



Page 1 of 3

Westinghouse Electric Company LLC
Columbia Fuel Site
5801 Bluff Road
Hopkins, South Carolina 29061-9121
USA

Director, Office of Nuclear Material Safety and Safeguards and
Environmental Review
U. S. Nuclear Regulatory Commission
Document Control Desk
11555 Rockville Pike
Rockville, Maryland 20852-2738

Direct tel: 803-647-3338
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Your ref:
Our ref: LTR-RAC-18-11

March 6, 2018

SUBJECT: SNM-1107 ENVIRONMENTAL REPORT SUPPLEMENT

Please find the enclosed supplement to the Westinghouse Electric Company LLC (Westinghouse) Environmental Report submitted on December 17, 2014 as part of license renewal. This supplement includes information on an underground piping leak that was identified in 2011 and subsequently replaced with overhead piping.

If you have any questions, please contact me at (803) 647-3338.

Nancy Blair Parr

Nancy Blair Parr, Manager
Licensing
Westinghouse Columbia Fuel Fabrication Facility
Docket 70-1151 License SNM -1107

Enclosure: Environmental Report Supplement

CC:

U.S. Nuclear Regulatory Commission, Region II
245 Peachtree Center Avenue NE, Suite 1200
Atlanta, GA 30303-1257
Attn: Mr. Tom Vukovinsky

U.S. Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, Maryland 20852-2738
Attn: Mrs. Marilyn Diaz - Mail Stop T4 A 60

ENVIRONMENTAL REPORT SUPPLEMENT

The following correspondence is provided to the NRC as a summary of events surrounding the discovery of a leaking pipe located underground and under the building at the Columbia Fuel Fabrication Facility (CFFF) in 2011.

Included in the correspondence is:

- Pertinent background information, including underground piping construction and leak discovery;
- Subsequent actions taken to correct the leak and prevent recurrence;
- An evaluation of the environmental impact at the time;
- Plans for remediation until decommissioning; and
- A hydrology analysis performed by AECOM on the site's ability to detect any potential contaminant movement from the leak location under the building.

Underground Piping Construction

The Uranium Recycling and Recovery Services (URRS) area is located in the southwest portion of the facility. As part of the 1978 expansion project to the West side of the manufacturing building, the Contaminated Waste Water (CWW) drainage line was installed. The contaminated waste water piping system was constructed of heavy cast iron piping.

Leak Discovery

In 2011, Westinghouse discovered a small void under the concrete floor slab while working in the vicinity of the buried piping system. Upon further investigation it was discovered that the buried piping system running through the URRS area (in Solvent Extraction) had developed a leak. A partial blockage was also identified in the system in the same timeframe. The building elevation in the Solvent Extraction Area is higher than the elevation of the outside roadway. One section of the piping that contained a leak (between column lines 2CC and 3CC) was located approximately 2 feet below the Solvent Extraction floor grade and approximately 2.5 feet above the outside, finished road grade. The leaking section of the pipe where boring samples were collected (between column lines 5CC and 6CC) had invert elevations ranging from approximately 3 feet to 9 feet below the Solvent Extraction finish floor grade and between one foot above to 4.5 feet below the outside finished road grade. Groundwater sampling well W-38 is installed flush with the outside finished grade.

Corrective and Preventive Actions

The first action taken was to remove the blockage in the leaking CWW line to fully restore its flow path and minimize any further flow out the breach. A review of the existing inputs to the CWW drainage line revealed condensate drains from air conditioning units, eyewash and water fountain drains, chemical maintenance area service and lavatory sinks, and ventilation housing drains. (Note: All ventilation housing drains normally have zero flow. There must be an upset in the system or equipment failure to produce any flow.) Further investigation determined that the piping had most likely deteriorated from the past practice of routing a mixture of hot steam condensate and caustic solutions through this line. It was then confirmed that contaminated, acidic, and/or caustic solutions are no longer routed to this line.

Upon continued investigation with a piping camera system, a second breach in the system was identified further down the piping. Upon discovery of the second breach, Westinghouse employed the services of a ground penetrating radar company to evaluate the condition of the subsurface area beneath the concrete floor slab within the areas of the piping breaches. The ground penetrating radar identified a larger void beneath the concrete floor slab within the areas of the piping breaches. Westinghouse determined the most appropriate long term action to prevent recurrence was to install a new above ground piping system for the contaminated waste water drainage in the solvent extraction area and the chemical maintenance area.

Environmental Impact

The next course of action was to determine whether contaminated effluents had been released to the subsurface soil beneath the piping system. To gain access to the soil below for sampling purposes, Westinghouse performed core boring in four strategic locations through the existing concrete floor slab. Soil, sludge, and water samples were collected from these locations and sent off for analysis (Attachment 1: GEL

Work Order 297573). The soil borings indicated that the radar study had misidentified a larger void than was actually present, since some of the expected void area was actually filled with a different density of soil. Nonetheless, the sampling results indicated elevated levels of U-234, U-235, and U-238 in the soil, sludge, and water as shown below in Table 1. Because the leak location was under the building's concrete slab in an existing chemical process area, the discovery and subsequent investigative work was recorded in the Columbia Fuel Fabrication Facility Decommissioning Funding Plan.

Table 1: Hand Auger Sampling Results, March 12, 2012

Total U	Hole #1	Hole #2	Hole #3	Hole #4
Soil	408.0 pCi/g	2.47 pCi/g	373.6 pCi/g	374.4 pCi/g
Sludge	--	--	405.1 pCi/g	--
Process liquid from leaking pipe	--	--	--	98,120 pCi/g

Source: General Engineering Laboratory Work Order 297573

*Depth of borings approximated at 6-8 feet below concrete slab

Future Environmental Remediation at Decommissioning

Based on current knowledge, at the time of decommissioning, the concrete floor slab will be saw cut around the perimeter of the area of concern. Since the area of concern is within the larger boundary of the Solvent Extraction process area, the entire footprint of solvent extraction (i.e. 8,160 ft²) will be removed down to a depth of approximately ten feet below land surface (bls). The cooling water generated during the saw cutting will be collected, sampled, and processed, if necessary, with all other liquids collected during the soil remediation. The concrete floor slab will be removed and packaged for final disposition. It is estimated that eighty one thousand six hundred ten (81,610) cubic feet of soil will be removed, packaged and stored onsite until all soil has been remediated and final shipments are arranged.

Site Hydrogeology

Assessment of groundwater at CFFF began in 1989 and is on-going. During previous investigations, aquifer characteristics such as groundwater flow direction and velocity at CFFF were assessed. Based upon data collected during the site investigations, groundwater beneath the CFFF flows to the southwest at a velocity of approximately 153 feet/year.

These assessments also provided an understanding of the site geology and resulted in an extensive monitoring well network. The water table aquifer generally consists of loose sand and silty sand underlain by a clay confining unit with a thickness ranging from 39 to 83 feet. This confining unit drastically impedes the vertical migration (vertical hydraulic conductivities of less than 1×10^{-7} cm/sec, S&ME 1982) of groundwater. Currently there are 35 monitoring wells in the water table aquifer and three wells in the Black Mingo aquifer beneath the confining unit.

Monitoring well W-37 was installed in 1992 adjacent to the URRS Solvent Extraction area as part of an investigation for gross alpha in soil and gross alpha/gross beta in groundwater. The investigation recommended the installation of well W-38, which was later performed. Monitoring well W-38 is located approximately 60 feet southwest of the western edge of the URRS. Based upon data collected from these two monitoring wells, the depth to groundwater in the vicinity of the URRS area has historically fluctuated from approximately 9 to 16 feet bls. Monitoring wells W-37 and W-38 are screened from 15.5 to 20.5 and 15 to 20 feet bls, respectively, and the confining unit is approximately 28 feet bls near the URRS. These monitoring wells are likely positioned to monitor for potential groundwater impacts from URRS, including the 2011 piping leak under the Solvent Extraction area. Additional monitoring wells within the CFFF's well network are also located downgradient of monitoring well W-38. Detailed site geology and hydrogeology information can be found in AECOM's December 31, 2013 Remedial Investigation Report.

Attachment 2 is the consolidated monitoring history since 2004 for W-28, W-29, W-30, W-35, W-37, W-38, and W-45.



a member of **The GEL Group INC**

ATTACHMENT 1



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

www.gel.com

March 27, 2012

Ms. Cynthia Logsdon
Westinghouse Electric Company, LLC
PO Drawer R
Columbia, South Carolina 29205

Re: Radiochemistry - PO 4500385556
Work Order: 297573

Dear Ms. Logsdon:

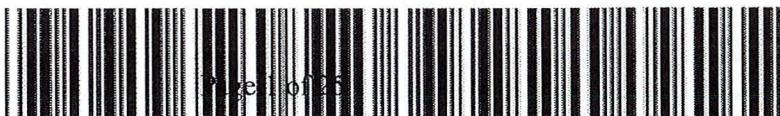
GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on March 14, 2012. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4443.

Sincerely,

Richard Albee
Project Manager

Purchase Order: 4500385556
Enclosures



ENVIRONMENTAL PACKING LIST & CHAIN OF CUSTODY FORM

FORM NO.:	ROF-06-006-1
REVISION:	8
PAGE:	1 OF 1
EFFECTIVE DATE:	02-23-12

297573

VENDOR: General Engineering

From: Westinghouse Electric Company, LLC
5801 Bluff Road
Hopkins, SC 29061

Month: Mar
Year: 2012

RUSH!

Technician: **R.Crews** Date Shipped: **3/13/2012**

Please Email R. Crews upon receipt of shipment to crewsre@westinghouse.com

Re: Wheeler 3-14-12 0905
Printed Copies are Uncontrolled

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Electronically approved records are authenticated in the electronic document management system

Electronically approved records are authenticated in the electronic document management system.
This document is the property of and contains Proprietary Information owned by Westinghouse Electric Company LLC and/or its subcontractors and suppliers. It is transmitted to you in confidence and trust, and you agree to treat this document in strict accordance with the terms and conditions of the agreement under which it was provided to you.
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SAMPLE RECEIPT & REVIEW FORM

Client:	WNUC			SDG/AR/CO/COC/Work Order:	297573
Received By:	MK			Date Received:	3-14-12
Suspected Hazard Information	Yes	No	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.		
COC/Samples marked as radioactive?	<input checked="" type="checkbox"/>			Maximum Net Counts Observed* (Observed Counts - Area Background Counts): 0	
Classified Radioactive II or III by RSO?	<input checked="" type="checkbox"/>			If yes, Were swipes taken of sample containers < action levels?	
COC/Samples marked containing PCBs?	<input checked="" type="checkbox"/>				
Shipped as a DOT Hazardous?	<input checked="" type="checkbox"/>			Hazard Class Shipped:	UN#:
Samples identified as Foreign Soil?	<input checked="" type="checkbox"/>				
Sample Receipt Criteria	Yes	NA	?	Comments/Qualifiers (Required for Non-Conforming Items)	
1 Shipping containers received intact and sealed?	<input checked="" type="checkbox"/>			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)	
2 Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	<input checked="" type="checkbox"/>			Preservation Method: Ice bags Blue ice Dry ice None *all temperatures are recorded in Celsius 18°C	
2a Daily check performed and passed on IR temperature gun?	<input checked="" type="checkbox"/>			Temperature Device Serial #: 81502182 Secondary Temperature Device Serial #: (If Applicable):	
3 Chain of custody documents included with shipment?	<input checked="" type="checkbox"/>				
4 Sample containers intact and sealed?	<input checked="" type="checkbox"/>			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)	
5 Samples requiring chemical preservation at proper pH?	<input checked="" type="checkbox"/>			Sample ID's, containers affected and observed pH:	
6 VOA vials free of headspace (defined as < 6mm bubble)?	<input checked="" type="checkbox"/>			If Preservation added, Lot#: Sample ID's and containers affected:	
7 Are Encore containers present?	<input checked="" type="checkbox"/>			(If yes, immediately deliver to Volatiles laboratory)	
8 Samples received within holding time?	<input checked="" type="checkbox"/>			ID's and tests affected:	
9 Sample ID's on COC match ID's on bottles?	<input checked="" type="checkbox"/>			Sample ID's and containers affected:	
10 Date & time on COC match date & time on bottles?	<input checked="" type="checkbox"/>			Sample ID's affected:	
11 Number of containers received match number indicated on COC?	<input checked="" type="checkbox"/>			Sample ID's affected:	
12 Are sample containers identifiable as GEL provided?	<input checked="" type="checkbox"/>				
13 COC form is properly signed in relinquished/received sections?	<input checked="" type="checkbox"/>			Circle Applicable: FedEx Air FedEx Ground UPS Field Services Courier Other	
14 Carrier and tracking number.	<input checked="" type="checkbox"/>			9765 5275 8174	
Comments (Use Continuation Form if needed):					

GEL LABORATORIES LLC

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

Certificate of Analysis Report for

WNUC001 Westinghouse Electric Co. LLC

Client SDG: 297573 GEL Work Order: 297573

The Qualifiers in this report are defined as follows:

- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a surrogate compound
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

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.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the detection limit.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Richard Albee.

Reviewed by



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

Certificate of Analysis

Report Date: March 27, 2012

Company : Westinghouse Electric Company, LLC
Address : PO Drawer R

Contact: Columbia, South Carolina 29205
Ms. Cynthia Logsdon
Project: Radiochemistry - PO 4500385556

Client Sample ID:	Hole #1 Soil	Project:	WNUC00118
Sample ID:	297573001	Client ID:	WNUC001
Matrix:	Soil		
Collect Date:	08-MAR-12 11:42		
Receive Date:	14-MAR-12		
Collector:	Client		
Moisture:	17.8%		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Alpha Spec Analysis												
Alphaspec U, Solid "Dry Weight Corrected"												
Uranium-233/234		330	+/-7.57	0.334	0.500	pCi/g	NXP2	03/19/12	1443	1196417	1	
Uranium-235/236		16.0	+/-1.85	0.268	0.500	pCi/g						
Uranium-238		62.0	+/-3.28	0.250	0.500	pCi/g						
Rad Gas Flow Proportional Counting												
GFPC, Gross A/B, solid "Dry Weight Corrected"												
Alpha		309	+/-20.9	3.18	4.00	pCi/g	DXF3	03/22/12	1426	1197649	2	
Beta		122	+/-8.95	4.83	10.0	pCi/g						
Rad Liquid Scintillation Analysis												
Liquid Scint Tc99, Solid "As Received"												
Technetium-99	U	-0.934	+/-1.60	2.87	5.00	pCi/g	MYM1	03/20/12	0806	1196375	3	

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LYT1	03/14/12	1439	1196218

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	DOE EML HASL-300, U-02-RC Modified	
2	EPA 900.0/SW846 9310/SM 7110B Modified	
3	DOE EML HASL-300, Tc-02-RC Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Uranium-232 Tracer	Alphaspec U, Solid "Dry Weight Corrected"			29.9	(15%-125%)
Technetium-99m Tracer	Liquid Scint Tc99, Solid "As Received"			98.9	(15%-125%)

GEL LABORATORIES LLC

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

Certificate of Analysis

Report Date: March 27, 2012

Company : Westinghouse Electric Company, LLC
 Address : PO Drawer R

Contact: Columbia, South Carolina 29205
 Project: Ms. Cynthia Logsdon
 Project: Radiochemistry - PO 4500385556

Client Sample ID:	Hole #2 Soil	Project:	WNUC00118
Sample ID:	297573002	Client ID:	WNUC001
Matrix:	Soil		
Collect Date:	08-MAR-12 14:20		
Receive Date:	14-MAR-12		
Collector:	Client		
Moisture:	13.2%		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Alpha Spec Analysis												
Alphaspec U, Solid "Dry Weight Corrected"												
Uranium-233/234		1.40	+/-0.277	0.108	0.500	pCi/g	NXP2	03/19/12	1443	1196417	1	
Uranium-235/236	U	0.0221	+/-0.0498	0.105	0.500	pCi/g						
Uranium-238		1.05	+/-0.238	0.0852	0.500	pCi/g						
Rad Gas Flow Proportional Counting												
GFPC, Gross A/B, solid "Dry Weight Corrected"												
Alpha		21.5	+/-5.54	3.03	4.00	pCi/g	DXF3	03/22/12	1426	1197649	2	
Beta		22.6	+/-4.20	4.25	10.0	pCi/g						
Rad Liquid Scintillation Analysis												
Liquid Scint Tc99, Solid "As Received"												
Technetium-99	U	-1.86	+/-1.46	2.70	5.00	pCi/g	MYM1	03/20/12	0822	1196375	3	

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LYT1	03/14/12	1439	1196218

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	DOE EML HASL-300, U-02-RC Modified	
2	EPA 900.0/SW846 9310/SM 7110B Modified	
3	DOE EML HASL-300, Tc-02-RC Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Uranium-232 Tracer	Alphaspec U, Solid "Dry Weight Corrected"			96.6	(15%-125%)
Technetium-99m Tracer	Liquid Scint Tc99, Solid "As Received"			97.9	(15%-125%)

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Certificate of Analysis

Report Date: March 27, 2012

Company : Westinghouse Electric Company, LLC
Address : PO Drawer R

Contact: Columbia, South Carolina 29205
Project: Ms. Cynthia Logsdon
Project: Radiochemistry - PO 4500385556

Client Sample ID:	Hole #3 Soil	Project:	WNUC00118
Sample ID:	297573003	Client ID:	WNUC001
Matrix:	Soil		
Collect Date:	09-MAR-12 13:30		
Receive Date:	14-MAR-12		
Collector:	Client		
Moisture:	19.7%		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Alpha Spec Analysis												
Alphaspec U, Solid "Dry Weight Corrected"												
Uranium-233/234		308	+/-6.35	0.239	0.500	pCi/g	NXP2	03/19/12	1443	1196417		1
Uranium-235/236		14.2	+/-1.52	0.234	0.500	pCi/g						
Uranium-238		51.4	+/-2.60	0.102	0.500	pCi/g						
Rad Gas Flow Proportional Counting												
GFPC, Gross A/B, solid "Dry Weight Corrected"												
Alpha		358	+/-23.3	3.02	4.00	pCi/g	DXF3	03/22/12	1426	1197649		2
Beta		121	+/-8.65	4.09	10.0	pCi/g						
Rad Liquid Scintillation Analysis												
Liquid Scint Tc99, Solid "As Received"												
Technetium-99	U	-1.75	+/-1.60	2.93	5.00	pCi/g	MYM1	03/20/12	0839	1196375		3

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LYT1	03/14/12	1439	1196218

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	DOE EML HASL-300, U-02-RC Modified	
2	EPA 900.0/SW846 9310/SM 7110B Modified	
3	DOE EML HASL-300, Tc-02-RC Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Uranium-232 Tracer	Alphaspec U, Solid "Dry Weight Corrected"			41.9	(15%-125%)
Technetium-99m Tracer	Liquid Scint Tc99, Solid "As Received"			95.7	(15%-125%)

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Certificate of Analysis

Report Date: March 27, 2012

Company : Westinghouse Electric Company, LLC
 Address : PO Drawer R

Contact: Ms. Cynthia Logsdon
 Project: Radiochemistry - PO 4500385556

Client Sample ID:	Hole #3 Sludge	Project:	WNUC00118
Sample ID:	297573004	Client ID:	WNUC001
Matrix:	Sludge		
Collect Date:	09-MAR-12 14:15		
Receive Date:	14-MAR-12		
Collector:	Client		
Moisture:	23.6%		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Alpha Spec Analysis												
Alphaspec U, Solid "Dry Weight Corrected"												
Uranium-233/234		329	+/-6.69	0.274	0.500	pCi/g	NXP2	03/19/12	1443	1196417	1	
Uranium-235/236		14.5	+/-1.56	0.131	0.500	pCi/g						
Uranium-238		61.6	+/-2.89	0.196	0.500	pCi/g						
Rad Gas Flow Proportional Counting												
GFPC, Gross A/B, solid "Dry Weight Corrected"												
Alpha		264	+/-18.1	2.65	4.00	pCi/g	DXF3	03/22/12	1426	1197649	2	
Beta		116	+/-8.05	4.59	10.0	pCi/g						
Rad Liquid Scintillation Analysis												
Liquid Scint Tc99, Solid "As Received"												
Technetium-99	U	-1.68	+/-1.73	3.15	5.00	pCi/g	MYM1	03/20/12	0855	1196375	3	

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LYT1	03/14/12	1439	1196218

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	DOE EML HASL-300, U-02-RC Modified	
2	EPA 900.0/SW846 9310/SM 7110B Modified	
3	DOE EML HASL-300, Tc-02-RC Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Uranium-232 Tracer	Alphaspec U, Solid "Dry Weight Corrected"			38.4	(15%-125%)
Technetium-99m Tracer	Liquid Scint Tc99, Solid "As Received"			97.8	(15%-125%)

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Certificate of Analysis

Report Date: March 27, 2012

Company : Westinghouse Electric Company, LLC
Address : PO Drawer R

Contact: Columbia, South Carolina 29205
Project: Ms. Cynthia Logsdon
Project: Radiochemistry - PO 4500385556

Client Sample ID: Hole #4 Soil Project: WNUC00118
Sample ID: 297573005 Client ID: WNUC001
Matrix: Soil
Collect Date: 12-MAR-12 14:40
Receive Date: 14-MAR-12
Collector: Client
Moisture: 22.2%

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Alpha Spec Analysis												
Alphaspec U, Solid "Dry Weight Corrected"												
Uranium-233/234		308	+/-6.40	0.256	0.500	pCi/g	NXP2	03/19/12	1443	1196417	1	
Uranium-235/236		13.9	+/-1.51	0.205	0.500	pCi/g						
Uranium-238		52.8	+/-2.65	0.211	0.500	pCi/g						
Rad Gas Flow Proportional Counting												
GFPC, Gross A/B, solid "Dry Weight Corrected"												
Alpha		391	+/-25.6	3.05	4.00	pCi/g	DXF3	03/22/12	1426	1197649	2	
Beta		118	+/-8.64	4.63	10.0	pCi/g						
Rad Liquid Scintillation Analysis												
Liquid Scint Tc99, Solid "As Received"												
Technetium-99	U	0.980	+/-1.11	1.86	5.00	pCi/g	MYM1	03/20/12	1550	1196375	3	

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LYTI	03/14/12	1439	1196218

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	DOE EML HASL-300, U-02-RC Modified	
2	EPA 900.0/SW846 9310/SM 7110B Modified	
3	DOE EML HASL-300, Tc-02-RC Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Uranium-232 Tracer	Alphaspec U, Solid "Dry Weight Corrected"			38.7	(15%-125%)
Technetium-99m Tracer	Liquid Scint Tc99, Solid "As Received"			95.7	(15%-125%)

GEL LABORATORIES LLC

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

Certificate of Analysis

Report Date: March 27, 2012

Company : Westinghouse Electric Company, LLC
 Address : PO Drawer R

Contact: Ms. Cynthia Logsdon
 Project: Radiochemistry - PO 4500385556

Client Sample ID:	Hole #4 Water	Project:	WNUC00118
Sample ID:	297573006	Client ID:	WNUC001
Matrix:	Water		
Collect Date:	12-MAR-12 14:40		
Receive Date:	14-MAR-12		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Alpha Spec Analysis												
Alphaspec U, Liquid "As Received"												
Uranium-233/234		81500	+/-1030	16.3	1.00	pCi/L	DXM2	03/23/12	1453	1198261	1	
Uranium-235/236		3820	+/-248	20.1	1.00	pCi/L						
Uranium-238		12800	+/-409	16.3	1.00	pCi/L						
Rad Gas Flow Proportional Counting												
GFPC, Gross A/B, liquid "As Received"												
Alpha		99900	+/-1500	126	5.00	pCi/L	DXF3	03/15/12	1952	1196156	2	
Beta		26300	+/-356	82.4	5.00	pCi/L						
Alpha		73800	+/-3480	405	5.00	pCi/L	DXF3	03/16/12	1237	1196156	3	
Beta		16800	+/-818	183	5.00	pCi/L						
Rad Liquid Scintillation Analysis												
Liquid Scint Tc99, Liquid "As Received"												
Technetium-99	U	-42	+/-121	214	300	pCi/L	MYM1	03/20/12	0806	1196372	4	

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	DOE EML HASL-300, U-02-RC Modified	
2	EPA 900.0/SW846 9310	
3	EPA 900.0/SW846 9310	
4	DOE EML HASL-300, Tc-02-RC Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Uranium-232 Tracer	Alphaspec U, Liquid "As Received"			33.6	(15%-125%)
Technetium-99m Tracer	Liquid Scint Tc99, Liquid "As Received"			94.2	(15%-125%)

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QC Summary

Report Date: March 27, 2012
Page 1 of 5

Westinghouse Electric Company, LLC
PO Drawer R
Columbia, South Carolina
Contact: Ms. Cynthia Logsdon
Workorder: 297573

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Alpha Spec											
Batch	1196417										
QC1202618168	297573001	DUP									
Uranium-233/234				330	pCi/g	18.9		(0% - 20%)	NXP2	03/19/12	14:43
			Uncertainty	+/-7.57		+/-8.30					
Uranium-235/236				16.0	pCi/g	22.9*		(0% - 20%)			
Uranium-238			Uncertainty	+/-1.85		+/-2.08					
				62.0	pCi/g	16.0		(0% - 20%)			
QC1202618170	LCS		Uncertainty	+/-3.28		+/-3.55					
Uranium-233/234					5.53	pCi/g				03/19/12	14:43
Uranium-235/236			Uncertainty		+/-0.575						
Uranium-238			Uncertainty		0.211	pCi/g					
					+/-0.125						
QC1202618167	MB		Uncertainty		5.14	pCi/g	107	(75%-125%)			
Uranium-233/234					5.49						
Uranium-235/236			Uncertainty		+/-0.573						
Uranium-238			Uncertainty								
QC1202618169	297573001	MS									
Uranium-233/234				330	pCi/g					03/19/12	14:43
			Uncertainty	+/-7.57		+/-10.3					
Uranium-235/236				16.0	pCi/g						
Uranium-238			Uncertainty	+/-1.85		+/-2.36					
				5.19	pCi/g		N/A	(75%-125%)			
Batch	1198261		Uncertainty	+/-3.28		+/-4.64					
QC1202622441	297573006	DUP									
Uranium-233/234				81500	pCi/L	0.813		(0% - 20%)	DXM2	03/23/12	14:53
			Uncertainty	+/-1030		+/-1600					
Uranium-235/236				3820	pCi/L	9.13		(0% - 20%)			
Uranium-238			Uncertainty	+/-248		+/-367					
				12800	pCi/L	3.57		(0% - 20%)			
QC1202622443	LCS		Uncertainty	+/-409		+/-644					
Uranium-233/234					506	pCi/L				03/23/12	14:53
Uranium-235/236			Uncertainty		+/-50.3						
Uranium-238			Uncertainty		28.9	pCi/L					
					+/-13.4						
				519	pCi/L	109	(75%-125%)				
					565						

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QC Summary

Workorder: 297573

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Paramname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Alpha Spec											
Batch	1198261										
QC1202622440	MB	Uncertainty			+/-53.1						
Uranium-233/234					56.6	pCi/L				DXM2	03/23/12 14:53
Uranium-235/236		Uncertainty			+/-16.8						
Uranium-238		Uncertainty	U		1.60	pCi/L					
QC1202622442	297573006 MS	Uncertainty			+/-3.14						
Uranium-233/234					43.4	pCi/L					
Uranium-235/236		Uncertainty			+/-14.8						
Uranium-238		Uncertainty									
QC1202617624	297313001 DUP										
Alpha		U	2.02	U	1.13	pCi/L	0.00			N/A	DXF3 03/15/12 19:53
Beta		Uncertainty	+/-2.18		+/-1.99						
QC1202617627	LCS	U	1.45	U	4.93	pCi/L	0.00			N/A	
Alpha		Uncertainty	+/-1.81		+/-3.19						
Beta											
QC1202617623	MB	120			114	pCi/L		95.1	(75%-125%)		03/15/12 19:53
Alpha		Uncertainty			+/-12.1						
Beta		505			520	pCi/L		103	(75%-125%)		
QC1202617625	297313001 MS	Uncertainty			+/-18.3						
Alpha		U	2.02								
Beta		Uncertainty	+/-2.18								
QC1202617626	297313001 MSD	U	1.45								
Alpha		Uncertainty	+/-1.81								
Beta											
Batch	1197649										
QC1202620950	297573003 DUP										
Alpha		358			394	pCi/g	9.46			(0% - 20%)	DXF3 03/22/12 14:26

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QC Summary

Workorder: 297573

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gas Flow											
Batch	1197649										
Beta		Uncertainty		+/-23.3		+/-26.2					
				121		118	pCi/g	1.91	(0% - 20%)	DXF3	03/22/12 14:26
QC1202620953	LCS	Uncertainty		+/-8.65		+/-8.36					
Alpha		100				102	pCi/g	102	(75%-125%)		03/22/12 14:26
Beta		Uncertainty		+/-10.4							
		420				410	pCi/g	97.5	(75%-125%)		
QC1202620949	MB	Uncertainty		+/-14.3							
Alpha			U	0.518	pCi/g						03/22/12 14:26
Beta		Uncertainty		+/-1.00							
			U	0.793	pCi/g						
QC1202620951	297573003	MS	Uncertainty	+/-2.25							
Alpha		105		358		380	pCi/g	21.3*	(75%-125%)		03/22/12 14:26
Beta		Uncertainty		+/-23.3		+/-24.3					
		439		121		580	pCi/g	105	(75%-125%)		
QC1202620952	297573003	MSD	Uncertainty	+/-8.65		+/-18.3					
Alpha		107		358		437	pCi/g	13.9	73.6*	(0%-20%)	03/22/12 14:26
Beta		Uncertainty		+/-23.3		+/-25.2					
		450		121		527	pCi/g	9.74	90.1	(0%-20%)	
Beta		Uncertainty		+/-8.65		+/-17.6					
Rad Liquid Scintillation											
Batch	1196372										
QC1202618068	297573006	DUP									
Technetium-99		U	-42	U		-117	pCi/L	0.00		N/AMYM1	03/20/12 08:38
		Uncertainty	+/-121			+/-120					
QC1202618070	LCS										
Technetium-99		5940				5610	pCi/L	94.4	(75%-125%)		03/20/12 09:11
		Uncertainty	+/-265								
QC1202618067	MB										
Technetium-99			U			-84.4	pCi/L				03/20/12 08:22
		Uncertainty	+/-138								
QC1202618069	297573006	MS									
Technetium-99		5940	U	-42		5500	pCi/L	92.7	(75%-125%)		03/20/12 08:55
Batch	1196375	Uncertainty	+/-121			+/-271					
QC1202618079	297573001	DUP									
Technetium-99		U	-0.934	U		-1.5	pCi/g	0.00		N/AMYM1	03/20/12 09:43
		Uncertainty	+/-1.60			+/-1.44					
QC1202618081	LCS										
Technetium-99		54.6				53.7	pCi/g	98.3	(75%-125%)		03/20/12 10:15
		Uncertainty	+/-2.60								
QC1202618078	MB										
Technetium-99			U			0.206	pCi/g				03/20/12 16:06

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QC Summary

Workorder: 297573

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Paramname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Liquid Scintillation Batch	1196375										
		Uncertainty			+/-1.05						
QC1202618080	297573001	MS									
Technetium-99			71.3	U	-0.934	67.7	pCi/g	94.9	(75%-125%)	MYM1	03/20/12 09:59
		Uncertainty			+/-1.60	+/-3.32					

Notes:

The Qualifiers in this report are defined as follows:

- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- E General Chemistry--Concentration of the target analyte exceeds the instrument calibration range
- F Estimated Value
- H Analytical holding time was exceeded
- J Value is estimated
- K Analyte present. Reported value may be biased high. Actual value is expected to be lower.
- L Analyte present. Reported value may be biased low. Actual value is expected to be higher.
- M M if above MDC and less than LLD
- M Matrix Related Failure
- N/A RPD or %Recovery limits do not apply.
- N1 See case narrative
- ND Analyte concentration is not detected above the detection limit
- NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Q One or more quality control criteria have not been met. Refer to the applicable narrative or DER.
- R Sample results are rejected
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
- UI Gamma Spectroscopy--Uncertain identification
- UJ Gamma Spectroscopy--Uncertain identification
- UL Not considered detected. The associated number is the reported concentration, which may be inaccurate due to a low bias.
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y QC Samples were not spiked with this compound

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QC Summary

Workorder: 297573

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
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Z Paint Filter Test--Particulates passed through the filter, however no free liquids were observed.

^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.

d 5-day BOD--The 2:1 depletion requirement was not met for this sample

h Preparation or preservation holding time was exceeded

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more.

[^] The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

* Indicates that a Quality Control parameter was not within specifications.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

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

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Certificate of Analysis

Report Date: March 27, 2012

Company : Westinghouse Electric Company, LLC
Address : PO Drawer R

Contact: Columbia, South Carolina 29205
Project: Ms. Cynthia Logsdon
Project: Radiochemistry - PO 4500385556

Client Sample ID:	Hole #1 Soil	Project:	WNUC00118
Sample ID:	297573001	Client ID:	WNUC001
Matrix:	Soil		
Collect Date:	08-MAR-12 11:42		
Receive Date:	14-MAR-12		
Collector:	Client		
Moisture:	17.8%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography											
EPA300.0 Fluoride in Soil "Dry Weight Corrected"											
Fluoride		46.6	0.363	1.21	mg/kg	1	MARI	03/20/12	1540	1196181	1
The following Prep Methods were performed:											
Method	Description		Analyst	Date	Time	Prep	Batch				
EPA 300.0 PREP	EPA 300.0 Total Anions in Soil		MARI	03/20/12	1310		1196180				
The following Analytical Methods were performed:											
Method	Description					Analyst	Comments				
1	EPA 300.0										

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Certificate of Analysis

Report Date: March 27, 2012

Company : Westinghouse Electric Company, LLC
Address : PO Drawer R

Contact: Columbia, South Carolina 29205
Project: Ms. Cynthia Logsdon
Project: Radiochemistry - PO 4500385556

Client Sample ID: Hole #2 Soil Project: WNUC00118
Sample ID: 297573002 Client ID: WNUC001
Matrix: Soil
Collect Date: 08-MAR-12 14:20
Receive Date: 14-MAR-12
Collector: Client
Moisture: 13.2%

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography											
EPA300.0 Fluoride in Soil "Dry Weight Corrected"											
Fluoride		6.66	0.341	1.14	mg/kg	1	MARI	03/20/12	1735	1196181	1
The following Prep Methods were performed:											
Method	Description			Analyst	Date	Time	Prep	Batch			
EPA 300.0 PREP	EPA 300.0 Total Anions in Soil			MARI	03/20/12	1310		1196180			
The following Analytical Methods were performed:											
Method	Description				Analyst	Comments					
1	EPA 300.0										

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Certificate of Analysis

Report Date: March 27, 2012

Company : Westinghouse Electric Company, LLC
Address : PO Drawer R

Contact: Columbia, South Carolina 29205
Project: Ms. Cynthia Logsdon
Project: Radiochemistry - PO 4500385556

Client Sample ID:	Hole #3 Soil	Project:	WNUC00118
Sample ID:	297573003	Client ID:	WNUC001
Matrix:	Soil		
Collect Date:	09-MAR-12 13:30		
Receive Date:	14-MAR-12		
Collector:	Client		
Moisture:	19.7%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
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Ion Chromatography

EPA300.0 Fluoride in Soil "Dry Weight Corrected"

Fluoride	32.3	0.372	1.24	mg/kg	I	MARI	03/20/12	1804	1196181	1
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The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
EPA 300.0 PREP	EPA 300.0 Total Anions in Soil	MARI	03/20/12	1310	1196180

The following Analytical Methods were performed:

Method	Description	Analyst	Comments
I	EPA 300.0		

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Certificate of Analysis

Report Date: March 27, 2012

Company : Westinghouse Electric Company, LLC
Address : PO Drawer R

Contact: Columbia, South Carolina 29205
Project: Ms. Cynthia Logsdon
Project: Radiochemistry - PO 4500385556

Client Sample ID: Hole #3 Sludge Project: WNUC00118
Sample ID: 297573004 Client ID: WNUC001
Matrix: Sludge
Collect Date: 09-MAR-12 14:15
Receive Date: 14-MAR-12
Collector: Client
Moisture: 23.6%

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography											
EPA300.0 Fluoride in Soil "Dry Weight Corrected"											
Fluoride		85.5		0.393	1.31	mg/kg		1	MARI	03/20/12	1833 1196181 1

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
EPA 300.0 PREP	EPA 300.0 Total Anions in Soil	MARI	03/20/12	1310	1196180

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 300.0	

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Certificate of Analysis

Report Date: March 27, 2012

Company : Westinghouse Electric Company, LLC
Address : PO Drawer R

Contact: Columbia, South Carolina 29205
Project: Ms. Cynthia Logsdon
Project: Radiochemistry - PO 4500385556

Client Sample ID:	Hole #4 Soil	Project:	WNUC00118
Sample ID:	297573005	Client ID:	WNUC001
Matrix:	Soil		
Collect Date:	12-MAR-12 14:40		
Receive Date:	14-MAR-12		
Collector:	Client		
Moisture:	22.2%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method							
Ion Chromatography																		
EPA300.0 Fluoride in Soil "Dry Weight Corrected"																		
Fluoride 36.5																		
0.386 1.29 mg/kg I MARI 03/20/12 1902 1196181 1																		
The following Prep Methods were performed:																		
Method	Description	Analyst	Date	Time	Prep Batch													
EPA 300.0 PREP	EPA 300.0 Total Anions in Soil	MARI	03/20/12	1310	1196180													
The following Analytical Methods were performed:																		
Method	Description	Analyst	Comments															
1	EPA 300.0																	

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Certificate of Analysis

Report Date: March 27, 2012

Company : Westinghouse Electric Company, LLC
Address : PO Drawer R

Contact: Columbia, South Carolina 29205
Project: Ms. Cynthia Logsdon
Project: Radiochemistry - PO 4500385556

Client Sample ID: Hole #4 Water Project: WNUC00118
Sample ID: 297573007 Client ID: WNUC001
Matrix: Water
Collect Date: 13-MAR-12 09:00
Receive Date: 14-MAR-12
Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography											
EPA 300.0 Nitrate in Liquid "As Received"											
Nitrate-N 1.96											
0.033 0.100 mg/L 1 MARI 03/14/12 1219 1196171 1											
The following Analytical Methods were performed:											
Method	Description				Analyst Comments						
1	EPA 300.0										

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

QC Summary

Report Date: March 27, 2012
Page 1 of 2

Westinghouse Electric Company, LLC
PO Drawer R
Columbia, South Carolina
Contact: Ms. Cynthia Logsdon
Workorder: 297573

Paramname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Ion Chromatography											
Batch	1196171										
QC1202617648	297573007	DUP									
Nitrate-N				1.96		1.95		mg/L	0.389		(0%-20%)
QC1202617650	LCS								MAR1	03/14/12	12:46
Nitrate-N			5.00			4.94		mg/L	98.7		(90%-110%)
QC1202617647	MB					U		mg/L			03/14/12 11:52
Nitrate-N						ND		mg/L			03/14/12 11:25
QC1202617649	297573007	PS									
Nitrate-N			5.00	1.96		7.13		mg/L	103		(90%-110%)
Batch	1196181								MAR1	03/14/12	13:12
QC1202617671	297573001	DUP									
Fluoride				46.6		46.3		mg/kg	0.506		(0%-20%)
QC1202617674	LCS								MAR1	03/20/12	16:09
Fluoride			50.0			50.1		mg/kg	100		(90%-110%)
QC1202617670	MB					U		mg/kg			03/20/12 15:11
Fluoride						ND		mg/kg			03/20/12 14:42
QC1202617672	297573001	MS									
Fluoride			60.4	46.6		101		mg/kg	90.1		(90%-110%)
QC1202617673	297573001	MSD							MAR1	03/20/12	16:37
Fluoride			60.5	46.6		101		mg/kg	0.361		(0%-20%)
									MAR1	03/20/12	17:06

Notes:

The Qualifiers in this report are defined as follows:

- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- E General Chemistry--Concentration of the target analyte exceeds the instrument calibration range
- F Estimated Value
- H Analytical holding time was exceeded
- J Value is estimated
- K Analyte present. Reported value may be biased high. Actual value is expected to be lower.
- L Analyte present. Reported value may be biased low. Actual value is expected to be higher.
- M M if above MDC and less than LLD

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

QC Summary

Workorder: 297573

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
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- M Matrix Related Failure
- N/A RPD or %Recovery limits do not apply.
- N1 See case narrative
- ND Analyte concentration is not detected above the detection limit
- NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Q One or more quality control criteria have not been met. Refer to the applicable narrative or DER.
- R Sample results are rejected
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
- UI Gamma Spectroscopy--Uncertain identification
- UJ Gamma Spectroscopy--Uncertain identification
- UL Not considered detected. The associated number is the reported concentration, which may be inaccurate due to a low bias.
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y QC Samples were not spiked with this compound
- Z Paint Filter Test--Particulates passed through the filter, however no free liquids were observed.
- ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
- d 5-day BOD--The 2:1 depletion requirement was not met for this sample
- h Preparation or preservation holding time was exceeded

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more.

[^]The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

* Indicates that a Quality Control parameter was not within specifications.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

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

DATA EXCEPTION REPORT			
Mo.Day Yr. 27-MAR-12	Division: Radiochemistry	Quality Criteria: Specifications	Type: Process
Instrument Type: ALPHA SPECTROMETER	Test / Method: DOE EML HASL-300, U-02-RC Modified	Matrix Type: Liquid	Client Code: WNUC
Batch ID: 1198261	Sample Numbers: See Below		
Potentially affected work order(s)(SDG): 297573			
Application Issues: Peak Centroid Values Off			
Specification and Requirements Exception Description:		DER Disposition:	
1. The U-232 tracer for the Matrix Spike 1202622442(Hole #4 Water) is greater than 50 keV from the expected value of 5302 keV.		1. The tracer yield does meet the recovery requirements and the peaks are within their respective regions of interest. Reporting results.	

Originator's Name:

Jessica Downey 27-MAR-12

Data Validator/Group Leader:

Jessica Downey 27-MAR-12

List of current GEL Certifications as of 27 March 2012

State	Certification
Arizona	AZ0766
Arkansas	88-0651
CLIA	42D0904046
California NELAP	01151CA
Colorado	SC00012
Connecticut	PH-0169
Delaware	SC00012
DoD ELAP A2LA ISO 17025	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330-09-00191
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC00012
Idaho	SC00012
Illinois NELAP	200029
Indiana	C-SC-01
Kansas NELAP	E-10332
Kentucky	90129
Louisiana NELAP	03046 (AI33904)
Louisiana SDWA	LA120008
Maryland	270
Massachusetts	M-SC012
Mississippi	SC00012
Nevada	SC000122011-1
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
Oklahoma	9904
Pennsylvania NELAP	68-00485
South Carolina Chemistry	10120001
South Carolina Radiochemi	10120002
Tennessee	TN 02934
Texas NELAP	T104704235-12-7
Utah NELAP	SC00012
Vermont	VT87156
Virginia NELAP	460202
Washington	C780
Wisconsin	999887790

Attachment 2

Well	Sample Date	Tetrachloro-ethene ug/L	Trichloro-ethene Ug/L	cis-1,2-dichloro-ethene Ug/L	Vinyl Chloride Ug/L	Fluoride mg/L	NH3(N) mg/L	NO3 mg/L	Gross Alpha pCi/L	Gross Beta pCi/L
		MCL=5	MCL=5	MCL=70	MCL=2	MCL=4		MCL=10	action level = 15	action level = 50
W28	Mar-04	NA	NA	NA	NA	NS	NS	NS	NS	NS
	Jun-04	NA	NA	NA	NA	7.28	<1.00	NA	NA	NA
	Sep-04	NA	NA	NA	NA	7.60	<1.00	NA	NA	NA
	Dec-04	NA	NA	NA	NA	10.56	<1.00	NA	NA	NA
W28	Jun-05	NA	NA	NA	NA	NS	NS	NS	NS	NS
	Dec-05	NA	NA	NA	NA	NS	NS	NS	NS	NS
W28	Jun-06	NA	NA	NA	NA	NS	NS	NS	NS	NS
	Dec-06	NA	NA	NA	NA	NS	NS	NS	NS	NS
W28	Jun-07	NA	NA	NA	NA	NS	NS	NS	NS	NS
	Dec-07	NA	NA	NA	NA	NS	NS	NS	NS	NS
W28	Mar-08	NA	NA	NA	NA	NA	NA	16.10	10.80	9.92
	Jun-08	NA	NA	NA	NA	NA	NA	6.82	1.22	0.00
	Sep-08	NA	NA	NA	NA	NA	NA	7.03	3.29	10.80
	Dec-08	<1.0	<1.0	<1.0	<2.0	7.20	<1.00	9.10	4.20	8.99
W28	Mar-09	NA	NA	NA	NA	12.50	<1.00	4.93	3.65	6.21
	Jun-09	NA	NA	NA	NA	6.35	<1.00	9.82	6.15	8.87
	Sep-09	NA	NA	NA	NA	14.05	2.50	2.69	9.69	10.00
	Dec-09	NA	NA	NA	NA	9.45	<1.00	NA	2.36	7.13
W28	Mar-10	NA	NA	NA	NA	12.20	<1.00	NA	NA	NA
	Jun-10	NA	NA	NA	NA	NA	<1.00	5.90	8.26	9.33
	Sep-10	NA	NA	NA	NA	23.00	5.00	1.80	18.80	15.80
	Dec-10	NA	NA	NA	NA	16.40	2.00	9.60	4.56	11.80
W28	Apr-11	NA	NA	NA	NA	4.00	<1.00	<20.00	6.89	13.80
	Jun-11	NA	NA	NA	NA	26.05	5.00	3.80	7.71	10.70
	Sep-11	NA	NA	NA	NA	12.00	<1.00	13.00	14.60	18.70
	Dec-11	NA	NA	NA	NA	6.15	<1.00	5.90	25.00	119.00
W28	Mar-12	NA	NA	NA	NA	6.30	0.81	9.80	21.30	105.00
	Jun-12	NA	NA	NA	NA	5.55	<1.00	13.00	27.40	66.40
	Sep-12	NA	NA	NA	NA	6.85	20.60	8.50	16.40	31.10
	Dec-12	NA	NA	NA	NA	7.00	<1.00	3.60	19.00	47.40
W28	Mar-13	NA	NA	NA	NA	5.85	<1.00	4.70	14.70	26.70

Attachment 2

Well	Sample Date	Tetrachloro-ethene ug/L	Trichloro-ethene Ug/L	cis-1,2-dichloro-ethene Ug/L	Vinyl Chloride Ug/L	Fluoride mg/L	NH3(N) mg/L	NO3 mg/L	Gross Alpha pCi/L	Gross Beta pCi/L
		MCL=5	MCL=5	MCL=70	MCL=2	MCL=4		MCL=10	action level = 15	action level = 50
	Jun-13	NA	NA	NA	NA	4.02	<1.00	5.00	11.40	22.60
	Oct-13	NA	NA	NA	NA	7.75	<1.00	3.50	18.70	33.50
W28	Jan-14	NA	NA	NA	NA	6.80	<1.00	5.30	11.60	27.60
	Apr-14	NA	NA	NA	NA	8.55	<1.00	2.50	9.25	63.30
	July-14	NA	NA	NA	NA	7.35	<1.00	5.40	13.00	33.20
	Oct-14	NA	NA	NA	NA	5.70	1.53	1.70	2.60	90.00
W28	Jan-15	NA	NA	NA	NA	5.35	1.76	1.40	13.35	43.40
	Apr-15	NA	NA	NA	NA	6.00	1.11	5.10	3.15	33.90
	July-15	NA	NA	NA	NA	6.00	1.10	5.20	3.93	19.90
	Oct-15	NA	NA	NA	NA	5.65	<1.00	5.30	4.19	14.10
W28	Jan-16	NA	NA	NA	NA	6.25	1.46	3.50	0.00	15.40
	Apr-16	NA	NA	NA	NA	5.90	1.61	1.70	5.52	17.70
	July-16	NA	NA	NA	NA	5.95	1.51	2.40	NA	NA
	Oct-16	NA	NA	NA	NA	5.75	<1.00	3.6	NA	NA
W28	Jan-17	NA	NA	NA	NA	5.80	<1.00	6.3	NA	NA
	Apr-17	NA	NA	NA	NA	5.95	<1.00	5.7	NA	NA
	July-17	NA	NA	NA	NA	5.95	1.63	6.7	NA	NA
	Oct-17	NA	NA	NA	NA					
W29	Mar-04	NA	NA	NA	NA	NS	NS	NS	NS	NS
	Jun-04	NA	NA	NA	NA	6.96	<1.00	NA	NA	NA
	Sep-04	NA	NA	NA	NA	7.10	4.80	NA	NA	NA
	Dec-04	NA	NA	NA	NA	9.60	9.35	27.70	2.00	7.00
W29	Jun-05	NA	NA	NA	NA	7.00	6.80	18.50	4.00	9.00
	Dec-05	NA	NA	NA	NA	9.40	9.10	37.50	4.00	19.00
W29	Jun-06	NA	NA	NA	NA	7.00	12.20	28.70	2.00	12.00
	Dec-06	NA	NA	NA	NA	7.90	6.80	37.40	2.00	12.00
W29	Jun-07	NA	NA	NA	NA	6.00	7.50	35.20	1.00	15.00
	Dec-07	NA	NA	NA	NA	7.00	6.40	23.50	1.00	15.00
W29	Mar-08	NA	NA	NA	NA	NA	NA	31.70	2.42	21.20
	Jun-08	NA	NA	NA	NA	4.30	6.90	32.40	2.52	19.40
	Sep-08	NA	NA	NA	NA	NA	NA	26.00	3.65	15.60

Attachment 2

Well	Sample Date	Tetrachloro-ethene ug/L	Trichloro-ethene Ug/L	cis-1,2-dichloro-ethene Ug/L	Vinyl Chloride Ug/L	Fluoride mg/L	NH3(N) mg/L	NO3 mg/L	Gross Alpha pCi/L	Gross Beta pCi/L
		MCL=5	MCL=5	MCL=70	MCL=2	MCL=4		MCL=10	action level = 15	action level = 50
	Dec-08	1.80	<1.0	<1.0	<2.0	6.50	6.40	20.90	0.24	17.40
W29	Mar-09	NA	NA	NA	NA	6.45	9.26	25.00	2.49	9.07
	Jun-09	NA	NA	NA	NA	6.70	3.00	28.60	1.37	12.30
	Sep-09	NA	NA	NA	NA	6.80	11.70	21.20	2.64	17.20
	Dec-09	NA	NA	NA	NA	6.40	7.00	26.00	4.64	1.33
W29	Mar-10	NA	NA	NA	NA	5.10	11.00	NA	NA	NA
	Jun-10	NA	NA	NA	NA	6.80	7.00	13.00	2.73	10.30
	Sep-10	NA	NA	NA	NA	7.10	8.00	20.00	7.30	9.51
	Dec-10	NA	NA	NA	NA	6.25	7.00	13.00	1.29	6.00
W29	Apr-11	NA	NA	NA	NA	5.45	9.00	<20.00	1.35	8.33
	Jun-11	NA	NA	NA	NA	4.40	7.00	18.00	3.41	5.38
	Sep-11	NA	NA	NA	NA	4.50	3.00	28.00	3.82	9.78
	Dec-11	NA	NA	NA	NA	4.94	8.50	17.00	7.10	8.30
W29	Mar-12	NA	NA	NA	NA	3.95	18.70	690.00	10.10	97.60
	Jun-12	NA	NA	NA	NA	3.87	36.30	790.00	6.07	101.00
	Sep-12	NA	NA	NA	NA	4.03	5.02	840.00	4.81	78.20
	Dec-12	NA	NA	NA	NA	4.10	38.20	450.00	7.22	50.90
W29	Mar-13	NA	NA	NA	NA	4.06	25.20	980.00	12.70	94.40
	Jun-13	NA	NA	NA	NA	3.89	20.70	440.00	6.42	67.60
	Oct-13	NA	NA	NA	NA	4.44	19.70	170.00	6.94	32.10
W29	Jan-14	NA	NA	NA	NA	5.00	12.60	97.00	0.00	13.10
	Apr-14	NA	NA	NA	NA	4.90	10.20	70.00	3.78	11.40
	July-14	NA	NA	NA	NA	5.80	16.20	78.00	6.11	10.40
	Oct-14	NA	NA	NA	NA	6.05	15.30	72.00	1.54	10.80
	Jan-15	NA	NA	NA	NA	5.75	16.00	66.00	4.92	11.00
	Apr-15	NA	NA	NA	NA	6.30	17.90	64.00	5.36	10.20
	July-15	NA	NA	NA	NA	6.95	25.20	58.00	6.09	8.79
W29	Oct-15	NA	NA	NA	NA	8.85	22.70	51.00	4.89	11.50
	Jan-16	NA	NA	NA	NA	8.10	24.50	53.00	1.56	6.22
	Apr-16	NA	NA	NA	NA	7.35	26.90	40.00	4.41	8.41
	July-16	NA	NA	NA	NA	6.95	23.40	37.00	4.63	8.46

Attachment 2

Well	Sample Date	Tetrachloro-ethene ug/L	Trichloro-ethene Ug/L	cis-1,2-dichloro-ethene Ug/L	Vinyl Chloride Ug/L	Fluoride mg/L	NH3(N) mg/L	NO3 mg/L	Gross Alpha pCi/L	Gross Beta pCi/L
		MCL=5	MCL=5	MCL=70	MCL=2	MCL=4		MCL=10	action level = 15	action level = 50
	Oct-16	NA	NA	NA	NA	5.8	22.9	39	3.79	9.79
W29	Jan-17	NA	NA	NA	NA	6.10	20.5	36	11.20	4.94
	Apr-17	NA	NA	NA	NA	5.25	22.5	32	3.89	0.947
	July-17	NA	NA	NA	NA	6.6	21.5	29	9.80	9.68
	Oct-17	NA	NA	NA	NA					
W30	Mar-04	NA	NA	NA	NA	NS	NS	NS	NS	NS
	Jun-04	NA	NA	NA	NA	23.96	31.90	NA	NA	NA
	Sep-04	NA	NA	NA	NA	20.80	35.90	NA	NA	NA
	Dec-04	NA	NA	NA	NA	19.24	32.60	380.00	21.00	64.00
W30	Jun-05	NA	NA	NA	NA	10.00	30.60	521.00	45.00	61.00
	Dec-05	NA	NA	NA	NA	15.60	<1.00	476.00	35.00	64.00
W30	Jun-06	NA	NA	NA	NA	12.30	35.90	296.00	28.00	132.00
	Dec-06	NA	NA	NA	NA	17.30	6.30	3.30	3.00	98.00
W30	Jun-07	NA	NA	NA	NA	17.70	5.80	359.00	8.00	66.00
	Dec-07	NA	NA	NA	NA	23.40	4.10	197.00	11.00	29.00
W30	Mar-08	NA	NA	NA	NA	NA	NA	189.00	13.50	45.00
	Jun-08	NA	NA	NA	NA	10.00	3.50	419.00	51.20	121.00
	Sep-08	NA	NA	NA	NA	NA	NA	187.00	15.60	61.50
	Dec-08	3.30	<1.0	<1.0	<2.0	27.60	2.30	133.00	10.00	70.00
W30	Mar-09	NA	NA	NA	NA	20.10	1.74	95.80	12.20	24.30
	Jun-09	NA	NA	NA	NA	29.50	9.00	194.00	10.30	36.50
	Sep-09	NA	NA	NA	NA	28.65	7.40	87.60	19.30	44.60
	Dec-09	NA	NA	NA	NA	27.50	3.00	120.00	13.10	51.70
W30	Mar-10	NA	NA	NA	NA	37.30	4.00	NA	NA	NA
	Jun-10	NA	NA	NA	NA	30.10	6.00	83.00	12.90	34.90
	Sep-10	NA	NA	NA	NA	16.10	4.00	180.00	26.00	66.60
	Dec-10	NA	NA	NA	NA	12.50	4.00	150.00	9.52	39.20
W30	Apr-11	NA	NA	NA	NA	11.85	5.00	<20.00	9.32	37.30
	Jun-11	NA	NA	NA	NA	11.00	2.00	110.00	10.50	46.90
	Sep-11	NA	NA	NA	NA	5.00	53.00	230.00	18.90	45.80
	Dec-11	NA	NA	NA	NA	12.15	3.50	2,900.00	26.10	80.20

Attachment 2

Well	Sample Date	Tetrachloro-ethene ug/L	Trichloro-ethene Ug/L	cis-1,2-dichloro-ethene Ug/L	Vinyl Chloride Ug/L	Fluoride mg/L	NH3(N) mg/L	NO3 mg/L	Gross Alpha pCi/L	Gross Beta pCi/L
		MCL=5	MCL=5	MCL=70	MCL=2	MCL=4		MCL=10	action level = 15	action level = 50
W30	Mar-12	NA	NA	NA	NA	13.90	12.40	1,800.00	11.10	117.00
	Jun-12	NA	NA	NA	NA	12.50	8.11	620.00	20.80	77.80
	Sep-12	NA	NA	NA	NA	13.10	60.60	540.00	17.40	56.60
	Dec-12	NA	NA	NA	NA	14.30	10.10	1,000.00	45.10	135.00
W30	Mar-13	NA	NA	NA	NA	13.20	4.09	660.00	18.80	102.00
	Jun-13	NA	NA	NA	NA	12.70	2.78	300.00	13.30	45.70
	Oct-13	NA	NA	NA	NA	16.60	<1.00	140.00	18.80	53.70
W30	Jan-14	NA	NA	NA	NA	12.60	1.50	100.00	18.50	42.30
	Apr-14	NA	NA	NA	NA	11.30	<1.00	36.00	24.30	33.20
	July-14	NA	NA	NA	NA	11.50	<1.00	40.00	48.10	60.40
	Oct-14	NA	NA	NA	NA	11.50	<1.00	46.00	44.60	46.10
	Jan-15	NA	NA	NA	NA	11.30	1.32	78.00	24.30	34.40
	Apr-15	NA	NA	NA	NA	10.80	<1.00	42.00	24.30	36.00
	July-15	NA	NA	NA	NA	9.65	1.29	69.00	12.20	21.70
W30	Oct-15	NA	NA	NA	NA	10.70	1.40	130.00	12.90	21.40
	Jan-16	NA	NA	NA	NA	9.15	<1.00	71.00	27.80	41.25
	Apr-16	NA	NA	NA	NA	8.85	<1.00	44.00	39.65	41.80
	July-16	NA	NA	NA	NA	9.65	<1.00	44.00	33.45	40.05
	Oct-16	NA	NA	NA	NA	9.88	<1.00	34	43.25	38.33
W30	Jan-17	NA	NA	NA	NA	9.45	<1.00	34	58.20	28.30
	Apr-17	NA	NA	NA	NA	7.70	1.25	81	35.60	32.25
	July-17	NA	NA	NA	NA	7.75	1.44	85	59.55	38.50
	Oct-17	NA	NA	NA	NA					
W35	Mar-04	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Jun-04	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Sep-04	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-04	NS	NS	NS	NS	NS	NS	NS	NS	NS
W35	Jun-05	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-05	NS	NS	NS	NS	NS	NS	NS	NS	NS
W35	Jun-06	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-06	NS	NS	NS	NS	NS	NS	NS	NS	NS

Attachment 2

Well	Sample Date	Tetrachloro-ethene ug/L	Trichloro-ethene Ug/L	cis-1,2-dichloro-ethene Ug/L	Vinyl Chloride Ug/L	Fluoride mg/L	NH3(N) mg/L	NO3 mg/L	Gross Alpha pCi/L	Gross Beta pCi/L
		MCL=5	MCL=5	MCL=70	MCL=2	MCL=4		MCL=10	action level = 15	action level = 50
W35	Jun-07 Dec-07	NS NS	NS NS	NS NS	NS NS	NS NS	NS NS	NS NS	NS NS	NS NS
W35	Mar-08 Jun-08 Sep-08 Dec-08	NS NS NS NS	NS NS NS NS	NS NS NS NS	NS NS NS NS	NS NS NS NS	NS NS NS NS	NS NS NS NS	NS NS NS NS	NS NS NS NS
W35	Mar-09 Jun-09 Sep-09 Dec-09	NS NS NS NS	NS NS NS NS	NS NS NS NS	NS NS NS NS	NS NS NS NS	NS NS NS NS	NS NS NS NS	NS NS NS NS	NS NS NS NS
W35	Mar-10 Jun-10 Sep-10 Dec-10	NS NS NS NS	NS NS NS NS	NS NS NS NS	NS NS NS NS	NS NS NS NS	NS NS NS NS	NS NS NS NS	NS NS NS NS	NS NS NS NS
W35	Apr-11 Jun-11 Sep-11 Dec-11	NA NA NA NA	NA NA NA NA	NA NA NA NA	<0.50 <0.50 <0.50 0.02	<1.00 <1.00 <1.00 <1.00	0.41 0.30 0.57 0.55	NA 2.22 1.73 1.65	NA 8.30 2.88 3.97	NA 2.64 2.88 7.95
W35	Mar-12 Jun-12 Sep-12 Dec-12	NA NA NA NA	NA NA NA NA	NA NA NA NA	<0.50 NS NS <0.50	<1.00 NS NS 1.20	0.60 NS NS 0.12	1.13 NS NS 4.30	2.64 8.30 2.88 7.95	2.64 NS NS NS
W35	Mar-13 Jun-13 Oct-13	NA NA NA	NA NA NA	NA NA NA	NS NS NS	NS NS NS	NS NS NS	NS NS NS	NS NS NS	NS NS NS
W35	Jan-14 Apr-14 July-14 Oct-14	NA NA NA NA	NA NA NA NA	NA NA NA NA	NS NS NS NS	NS NS NS NS	NS NS NS NS	NS NS NS NS	NS NS NS NS	NS NS NS NS
W35	Jan-15 Apr-15	NA NA	NA NA	NA NA	NA NA	NS NS	NS NS	NS NS	NS NS	NS NS

Attachment 2

Well	Sample Date	Tetrachloro-ethene ug/L	Trichloro-ethene Ug/L	cis-1,2-dichloro-ethene Ug/L	Vinyl Chloride Ug/L	Fluoride mg/L	NH3(N) mg/L	NO3 mg/L	Gross Alpha pCi/L	Gross Beta pCi/L
		MCL=5	MCL=5	MCL=70	MCL=2	MCL=4		MCL=10	action level = 15	action level = 50
	July-15 Oct-15	NA NA	NA NA	NA NA	NA NS	NS	NS	NS	NS NS	NS NS
W35	Jan-16 Apr-16 July-16 Oct-16	NA NA NA NA	NA NA NA NA	NA NA NA NA	NS NS NS NS	NS	NS	NS	NS NS NS NS	NS NS NS NS
W35	Jan-17 Apr-17 July-17 Oct-17	NA NA NA NA	NA NA NA NA	NA NA NA NA	NS NS NS NS	NS	NS	NS	NS NS NS NS	NS NS NS NS
W37	Feb-Mar-04 Jun-04 Sep-04 Dec-04	<1.0 NA NA <1.0	<1.0 NA NA <1.0	<1.0 NA NA <1.0	<2.0 NA NA <2.0	NA <0.40 <0.40 <0.40	NA <1.00 <1.00 <1.00	NA	NA NA NA NA	NA NA NA NA
W37	Jun-05 Dec-05	NS NS	NS NS	NS NS	NS	NS	NS	NS	NS NS	NS NS
W37	Jun-06 Dec-06	<1.0 NS	<1.0 NS	<1.0 NS	<2.0 NS	NS	NS	NS	NS NS	NS NS
W37	Jun-07 Dec-07	<1.0 NS	<1.0 NS	<1.0 NS	<2.0 NS	NS	NS	NS	NS NS	NS NS
W37	Mar-08 Jun-08 Sep-08 Dec-08	NA <1.0 NA <1.0	NA <1.0 NA <1.0	NA <1.0 NA <1.0	NA <2.0 NA <2.0	NA NA NA <0.50	NA 3.27 3.33 <1.00	5.13 0.11 0.78 3.60	3.43 0.11 0.78 0.60	3.21 2.91 4.85 1.60
W37	Mar-09 Jun-09 Sep-09 Dec-09	NA NA NA NA	NA NA NA NA	NA NA NA NA	NA <1.00 <0.50 1.70	<1.00 <1.00 <1.00 <1.00	3.58 3.63 3.77 NA	0.14 2.31 0.75 0.27	1.24 1.86 7.59 4.50	
W37	Mar-10 Jun-10 Sep-10	NA NA NA	NA NA NA	NA NA NA	NA NA <0.50	<1.00 <1.00 <1.00	NA 4.10 5.40	NA 1.34 7.58	NA 15.90 13.90	

Attachment 2

Well	Sample Date	Tetrachloro-ethene ug/L	Trichloro-ethene Ug/L	cis-1,2-dichloro-ethene Ug/L	Vinyl Chloride Ug/L	Fluoride mg/L	NH3(N) mg/L	NO3 mg/L	Gross Alpha pCi/L	Gross Beta pCi/L
		MCL=5	MCL=5	MCL=70	MCL=2	MCL=4		MCL=10	action level = 15	action level = 50
	Dec-10	NA	NA	NA	NA	<0.50	<1.00	4.00	1.47	2.43
W37	Apr-11	NA	NA	NA	NA	<0.50	2.00	<20.00	0.97	2.18
	Jun-11	NA	NA	NA	NA	<0.50	<1.00	3.80	1.55	3.82
	Sep-11	NA	NA	NA	NA	6.00	<1.00	3.50	1.36	2.44
	Dec-11	NA	NA	NA	NA	<0.50	<1.00	2.80	0.00	4.28
W37	Mar-12	NA	NA	NA	NA	<0.50	0.17	5.70	0.00	5.64
	Jun-12	NA	NA	NA	NA	<0.50	<1.00	5.50	0.13	3.99
	Sep-12	NA	NA	NA	NA	<0.50	<1.00	3.70	0.00	2.58
	Dec-12	NA	NA	NA	NA	<0.50	<1.00	4.10	6.32	28.50
W37	Mar-13	NA	NA	NA	NA	<0.50	<1.00	4.20	1.17	1.88
	Jun-13	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Oct-13	NS	NS	NS	NS	NS	NS	NS	NS	NS
W37	Jan-14	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Apr-14	NA	NA	NA	NA	NA	NA	NA	NA	NA
	July-14	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Oct-14	NA	NA	NA	NA	NA	NA	NA	NA	NA
W37	Jan-15	NA	NA	NA	NA	NS	NS	NS	NS	NS
	Apr-15	NA	NA	NA	NA	NS	NS	NS	NS	NS
	July-15	NA	NA	NA	NA	NS	NS	NS	NS	NS
	Oct-15	NA	NA	NA	NA	NS	NS	NS	NS	NS
W37	Jan-16	NA	NA	NA	NA	NS	NS	NS	NS	NS
	Apr-16	NA	NA	NA	NA	NS	NS	NS	NS	NS
	July-16	NA	NA	NA	NA	NS	NS	NS	NS	NS
	Oct-16	NA	NA	NA	NA	NS	NS	NS	NS	NS
W37	Jan-17	NA	NA	NA	NA	NS	NS	NS	NS	NS
	Apr-17	NA	NA	NA	NA	NS	NS	NS	NS	NS
	July-17	NA	NA	NA	NA	NS	NS	NS	NS	NS
	Oct-17	NA	NA	NA	NA	NS	NS	NS	NS	NS
W38	Feb/Mar-04	12.00	140.00	<1.0	<2.0	NS	NS	NS	NS	NS
	Jun-04	NA	NA	NA	NA	0.92	<1.00	NA	NA	NA
	Sep-04	NA	NA	NA	NA	1.30	<1.00	NA	NA	NA

Attachment 2

Well	Sample Date	Tetrachloro-ethene ug/L	Trichloro-ethene Ug/L	cis-1,2-dichloro-ethene Ug/L	Vinyl Chloride Ug/L	Fluoride mg/L	NH3(N) mg/L	NO3 mg/L	Gross Alpha pCi/L	Gross Beta pCi/L
		MCL=5	MCL=5	MCL=70	MCL=2	MCL=4		MCL=10	action level = 15	action level = 50
	Dec-04	9.00	100.00	<1.0	<2.0	1.78	<1.00	NA	NA	NA
W38	Jun-05	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec-05	2.50	45.00	<1.0	<2.0	NA	NA	NA	NA	NA
W38	Jun-06	2.10	47.00	<1.0	<2.0	NA	NA	NA	NA	NA
	Dec-06	NS	NS	NS	NS	NS	NS	NS	NS	NS
W38	Jun-07	2.60	48.00	<1.0	<2.0	NA	NA	NA	NA	NA
	Dec-07	NS	NS	NS	NS	NS	NS	NS	NS	NS
W38	Mar-08	NA	NA	NA	NA	NA	NA	3.26	0.40	0.00
	Jun-08	2.30	47.00	<1.0	<2.0	NA	NA	6.45	0.62	1.71
	Sep-08	NA	NA	NA	NA	NA	NA	5.49	1.67	5.46
	Dec-08	2.00	38.00	<1.0	<2.0	1.80	<1.00	6.60	0.50	6.20
W38	Mar-09	NA	NA	NA	NA	1.30	<1.00	9.37	1.99	3.99
	Jun-09	NA	NA	NA	NA	1.79	<1.00	9.34	<0.001	3.01
	Sep-09	NA	NA	NA	NA	1.98	<1.00	9.70	0.44	2.50
	Dec-09	NA	NA	NA	NA	<0.50	<1.00	NA	0.57	1.92
W38	Mar-10	NA	NA	NA	NA	0.50	<1.00	NA	NA	NA
	Jun-10	NA	NA	NA	NA	NA	<1.00	14.00	3.14	3.63
	Sep-10	NA	NA	NA	NA	0.80	<1.00	15.00	5.99	3.23
	Dec-10	NA	NA	NA	NA	0.83	<1.00	15.00	0.83	4.35
W38	Apr-11	NA	NA	NA	NA	1.09	2.00	<20.00	0.00	3.40
	Jun-11	NA	NA	NA	NA	1.08	<1.00	16.00	1.62	6.11
	Sep-11	NA	NA	NA	NA	<0.50	<1.00	9.10	2.30	1.44
	Dec-11	NA	NA	NA	NA	1.12	<1.00	13.00	2.76	2.17
W38	Mar-12	NA	NA	NA	NA	1.11	0.17	17.00	3.50	3.53
	Jun-12	NA	NA	NA	NA	1.47	<1.00	17.00	3.71	7.57
	Sep-12	NA	NA	NA	NA	1.60	<1.00	12.00	2.46	7.22
	Dec-12	NA	NA	NA	NA	1.43	<1.00	14.00	<2.46	4.38
W38	Mar-13	NA	NA	NA	NA	1.60	<1.00	14.00	4.10	5.24
	Jun-13	NA	NA	NA	NA	8.95	<1.00	12.00	7.72	<2.77
	Oct-13	NA	NA	NA	NA	0.70	<1.00	13.00	<0.98	2.93
W38	Jan-14	NA	NA	NA	NA	0.52	<1.00	13.00	0.00	2.48

Attachment 2

Well	Sample Date	Tetrachloro-ethene ug/L	Trichloro-ethene Ug/L	cis-1,2-dichloro-ethene Ug/L	Vinyl Chloride Ug/L	Fluoride mg/L	NH3(N) mg/L	NO3 mg/L	Gross Alpha pCi/L	Gross Beta pCi/L
		MCL=5	MCL=5	MCL=70	MCL=2	MCL=4		MCL=10	action level = 15	action level = 50
	Apr-14	NA	NA	NA	NA	0.53	<1.00	11.00	0.00	4.12
	July-14	NA	NA	NA	NA	<0.50	<1.00	14.00	0.64	1.74
	Oct-14	NA	NA	NA	NA	<0.50	<1.00	12.00	0.00	4.41
W38	Jan-15	NA	NA	NA	NA	<0.50	<1.00	11.00	0.50	4.52
W38	Apr-15	NA	NA	NA	NA	<0.50	<1.00	11.00	1.62	6.86
W38	July-15	NA	NA	NA	NA	<0.50	<1.00	9.90	1.37	2.37
W38	Oct-15	NA	NA	NA	NA	<0.50	<1.00	9.10	1.87	3.32
W38	Jan-16	NA	NA	NA	NA	<0.50	<1.00	9.10	0.46	6.05
W38	Apr-16	NA	NA	NA	NA	<0.50	<1.00	8.10	2.32	3.18
W38	July-16	NA	NA	NA	NA	<0.50	<1.00	8.80	NA	NA
W38	Oct-16	NA	NA	NA	NA	<0.50	<1.00	9.2	NA	NA
W38	Jan-17	NA	NA	NA	NA	<0.50	<1.00	8.3	NA	NA
W38	Apr-17	NA	NA	NA	NA	<0.50	<1.00	14	NA	NA
W38	July-17	NA	NA	NA	NA	<0.50	<1.00	7.1	NA	NA
W38	Oct-17	NA	NA	NA	NA					
W45	Feb/Mar-04	1.70	<1.0	1.00	<2.0	NA	NA	NA	NA	NA
W45	Jun-04	NS	NS	NS	NS	NS	NS	NS	NS	NS
W45	Sep-04	NS	NS	NS	NS	NS	NS	NS	NS	NS
W45	Dec-04	<1.0	<1.0	1.60	<2.0	NA	NA	NA	NA	NA
W45	Jun-05	NS	NS	NS	NS	NS	NS	NS	NS	NS
W45	Dec-05	NS	NS	NS	NS	NS	NS	NS	NS	NS
W45	Jun-06	NS	NS	NS	NS	NS	NS	NS	NS	NS
W45	Dec-06	NS	NS	NS	NS	NS	NS	NS	NS	NS
W45	Jun-07	NS	NS	NS	NS	NS	NS	NS	NS	NS
W45	Dec-07	NS	NS	NS	NS	NS	NS	NS	NS	NS
W45	Mar-08	NS	NS	NS	NS	NS	NS	NS	NS	NS
W45	Jun-08	NS	NS	NS	NS	NS	NS	NS	NS	NS
W45	Sep-08	NS	NS	NS	NS	NS	NS	NS	NS	NS
W45	Dec-08	<1.0	<1.0	<1.0	<2.0	1.10	<1.00	0.20	0.30	3.90
W45	Mar-09	NS	NS	NS	NS	NS	NS	NS	NS	NS
W45	Jun-09	NS	NS	NS	NS	NS	NS	NS	NS	NS

Attachment 2

Well	Sample Date	Tetrachloro-ethene ug/L	Trichloro-ethene Ug/L	cis-1,2-dichloro-ethene Ug/L	Vinyl Chloride Ug/L	Fluoride mg/L	NH3(N) mg/L	NO3 mg/L	Gross Alpha pCi/L	Gross Beta pCi/L
		MCL=5	MCL=5	MCL=70	MCL=2	MCL=4		MCL=10	action level = 15	action level = 50
	Sep-09 Dec-09	NS NS	NS NS	NS	NS NS	NS	NS NS	NS	NS NS	NS NS
W45	Mar-10 Jun-10 Sep-10 Dec-10	NS NS NS NS	NS NS NS NS	NS	NS NS NS NS	NS	NS NS NS NS	NS	NS NS NS NS	NS NS NS NS
W45	Apr-11 Jun-11 Sep-11 Dec-11	NA NA NA NA	NA NA NA NA	NA	0.80 1.17 1.40 1.38	<1.00 <1.00 <1.00 <1.00	<0.02 0.03 <0.02 <0.02	NA 7.08 9.88 21.60	NA 5.43 5.28 8.51	NA 13.20 12.70
W45	Mar-12 Jun-12 Sep-12 Dec-12	NA NS NS NA	NA NS NS NA	NA	1.39 NS NS 1.36	<1.00 NS NS <1.00	<0.02 NS NS <0.02	22.00 NS NS 15.90	NS NS NS NS	13.20 NS NS 12.70
W45	Mar-13 Jun-13 Oct-13	NS NS NS	NS NS NS	NS	NS NS NS	NS	NS NS NS	NS NS NS	NS NS NS	NS NS NS
W45	Jan-14 Apr-14 July-14 Oct-14	NA NA NA NA	NA NA NA NA	NA	NS NS NS NS	NS	NS NS NS NS	NS NS NS NS	NS NS NS NS	NS NS NS NS
W45	Jan-15 Apr-15 July-15 Oct-15	NA NA NA NA	NA NA NA NA	NA	NS NS NS NS	NS	NS NS NS NS	NS NS NS NS	NS NS NS NS	NS NS NS NS
W45	Jan-16 Apr-16 July-16 Oct-16	NA NA NA NA	NA NA NA NA	NA	NS NS NS NS	NS	NS NS NS NS	NS NS NS NS	NS NS NS NS	NS NS NS NS
W45	Jan-17 Apr-17	NA NA	NA NA	NA	NA NA	NS NS	NS NS	NS NS	NS NS	NS NS

Attachment 2

Well	Sample Date	Tetrachloro-ethene ug/L	Trichloro-ethene Ug/L	cis-1,2-dichloro-ethene Ug/L	Vinyl Chloride Ug/L	Fluoride mg/L	NH3(N) mg/L	NO3 mg/L	Gross Alpha pCi/L	Gross Beta pCi/L
		MCL=5	MCL=5	MCL=70	MCL=2	MCL=4		MCL=10	action level = 15	action level = 50
	July-17 Oct-17	NA NA	NA NA	NA NA	NA NA	NS NS	NS NS	NS NS	NS NS	NS NS