142							
	TPU:	+/-2.85		+/-143							
Thorium-230	U	4.62	U	327	pCi/L						
	Uncert:	+/-8.73		+/-251							
	TPU:	+/-8.56		+/-278							
Thorium-234	U	166	U	3030	pCi/L						
	Uncert:	+/-95.0		+/-7400							
	TPU:	+/-93.1		+/-7350							
Tin-113	U	-0.927		1700	pCi/L						
	Uncert:	+/-2.56		+/-324							
	TPU:	+/-2.51		+/-740							
Uranium-235	U	8.78	U	49.0	pCi/L						
	Uncert:	+/-18.4		+/-639							
	TPU:	+/-18.1		+/-627							
Uranium-238	U	166	U	3030	pCi/L						

QC Summary

Workorder: 151732

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Gamma Spec										
Batch 488129										
	Uncert:	+/-95.0		+/-7400						
	TPU:	+/-93.1		+/-7350						
Yttrium-88	U	-0.374		2470	pCi/L					
	Uncert:	+/-1.65		+/-537						
	TPU:	+/-1.61		+/-1100						
Zinc-65	U	-0.723	U	-19.9	pCi/L					
	Uncert:	+/-3.71		+/-299						
	TPU:	+/-3.64		+/-294						
Zirconium-95	U	-0.236	U	-39.5	pCi/L					
	Uncert:	+/-3.75		+/-297						
	TPU:	+/-3.67		+/-291						
Batch 490999										
QC1201003356 151732001 DUP										
Nickel-59	U	15.1	U	0.141	pCi/L	196		(0% - 100%)	BXF1	12/30/05 16:51
	Uncert:	+/-10.4		+/-11.6						
	TPU:	+/-10.2		+/-11.4						
QC1201003358 LCS										
Nickel-59	380			358	pCi/L		94	(75%-125%)		12/29/05 17:59
	Uncert:			+/-45.5						
	TPU:			+/-52.7						
QC1201003355 MB										
Nickel-59			U	7.92	pCi/L					12/30/05 14:49
	Uncert:			+/-10.2						
	TPU:			+/-10.1						
QC1201003357 151732001 MS										
Nickel-59	380 U	15.1		355	pCi/L		93	(75%-125%)		12/29/05 19:06
	Uncert:	+/-10.4		+/-50.4						
	TPU:	+/-10.2		+/-56.7						
Rad Gas Flow										
Batch 487482										
QC1200995397 151732003 DUP										
Total Strontium	U	-0.279	U	-0.434	pCi/L	N/A		(0% - 100%)	EXW1	12/14/05 17:28
	Uncert:	+/-0.381		+/-0.357						
	TPU:	+/-0.381		+/-0.357						
QC1200995399 LCS										
Total Strontium	51.8			46.6	pCi/L		90	(75%-125%)		12/14/05 17:33
	Uncert:			+/-3.22						
	TPU:			+/-3.51						
QC1200995396 MB										
Total Strontium			U	0.212	pCi/L					12/14/05 17:28
	Uncert:			+/-0.428						
	TPU:			+/-0.428						
QC1200995398 151732003 MS										
Total Strontium	104 U	-0.279		92.0	pCi/L		89	(75%-125%)		12/14/05 17:28
	Uncert:	+/-0.381		+/-6.57						
	TPU:	+/-0.381		+/-7.12						
Batch 489159										
QC1200999366 151735002 DUP										

QC Summary

Workorder: 151732

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Gas Flow										
Batch 489159										
Alpha	U	0.831	U	1.01	pCi/L	19		(0% - 100%)	CXO1	12/23/05 15:37
	Uncert:	+/-1.27		+/-1.36						
	TPU:	+/-1.27		+/-1.37						
Beta	U	-1.94	U	1.07	pCi/L	N/A		(0% - 100%)		
	Uncert:	+/-2.06		+/-2.11						
	TPU:	+/-2.07		+/-2.11						
QC1200999369 LCS										
Alpha	108			109	pCi/L		101	(75%-125%)		12/23/05 15:48
	Uncert:			+/-10.7						
	TPU:			+/-13.4						
Beta	311			311	pCi/L		100	(75%-125%)		
	Uncert:			+/-14.8						
	TPU:			+/-19.3						
QC1200999365 MB										
Alpha			U	0.421	pCi/L					12/23/05 15:48
	Uncert:			+/-1.16						
	TPU:			+/-1.17						
Beta			U	-1.54	pCi/L					
	Uncert:			+/-1.86						
	TPU:			+/-1.86						
QC1200999367 151735002 MS										
Alpha	108 U	0.831		89.6	pCi/L		83	(75%-125%)		12/23/05 15:48
	Uncert:	+/-1.27		+/-12.1						
	TPU:	+/-1.27		+/-13.7						
Beta	311 U	-1.94		328	pCi/L		106	(75%-125%)		
	Uncert:	+/-2.06		+/-15.6						
	TPU:	+/-2.07		+/-18.6						
QC1200999368 151735002 MSD										
Alpha	108 U	0.831		96.5	pCi/L	7	89	(0%-20%)		
	Uncert:	+/-1.27		+/-12.5						
	TPU:	+/-1.27		+/-13.7						
Beta	311 U	-1.94		364	pCi/L	11	117	(0%-20%)		
	Uncert:	+/-2.06		+/-16.8						
	TPU:	+/-2.07		+/-22.9						
Rad Liquid Scintillation										
Batch 487442										
QC1200995296 151732004 DUP										
Promethium-147	U	3.20	U	4.90	pCi/L	0		(0% - 100%)	AF1	12/22/05 04:23
	Uncert:	+/-4.65		+/-4.84						
	TPU:	+/-4.65		+/-4.84						
QC1200995298 LCS										
Promethium-147	138			137	pCi/L		100	(75%-125%)		12/21/05 05:25
	Uncert:			+/-12.3						
	TPU:			+/-13.5						
QC1200995295 MB										
Promethium-147			U	4.32	pCi/L					12/22/05 02:51
	Uncert:			+/-4.52						
	TPU:			+/-4.52						
QC1200995297 151732004 MS										

QC Summary

Workorder: 151732

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Liquid Scintillation										
Batch 487442										
Promethium-147	278 U	3.20		229	pCi/L		82	(75%-125%)		
	Uncert:	+/-4.65		+/-22.1						
	TPU:	+/-4.65		+/-24.0						
Batch 487444										
QC1200995300 151732001 DUP										
Iron-55	U	-28.2	U	-1.51	pCi/L	N/A		(0% - 100%)	BXF1	12/16/05 06:35
	Uncert:	+/-37.1		+/-28.2						
	TPU:	+/-37.1		+/-28.2						
QC1200995302 LCS										
Iron-55	2000			2030	pCi/L		101	(75%-125%)		12/16/05 08:55
	Uncert:			+/-179						
	TPU:			+/-251						
QC1200995299 MB										
Iron-55			U	-16.4	pCi/L					12/16/05 04:29
	Uncert:			+/-36.0						
	TPU:			+/-36.0						
QC1200995301 151732001 MS										
Iron-55	2010 U	-28.2		1940	pCi/L		97	(75%-125%)		12/16/05 08:38
	Uncert:	+/-37.1		+/-129						
	TPU:	+/-37.1		+/-210						
Batch 487445										
QC1200995304 151732001 DUP										
Nickel-63	U	1.76	U	8.46	pCi/L	0		(0% - 100%)	BXF1	12/15/05 05:00
	Uncert:	+/-14.6		+/-13.9						
	TPU:	+/-14.6		+/-13.9						
QC1200995306 LCS										
Nickel-63	1570			1370	pCi/L		87	(75%-125%)		12/15/05 06:34
	Uncert:			+/-39.0						
	TPU:			+/-51.0						
QC1200995303 MB										
Nickel-63			U	-3.38	pCi/L					12/15/05 04:13
	Uncert:			+/-13.4						
	TPU:			+/-13.4						
QC1200995305 151732001 MS										
Nickel-63	1570 U	1.76		1390	pCi/L		89	(75%-125%)		12/15/05 05:47
	Uncert:	+/-14.6		+/-38.2						
	TPU:	+/-14.6		+/-50.7						
Batch 487449										
QC1200995312 151732001 DUP										
Technetium-99	U	-5.14	U	0.989	pCi/L	N/A		(0% - 100%)	SLN1	12/19/05 23:54
	Uncert:	+/-13.4		+/-10.4						
	TPU:	+/-13.4		+/-10.4						
QC1200995314 LCS										
Technetium-99	1180			1270	pCi/L		107	(75%-125%)		12/20/05 01:13
	Uncert:			+/-50.6						
	TPU:			+/-59.6						
QC1200995311 MB										
Technetium-99			U	5.13	pCi/L					12/19/05 22:51

QC Summary

Workorder: 151732

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Liquid Scintillation										
Batch 487449										
	Uncert:			+/-12.2						
	TPU:			+/-12.2						
QC1200995313 151732001 MS										
Technetium-99	1180 U	-5.14		989	pCi/L		84	(75%-125%)		12/20/05 00:56
	Uncert:	+/-13.4		+/-42.5						
	TPU:	+/-13.4		+/-49.2						
Batch 487451										
QC1200995316 151732001 DUP										
Tritium	U	113	U	129	pCi/L	0		(0% - 100%)	MXP1	12/15/05 01:35
	Uncert:	+/-211		+/-215						
	TPU:	+/-211		+/-215						
QC1200995318 LCS										
Tritium	2990			2900	pCi/L		97	(75%-125%)		12/15/05 02:39
	Uncert:			+/-488						
	TPU:			+/-490						
QC1200995315 MB										
Tritium			U	23.1	pCi/L					12/15/05 00:48
	Uncert:			+/-212						
	TPU:			+/-212						
QC1200995317 151732001 MS										
Tritium	3000 U	113		3200	pCi/L		107	(75%-125%)		12/15/05 02:22
	Uncert:	+/-211		+/-504						
	TPU:	+/-211		+/-507						
Batch 487453										
QC1200995324 151732001 DUP										
Carbon-14	U	9.08	U	9.32	pCi/L	0		(0% - 100%)	SLN1	12/14/05 22:44
	Uncert:	+/-15.7		+/-15.7						
	TPU:	+/-15.7		+/-15.7						
QC1200995326 LCS										
Carbon-14	1080			1090	pCi/L		101	(75%-125%)		12/15/05 00:19
	Uncert:			+/-36.4						
	TPU:			+/-40.2						
QC1200995323 MB										
Carbon-14			U	8.73	pCi/L					12/14/05 21:56
	Uncert:			+/-15.7						
	TPU:			+/-15.7						
QC1200995325 151732001 MS										
Carbon-14	1080 U	9.08		1050	pCi/L		97	(75%-125%)		12/14/05 23:32
	Uncert:	+/-15.7		+/-35.8						
	TPU:	+/-15.7		+/-39.4						

Notes:
The Qualifiers in this report are defined as follows:

- B Target analyte was detected in the sample as well as the associated blank.
- BD Results below the MDC or low tracer recovery.
- E Concentration of the target analyte exceeds the instrument calibration range.
  Analytical holding time exceeded.

QC Summary

Workorder: 151732

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time

H

J Indicates an estimated value.

U Target analyte was analyzed for but not detected above the MDL or LOD.

UI Uncertain identification for gamma spectroscopy.

X Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.

d The 2:1 depletion requirement was not met for this sample

h Sample preparation or preservation holding time exceeded.

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more.
** Indicates analyte is a surrogate compound.
^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptence 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.
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.