RECEIVED SEPTEMBER 2, 2008

0093666

U.S. DEPARTMENT OF ENERGY

PNNL- SA-62124

Prepared for the U.S. Department of Energy
under Contract DE-AC05-76RL01830

Analytical Data Report for Grab Samples Collected From BP-5 Operable Unit N Well (C5861)

Michael Lindberg

RECEIVED
JAN 1 1 2011
EDMC

September 2008

Pacific Northwest
NATIONAL LABORATORY

200-BP-5

08/28/08 10:47

To: Dana Widrig

From: Michael J. Lindberg

Environmental Sciences Laboratory
Energy and Environment Directorate, Pacific Northwest National Laboratory

Subject: Analytical Data Report for Grab Samples Collected From BP-5 Operable Unit N Well (C5861), Sample Delivery Group ESL070010, SAF Number F07-79

This letter contains the following information for sample delivery group ESL070010

- Cover Sheet
- Narrative
- Analytical Results
- Quality Control
- Geologic Logs
- Geologic Photos
- Chain of Custodies

Introduction

Between December 10, 2007 and December 11, 2007 soil cores and grab samples were received from BP-5 Operable Unit N Well (C5861) for geochemical studies.

Analytical Results/Methodology

The analyses for this project were performed at the 325 building located in the 300 Area of the Hanford Site. The analyses were performed according to Pacific Northwest National Laboratory (PNNL) approved procedures and/or nationally recognized test procedures. The data sets include the sample identification numbers, analytical results, estimated quantification limits (EQL), and quality control data.

Quality Control

The preparatory and analytical quality control requirements, calibration requirements, acceptance criteria, and failure actions are defined in the on-line QA plan "Conducting Analytical Work in Support of Regulatory Programs" (CAW). This QA plan implements the Hanford Analytical Services Quality Assurance Requirements Documents (HASQARD) for PNNL.

Definitions

Dup Duplicate
RPD Relative Percent Difference

Sample Receipt

Samples were received with a chain of custody (COC) and were analyzed according to the sample identification numbers supplied by the client. All Samples were refrigerated upon receipt until prepared for analysis.

All samples were received with custody seals intact unless noted in the Case Narrative.

Holding Times

Holding time is defined as the time from sample preparation to the time of analyses. The prescribed holding times were met for all analytes unless noted in the Case Narrative.

Analytical Results

All reported analytical results meet the requirements of the CAW or client specified SOW unless noted in the case narrative.

Case Narrative Report

Hold time:

No Discrepancies Noted.

Preparation Blank (PB):

No Discrepancies Noted.

Duplicate (DUP):

No Discrepancies Noted.

Laboratory control samples (LCS):

No Discrepancies Noted.

Post spike (PS) and post spike duplicate (PSD):

No Discrepancies Noted.

Other QC Criteria:

No Discrepancies Noted.

DISCLAIMER

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor Battelle Memorial Institute, nor any of their employees, makes **any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights**. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof, or Battelle Memorial Institute. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

SAMPLES INCLUDED IN THIS REPORT

200 BP 5 OU, C5861 N-Well VZ

HEIS No.	Laboratory ID	Matrix	Date Collected	Date Received
B1PN56	0802011-01	SOIL	12/7/07 08:41	12/10/07 16:00
B1PN57	0802011-02	SOIL	12/7/07 09:30	12/10/07 16:00
B1PN58	0802011-03	SOIL	12/7/07 09:37	12/10/07 16:00
B1PN59	0802011-04	SOIL	12/7/07 10:33	12/10/07 16:00
B1PN60	0802011-05	SOIL	12/7/07 13:50	12/10/07 16:00
B1PN61	0802011-06	SOIL	12/7/07 14:00	12/10/07 16:00
B1PN62	0802011-07	SOIL	12/7/07 14:40	12/10/07 16:00
B1PN63	0802012-01	SOIL	12/10/07 09:00	12/11/07 13:30
B1PN64	0802012-02	SOIL	12/10/07 10:23	12/11/07 13:30
B1PN65	0802012-03	SOIL	12/10/07 11:20	12/11/07 13:30
B1RRJ6	0802012-04	SOIL	12/10/07 13:50	12/11/07 13:30
B1RRJ7	0802012-05	SOIL	12/10/07 14:25	12/11/07 13:30
B1RRJ8	0802012-06	SOIL	12/10/07 15:20	12/11/07 13:30

The following analyses were performed on the following samples included in this report:

Metals 1:1 DI Water Extract by ICPMS

1:1 DI Water Extract

Alkalinity, Titrimetic (pH 4.5)

Anions By Ion Chromatography

Geological description

Metals 1:1 Water Extract by ICPOES

Moisture Content

pH of Waters By Electrode

Specific Conductance

Tc_U 1:1 DI Water Extract by ICPMS

SAMPLES ANALYZED IN THIS REPORT

HEIS No.	Laboratory ID	Matrix	Date Collected	Date Received
B1PN56	0802011-01	SOIL	12/7/07 08:41	12/10/07 16:00
B1PN57	0802011-02	SOIL	12/7/07 09:30	12/10/07 16:00
B1PN58	0802011-03	SOIL	12/7/07 09:37	12/10/07 16:00
B1PN59	0802011-04	SOIL	12/7/07 10:33	12/10/07 16:00
B1PN60	0802011-05	SOIL	12/7/07 13:50	12/10/07 16:00
B1PN61	0802011-06	SOIL	12/7/07 14:00	12/10/07 16:00
B1PN62	0802011-07	SOIL	12/7/07 14:40	12/10/07 16:00
B1PN63	0802012-01	SOIL	12/10/07 09:00	12/11/07 13:30
B1PN64	0802012-02	SOIL	12/10/07 10:23	12/11/07 13:30
B1PN65	0802012-03	SOIL	12/10/07 11:20	12/11/07 13:30
B1RRJ6	0802012-04	SOIL	12/10/07 13:50	12/11/07 13:30
B1RRJ7	0802012-05	SOIL	12/10/07 14:25	12/11/07 13:30
B1RRJ8	0802012-06	SOIL	12/10/07 15:20	12/11/07 13:30

Wet Chemistry

Alkalinity as CaCO3 (ug/g dry) by Standard Methods 2320B

Lab ID	HEIS No.	Results	EQL	Analyzed	Batch
0802011-01	B1PN56	5.55E1	2.35E1	2/18/08	8D23016
0802011-02	B1PN57	1.01E2	2.35E1	2/18/08	8D23016
0802011-03	B1PN58	9.05E1	2.35E1	2/18/08	8D23016
0802011-04	B1PN59	8.93E1	2.36E1	2/18/08	8D23016
0802011-05	B1PN60	8.43E1	2.35E1	2/18/08	8D23016
0802011-06	B1PN61	6.31E1	2.35E1	2/18/08	8D23016
0802011-07	B1PN62	6.54E1	2.35E1	2/18/08	8D23016
0802012-01	B1PN63	5.63E1	2.35E1	2/18/08	8D23016
0802012-02	B1PN64	6.38E1	2.35E1	2/18/08	8D23016
0802012-03	B1PN65	5.17E1	2.35E1	2/18/08	8D23016
0802012-04	B1RRJ6	5.47E1	2.35E1	2/18/08	8D23016
0802012-05	B1RRJ7	5.61E1	2.41E1	2/18/08	8D23016
0802012-06	B1RRJ8	6.39E1	2.35E1	2/18/08	8D23016

Wet Chemistry

Specific Conductance (EC) (mS/cm) by EPA 120.1

Lab ID	HEIS No.	Results	EQL	Analyzed	Batch
0802011-01	B1PN56	1.24E-1	5.00E-3	2/07/08	8D23015
0802011-02	B1PN57	2.37E-1	5.00E-3	2/07/08	8D23015
0802011-03	B1PN58	2.11E-1	5.00E-3	2/07/08	8D23015
0802011-04	B1PN59	2.88E-1	5.00E-3	2/07/08	8D23015
0802011-05	B1PN60	3.37E-1	5.00E-3	2/07/08	8D23015
0802011-06	B1PN61	2.64E-1	5.00E-3	2/07/08	8D23015
0802011-07	B1PN62	1.45E-1	5.00E-3	2/07/08	8D23015
0802012-01	B1PN63	1.08E-1	5.00E-3	2/07/08	8D23015
0802012-02	B1PN64	1.42E-1	5.00E-3	2/07/08	8D23015
0802012-03	B1PN65	9.10E-2	5.00E-3	2/07/08	8D23015
0802012-04	B1RRJ6	9.90E-2	5.00E-3	2/07/08	8D23015
0802012-05	B1RRJ7	1.04E-1	5.00E-3	2/07/08	8D23015
0802012-06	B1RRJ8	1.23E-1	5.00E-3	2/07/08	8D23015

Wet Chemistry

Moisture Content (% by Weight) by AGG-WC-001

Lab ID	HEIS No.	Results	EQL	Analyzed	Batch
0802011-01	B1PN56	2.30E0	N/A	2/05/08	8D23014
0802011-02	B1PN57	3.53E0	N/A	2/05/08	8D23014
0802011-03	B1PN58	3.22E0	N/A	2/05/08	8D23014
0802011-04	B1PN59	1.29E1	N/A	2/05/08	8D23014
0802011-05	B1PN60	2.12E1	N/A	2/05/08	8D23014
0802011-06	B1PN61	1.68E1	N/A	2/05/08	8D23014
0802011-07	B1PN62	2.77E0	N/A	2/05/08	8D23014
0802012-01	B1PN63	2.59E0	N/A	2/05/08	8D23014
0802012-02	B1PN64	2.76E0	N/A	2/05/08	8D23014
0802012-03	B1PN65	2.58E0	N/A	2/05/08	8D23014
0802012-04	B1RRJ6	2.96E0	N/A	2/05/08	8D23014
0802012-05	B1RRJ7	2.89E0	N/A	2/05/08	8D23014
0802012-06	B1RRJ8	3.32E0	N/A	2/05/08	8D23014

Wet Chemistry

pH (pH Units) by AGG-pH-001

Lab ID	HEIS No.	Results	EQL	Analyzed	Batch
0802011-01	B1PN56	8.40E0	N/A	2/07/08	8D23015
0802011-02	B1PN57	8.40E0	N/A	2/07/08	8D23015
0802011-03	B1PN58	8.30E0	N/A	2/07/08	8D23015
0802011-04	B1PN59	8.27E0	N/A	2/07/08	8D23015
0802011-05	B1PN60	8.15E0	N/A	2/07/08	8D23015
0802011-06	B1PN61	8.06E0	N/A	2/07/08	8D23015
0802011-07	B1PN62	8.33E0	N/A	2/07/08	8D23015
0802012-01	B1PN63	8.02E0	N/A	2/07/08	8D23015
0802012-02	B1PN64	8.14E0	N/A	2/07/08	8D23015
0802012-03	B1PN65	8.20E0	N/A	2/07/08	8D23015
0802012-04	B1RRJ6	8.31E0	N/A	2/07/08	8D23015
0802012-05	B1RRJ7	8.28E0	N/A	2/07/08	8D23015
0802012-06	B1RRJ8	8.29E0	N/A	2/07/08	8D23015

Anions by Ion Chromatography

CAS #	Analyte	Results	Units	EQL	Analyzed	Batch	Method
HEIS No.	**B1PN56**		**Lab ID:**	**0802011-01**			
16984-48-8	Fluoride	5.72E-1	ug/g dry	2.00E-1	2/07/08	8D25004	AGG-IC-001
14797-65-0	Nitrite	<1.00E0	ug/g dry	1.00E0	2/07/08	8D25004	AGG-IC-001
14797-55-8	Nitrate	2.49E0	ug/g dry	1.00E0	2/07/08	8D25004	AGG-IC-001
14808-79-8	Sulfate	7.27E0	ug/g dry	1.50E0	2/07/08	8D25004	AGG-IC-001
14265-44-2	Phosphate	<1.50E0	ug/g dry	1.50E0	2/07/08	8D25004	AGG-IC-001
HEIS No.	**B1PN57**		**Lab ID:**	**0802011-02**			
16984-48-8	Fluoride	9.19E-1	ug/g dry	2.00E-1	2/07/08	8D25004	AGG-IC-001
14797-65-0	Nitrite	<1.00E0	ug/g dry	1.00E0	2/07/08	8D25004	AGG-IC-001
14797-55-8	Nitrate	<1.00E0	ug/g dry	1.00E0	2/07/08	8D25004	AGG-IC-001
14808-79-8	Sulfate	1.27E1	ug/g dry	1.50E0	2/07/08	8D25004	AGG-IC-001
14265-44-2	Phosphate	<1.50E0	ug/g dry	1.50E0	2/07/08	8D25004	AGG-IC-001
HEIS No.	**B1PN58**		**Lab ID:**	**0802011-03**			
16984-48-8	Fluoride	9.15E-1	ug/g dry	2.00E-1	2/07/08	8D25004	AGG-IC-001
14797-65-0	Nitrite	<1.00E0	ug/g dry	1.00E0	2/07/08	8D25004	AGG-IC-001
14797-55-8	Nitrate	<1.00E0	ug/g dry	1.00E0	2/07/08	8D25004	AGG-IC-001
14808-79-8	Sulfate	1.33E1	ug/g dry	1.50E0	2/07/08	8D25004	AGG-IC-001
14265-44-2	Phosphate	<1.50E0	ug/g dry	1.50E0	2/07/08	8D25004	AGG-IC-001
HEIS No.	**B1PN59**		**Lab ID:**	**0802011-04**			
16984-48-8	Fluoride	6.11E-1	ug/g dry	2.01E-1	2/07/08	8D25004	AGG-IC-001
14797-65-0	Nitrite	<1.00E0	ug/g dry	1.00E0	2/07/08	8D25004	AGG-IC-001
14797-55-8	Nitrate	9.94E0	ug/g dry	1.00E0	2/07/08	8D25004	AGG-IC-001
14808-79-8	Sulfate	4.02E1	ug/g dry	1.51E0	2/07/08	8D25004	AGG-IC-001
14265-44-2	Phosphate	<1.51E0	ug/g dry	1.51E0	2/07/08	8D25004	AGG-IC-001
HEIS No.	**B1PN60**		**Lab ID:**	**0802011-05**			
16984-48-8	Fluoride	6.84E-1	ug/g dry	2.00E-1	2/07/08	8D25004	AGG-IC-001
14797-65-0	Nitrite	<1.00E0	ug/g dry	1.00E0	2/07/08	8D25004	AGG-IC-001
14797-55-8	Nitrate	2.76E1	ug/g dry	1.00E0	2/07/08	8D25004	AGG-IC-001
14808-79-8	Sulfate	5.68E1	ug/g dry	1.50E0	2/07/08	8D25004	AGG-IC-001
14265-44-2	Phosphate	<1.50E0	ug/g dry	1.50E0	2/07/08	8D25004	AGG-IC-001
HEIS No.	**B1PN61**		**Lab ID:**	**0802011-06**			
16984-48-8	Fluoride	5.07E-1	ug/g dry	2.00E-1	2/07/08	8D25004	AGG-IC-001
14797-65-0	Nitrite	<1.00E0	ug/g dry	1.00E0	2/07/08	8D25004	AGG-IC-001
14797-55-8	Nitrate	2.37E1	ug/g dry	1.00E0	2/07/08	8D25004	AGG-IC-001
14808-79-8	Sulfate	3.80E1	ug/g dry	1.50E0	2/07/08	8D25004	AGG-IC-001
14265-44-2	Phosphate	<1.50E0	ug/g dry	1.50E0	2/07/08	8D25004	AGG-IC-001
HEIS No.	**B1PN62**		**Lab ID:**	**0802011-07**			
16984-48-8	Fluoride	5.80E-1	ug/g dry	2.00E-1	2/07/08	8D25004	AGG-IC-001
14797-65-0	Nitrite	<1.00E0	ug/g dry	1.00E0	2/07/08	8D25004	AGG-IC-001
14797-55-8	Nitrate	2.64E0	ug/g dry	1.00E0	2/07/08	8D25004	AGG-IC-001
14808-79-8	Sulfate	1.00E1	ug/g dry	1.50E0	2/07/08	8D25004	AGG-IC-001
14265-44-2	Phosphate	<1.50E0	ug/g dry	1.50E0	2/07/08	8D25004	AGG-IC-001
HEIS No.	**B1PN63**		**Lab ID:**	**0802012-01**			
16984-48-8	Fluoride	3.39E-1	ug/g dry	2.00E-1	2/07/08	8D25004	AGG-IC-001
14797-65-0	Nitrite	<1.00E0	ug/g dry	1.00E0	2/07/08	8D25004	AGG-IC-001
14797-55-8	Nitrate	1.96E0	ug/g dry	1.00E0	2/07/08	8D25004	AGG-IC-001
14808-79-8	Sulfate	7.07E0	ug/g dry	1.50E0	2/07/08	8D25004	AGG-IC-001
14265-44-2	Phosphate	<1.50E0	ug/g dry	1.50E0	2/07/08	8D25004	AGG-IC-001

Anions by Ion Chromatography

CAS #	Analyte	Results	Units	EQL	Analyzed	Batch	Method
HEIS No.	**B1PN64**		**Lab ID:**	**0802012-02**			
16984-48-8	Fluoride	4.98E-1	ug/g dry	2.00E-1	2/07/08	8D25004	AGG-IC-001
14797-65-0	Nitrite	<1.00E0	ug/g dry	1.00E0	2/07/08	8D25004	AGG-IC-001
14797-55-8	Nitrate	<1.00E0	ug/g dry	1.00E0	2/07/08	8D25004	AGG-IC-001
14808-79-8	Sulfate	9.13E0	ug/g dry	1.50E0	2/07/08	8D25004	AGG-IC-001
14265-44-2	Phosphate	<1.50E0	ug/g dry	1.50E0	2/07/08	8D25004	AGG-IC-001
HEIS No.	**B1PN65**		**Lab ID:**	**0802012-03**			
16984-48-8	Fluoride	3.68E-1	ug/g dry	2.00E-1	2/07/08	8D25004	AGG-IC-001
14797-65-0	Nitrite	<1.00E0	ug/g dry	1.00E0	2/07/08	8D25004	AGG-IC-001
14797-55-8	Nitrate	<1.00E0	ug/g dry	1.00E0	2/07/08	8D25004	AGG-IC-001
14808-79-8	Sulfate	2.99E0	ug/g dry	1.50E0	2/07/08	8D25004	AGG-IC-001
14265-44-2	Phosphate	<1.50E0	ug/g dry	1.50E0	2/07/08	8D25004	AGG-IC-001
HEIS No.	**B1RRJ6**		**Lab ID:**	**0802012-04**			
16984-48-8	Fluoride	4.51E-1	ug/g dry	2.00E-1	2/07/08	8D25004	AGG-IC-001
14797-65-0	Nitrite	<1.00E0	ug/g dry	1.00E0	2/07/08	8D25004	AGG-IC-001
14797-55-8	Nitrate	<1.00E0	ug/g dry	1.00E0	2/07/08	8D25004	AGG-IC-001
14808-79-8	Sulfate	3.18E0	ug/g dry	1.50E0	2/07/08	8D25004	AGG-IC-001
14265-44-2	Phosphate	<1.50E0	ug/g dry	1.50E0	2/07/08	8D25004	AGG-IC-001
HEIS No.	**B1RRJ7**		**Lab ID:**	**0802012-05**			
16984-48-8	Fluoride	4.37E-1	ug/g dry	2.05E-1	2/07/08	8D25004	AGG-IC-001
14797-65-0	Nitrite	<1.03E0	ug/g dry	1.03E0	2/07/08	8D25004	AGG-IC-001
14797-55-8	Nitrate	<1.03E0	ug/g dry	1.03E0	2/07/08	8D25004	AGG-IC-001
14808-79-8	Sulfate	3.48E0	ug/g dry	1.54E0	2/07/08	8D25004	AGG-IC-001
14265-44-2	Phosphate	<1.54E0	ug/g dry	1.54E0	2/07/08	8D25004	AGG-IC-001
HEIS No.	**B1RRJ8**		**Lab ID:**	**0802012-06**			
16984-48-8	Fluoride	5.62E-1	ug/g dry	2.00E-1	2/07/08	8D25004	AGG-IC-001
14797-65-0	Nitrite	<1.00E0	ug/g dry	1.00E0	2/07/08	8D25004	AGG-IC-001
14797-55-8	Nitrate	<1.00E0	ug/g dry	1.00E0	2/07/08	8D25004	AGG-IC-001
14808-79-8	Sulfate	4.57E0	ug/g dry	1.50E0	2/07/08	8D25004	AGG-IC-001
14265-44-2	Phosphate	<1.50E0	ug/g dry	1.50E0	2/07/08	8D25004	AGG-IC-001

Total Metals by PNNL-AGG-ICP-AES/Water Extract

CAS #	Analyte	Results	Units	EQL	Analyzed	Batch	Method
HEIS No.	**B1PN56**		**Lab ID:**	**0802011-01**			
7429-90-5	Aluminum	4.60E-1	ug/g dry	8.58E-2	2/07/08	8E01006	PNNL-AGG-ICP-AES
7440-70-2	Calcium	6.13E0	ug/g dry	3.87E-1	2/07/08	8E01006	PNNL-AGG-ICP-AES
7440-47-3	Chromium	<3.33E-2	ug/g dry	3.33E-2	2/07/08	8E01006	PNNL-AGG-ICP-AES
7440-09-7	Potassium	4.68E0	ug/g dry	2.33E0	2/07/08	8E01006	PNNL-AGG-ICP-AES
7439-95-4	Magnesium	1.75E0	ug/g dry	8.34E-2	2/07/08	8E01006	PNNL-AGG-ICP-AES
7439-96-5	Manganese	<1.71E-2	ug/g dry	1.71E-2	2/07/08	8E01006	PNNL-AGG-ICP-AES
7440-23-5	Sodium	1.26E1	ug/g dry	6.69E-1	2/07/08	8E01006	PNNL-AGG-ICP-AES
HEIS No.	**B1PN57**		**Lab ID:**	**0802011-02**			
7429-90-5	Aluminum	2.42E-1	ug/g dry	8.58E-2	2/07/08	8E01006	PNNL-AGG-ICP-AES
7440-70-2	Calcium	1.54E1	ug/g dry	3.87E-1	2/07/08	8E01006	PNNL-AGG-ICP-AES
7440-47-3	Chromium	<3.33E-2	ug/g dry	3.33E-2	2/07/08	8E01006	PNNL-AGG-ICP-AES
7440-09-7	Potassium	8.83E0	ug/g dry	2.33E0	2/07/08	8E01006	PNNL-AGG-ICP-AES
7439-95-4	Magnesium	4.96E0	ug/g dry	8.34E-2	2/07/08	8E01006	PNNL-AGG-ICP-AES
7439-96-5	Manganese	1.84E-2	ug/g dry	1.71E-2	2/07/08	8E01006	PNNL-AGG-ICP-AES
7440-23-5	Sodium	2.25E1	ug/g dry	6.69E-1	2/07/08	8E01006	PNNL-AGG-ICP-AES
HEIS No.	**B1PN58**		**Lab ID:**	**0802011-03**			
7429-90-5	Aluminum	2.03E-1	ug/g dry	8.59E-2	2/07/08	8E01006	PNNL-AGG-ICP-AES
7440-70-2	Calcium	1.06E1	ug/g dry	3.87E-1	2/07/08	8E01006	PNNL-AGG-ICP-AES
7440-47-3	Chromium	<3.33E-2	ug/g dry	3.33E-2	2/07/08	8E01006	PNNL-AGG-ICP-AES
7440-09-7	Potassium	8.03E0	ug/g dry	2.33E0	2/07/08	8E01006	PNNL-AGG-ICP-AES
7439-95-4	Magnesium	3.41E0	ug/g dry	8.35E-2	2/07/08	8E01006	PNNL-AGG-ICP-AES
7439-96-5	Manganese	<1.71E-2	ug/g dry	1.71E-2	2/07/08	8E01006	PNNL-AGG-ICP-AES
7440-23-5	Sodium	2.33E1	ug/g dry	6.69E-1	2/07/08	8E01006	PNNL-AGG-ICP-AES
HEIS No.	**B1PN59**		**Lab ID:**	**0802011-04**			
7429-90-5	Aluminum	<8.61E-2	ug/g dry	8.61E-2	2/07/08	8E01006	PNNL-AGG-ICP-AES
7440-70-2	Calcium	2.04E1	ug/g dry	3.89E-1	2/07/08	8E01006	PNNL-AGG-ICP-AES
7440-47-3	Chromium	<3.34E-2	ug/g dry	3.34E-2	2/07/08	8E01006	PNNL-AGG-ICP-AES
7440-09-7	Potassium	8.47E0	ug/g dry	2.34E0	2/07/08	8E01006	PNNL-AGG-ICP-AES
7439-95-4	Magnesium	6.56E0	ug/g dry	8.37E-2	2/07/08	8E01006	PNNL-AGG-ICP-AES
7439-96-5	Manganese	<1.72E-2	ug/g dry	1.72E-2	2/07/08	8E01006	PNNL-AGG-ICP-AES
7440-23-5	Sodium	2.29E1	ug/g dry	6.72E-1	2/07/08	8E01006	PNNL-AGG-ICP-AES
HEIS No.	**B1PN60**		**Lab ID:**	**0802011-05**			
7429-90-5	Aluminum	<1.43E-1	ug/g dry	1.43E-1	2/20/08	8E01007	PNNL-AGG-ICP-AES
7440-70-2	Calcium	2.63E1	ug/g dry	6.45E-1	2/20/08	8E01007	PNNL-AGG-ICP-AES
7440-47-3	Chromium	<5.55E-2	ug/g dry	5.55E-2	2/20/08	8E01007	PNNL-AGG-ICP-AES
7440-09-7	Potassium	5.51E0	ug/g dry	3.88E0	2/20/08	8E01007	PNNL-AGG-ICP-AES
7439-95-4	Magnesium	4.43E0	ug/g dry	1.39E-1	2/20/08	8E01007	PNNL-AGG-ICP-AES
7439-96-5	Manganese	<2.85E-2	ug/g dry	2.85E-2	2/20/08	8E01007	PNNL-AGG-ICP-AES
7440-23-5	Sodium	2.73E1	ug/g dry	1.11E0	2/20/08	8E01007	PNNL-AGG-ICP-AES
HEIS No.	**B1PN61**		**Lab ID:**	**0802011-06**			
7429-90-5	Aluminum	<8.59E-2	ug/g dry	8.59E-2	2/07/08	8E01006	PNNL-AGG-ICP-AES
7440-70-2	Calcium	1.85E1	ug/g dry	3.87E-1	2/07/08	8E01006	PNNL-AGG-ICP-AES
7440-47-3	Chromium	<3.33E-2	ug/g dry	3.33E-2	2/07/08	8E01006	PNNL-AGG-ICP-AES
7440-09-7	Potassium	4.58E0	ug/g dry	2.33E0	2/07/08	8E01006	PNNL-AGG-ICP-AES
7439-95-4	Magnesium	6.51E0	ug/g dry	8.35E-2	2/07/08	8E01006	PNNL-AGG-ICP-AES
7439-96-5	Manganese	<1.71E-2	ug/g dry	1.71E-2	2/07/08	8E01006	PNNL-AGG-ICP-AES
7440-23-5	Sodium	1.88E1	ug/g dry	6.69E-1	2/07/08	8E01006	PNNL-AGG-ICP-AES
HEIS No.	**B1PN62**		**Lab ID:**	**0802011-07**			

Total Metals by PNNL-AGG-ICP-AES/Water Extract

CAS #	Analyte	Results	Units	EQL	Analyzed	Batch	Method
HEIS No.	**B1PN62**		**Lab ID:**	**0802011-07**			
7429-90-5	Aluminum	3.94E-1	ug/g dry	8.59E-2	2/07/08	8E01006	PNNL-AGG-ICP-AES
7440-70-2	Calcium	5.82E0	ug/g dry	3.87E-1	2/07/08	8E01006	PNNL-AGG-ICP-AES
7440-47-3	Chromium	<3.33E-2	ug/g dry	3.33E-2	2/07/08	8E01006	PNNL-AGG-ICP-AES
7440-09-7	Potassium	5.92E0	ug/g dry	2.33E0	2/07/08	8E01006	PNNL-AGG-ICP-AES
7439-95-4	Magnesium	2.52E0	ug/g dry	8.35E-2	2/07/08	8E01006	PNNL-AGG-ICP-AES
7439-96-5	Manganese	<1.71E-2	ug/g dry	1.71E-2	2/07/08	8E01006	PNNL-AGG-ICP-AES
7440-23-5	Sodium	1.52E1	ug/g dry	6.69E-1	2/07/08	8E01006	PNNL-AGG-ICP-AES
HEIS No.	**B1PN63**		**Lab ID:**	**0802012-01**			
7429-90-5	Aluminum	3.23E-1	ug/g dry	8.58E-2	2/07/08	8E01006	PNNL-AGG-ICP-AES
7440-70-2	Calcium	5.76E0	ug/g dry	3.87E-1	2/07/08	8E01006	PNNL-AGG-ICP-AES
7440-47-3	Chromium	<3.33E-2	ug/g dry	3.33E-2	2/07/08	8E01006	PNNL-AGG-ICP-AES
7440-09-7	Potassium	3.93E0	ug/g dry	2.33E0	2/07/08	8E01006	PNNL-AGG-ICP-AES
7439-95-4	Magnesium	1.75E0	ug/g dry	8.34E-2	2/07/08	8E01006	PNNL-AGG-ICP-AES
7439-96-5	Manganese	1.80E-2	ug/g dry	1.71E-2	2/07/08	8E01006	PNNL-AGG-ICP-AES
7440-23-5	Sodium	9.72E0	ug/g dry	6.69E-1	2/07/08	8E01006	PNNL-AGG-ICP-AES
HEIS No.	**B1PN64**		**Lab ID:**	**0802012-02**			
7429-90-5	Aluminum	2.78E-1	ug/g dry	8.58E-2	2/07/08	8E01006	PNNL-AGG-ICP-AES
7440-70-2	Calcium	6.76E0	ug/g dry	3.87E-1	2/07/08	8E01006	PNNL-AGG-ICP-AES
7440-47-3	Chromium	<3.33E-2	ug/g dry	3.33E-2	2/07/08	8E01006	PNNL-AGG-ICP-AES
7440-09-7	Potassium	5.67E0	ug/g dry	2.33E0	2/07/08	8E01006	PNNL-AGG-ICP-AES
7439-95-4	Magnesium	2.24E0	ug/g dry	8.34E-2	2/07/08	8E01006	PNNL-AGG-ICP-AES
7439-96-5	Manganese	<1.71E-2	ug/g dry	1.71E-2	2/07/08	8E01006	PNNL-AGG-ICP-AES
7440-23-5	Sodium	1.44E1	ug/g dry	6.69E-1	2/07/08	8E01006	PNNL-AGG-ICP-AES
HEIS No.	**B1PN65**		**Lab ID:**	**0802012-03**			
7429-90-5	Aluminum	4.81E-1	ug/g dry	8.58E-2	2/07/08	8E01006	PNNL-AGG-ICP-AES
7440-70-2	Calcium	4.62E0	ug/g dry	3.87E-1	2/07/08	8E01006	PNNL-AGG-ICP-AES
7440-47-3	Chromium	<3.33E-2	ug/g dry	3.33E-2	2/07/08	8E01006	PNNL-AGG-ICP-AES
7440-09-7	Potassium	3.40E0	ug/g dry	2.33E0	2/07/08	8E01006	PNNL-AGG-ICP-AES
7439-95-4	Magnesium	1.40E0	ug/g dry	8.34E-2	2/07/08	8E01006	PNNL-AGG-ICP-AES
7439-96-5	Manganese	2.51E-2	ug/g dry	1.71E-2	2/07/08	8E01006	PNNL-AGG-ICP-AES
7440-23-5	Sodium	9.23E0	ug/g dry	6.69E-1	2/07/08	8E01006	PNNL-AGG-ICP-AES
HEIS No.	**B1RRJ6**		**Lab ID:**	**0802012-04**			
7429-90-5	Aluminum	4.24E-1	ug/g dry	8.58E-2	2/07/08	8E01006	PNNL-AGG-ICP-AES
7440-70-2	Calcium	4.77E0	ug/g dry	3.87E-1	2/07/08	8E01006	PNNL-AGG-ICP-AES
7440-47-3	Chromium	<3.33E-2	ug/g dry	3.33E-2	2/07/08	8E01006	PNNL-AGG-ICP-AES
7440-09-7	Potassium	3.62E0	ug/g dry	2.33E0	2/07/08	8E01006	PNNL-AGG-ICP-AES
7439-95-4	Magnesium	1.42E0	ug/g dry	8.34E-2	2/07/08	8E01006	PNNL-AGG-ICP-AES
7439-96-5	Manganese	1.93E-2	ug/g dry	1.71E-2	2/07/08	8E01006	PNNL-AGG-ICP-AES
7440-23-5	Sodium	1.06E1	ug/g dry	6.69E-1	2/07/08	8E01006	PNNL-AGG-ICP-AES
HEIS No.	**B1RRJ7**		**Lab ID:**	**0802012-05**			
7429-90-5	Aluminum	4.46E-1	ug/g dry	8.80E-2	2/07/08	8E01006	PNNL-AGG-ICP-AES
7440-70-2	Calcium	5.05E0	ug/g dry	3.97E-1	2/07/08	8E01006	PNNL-AGG-ICP-AES
7440-47-3	Chromium	<3.42E-2	ug/g dry	3.42E-2	2/07/08	8E01006	PNNL-AGG-ICP-AES
7440-09-7	Potassium	3.92E0	ug/g dry	2.39E0	2/07/08	8E01006	PNNL-AGG-ICP-AES
7439-95-4	Magnesium	1.54E0	ug/g dry	8.56E-2	2/07/08	8E01006	PNNL-AGG-ICP-AES
7439-96-5	Manganese	<1.76E-2	ug/g dry	1.76E-2	2/07/08	8E01006	PNNL-AGG-ICP-AES
7440-23-5	Sodium	1.13E1	ug/g dry	6.86E-1	2/07/08	8E01006	PNNL-AGG-ICP-AES
HEIS No.	**B1RRJ8**		**Lab ID:**	**0802012-06**			

Total Metals by PNNL-AGG-ICP-AES/Water Extract

CAS #	Analyte	Results	Units	EQL	Analyzed	Batch	Method
HEIS No.	**B1RRJ8**		**Lab ID:**	**0802012-06**			
7429-90-5	Aluminum	4.07E-1	ug/g dry	8.58E-2	2/07/08	8E01006	PNNL-AGG-ICP-AES
7440-70-2	Calcium	5.03E0	ug/g dry	3.87E-1	2/07/08	8E01006	PNNL-AGG-ICP-AES
7440-47-3	Chromium	<3.33E-2	ug/g dry	3.33E-2	2/07/08	8E01006	PNNL-AGG-ICP-AES
7440-09-7	Potassium	4.61E0	ug/g dry	2.33E0	2/07/08	8E01006	PNNL-AGG-ICP-AES
7439-95-4	Magnesium	1.55E0	ug/g dry	8.34E-2	2/07/08	8E01006	PNNL-AGG-ICP-AES
7439-96-5	Manganese	<1.71E-2	ug/g dry	1.71E-2	2/07/08	8E01006	PNNL-AGG-ICP-AES
7440-23-5	Sodium	1.40E1	ug/g dry	6.69E-1	2/07/08	8E01006	PNNL-AGG-ICP-AES

Radionuclides by ICP-MS/Water Extract

CAS #	Analyte	Results	Units	EQL	Analyzed	Batch	Method
HEIS No.	**B1PN56**		**Lab ID:**	**0802011-01**			
14133-76-7	Technetium-99	<2.30E-5	ug/g dry	2.30E-5	2/11/08	8D24001	PNNL-AGG-415
	Uranium 238	<5.64E-4	ug/g dry	5.64E-4	2/11/08	8D24001	PNNL-AGG-415
HEIS No.	**B1PN57**		**Lab ID:**	**0802011-02**			
14133-76-7	Technetium-99	<2.30E-5	ug/g dry	2.30E-5	2/11/08	8D24001	PNNL-AGG-415
	Uranium 238	6.23E-4	ug/g dry	5.64E-4	2/11/08	8D24001	PNNL-AGG-415
HEIS No.	**B1PN58**		**Lab ID:**	**0802011-03**			
14133-76-7	Technetium-99	<2.30E-5	ug/g dry	2.30E-5	2/11/08	8D24001	PNNL-AGG-415
	Uranium 238	<5.64E-4	ug/g dry	5.64E-4	2/11/08	8D24001	PNNL-AGG-415
HEIS No.	**B1PN59**		**Lab ID:**	**0802011-04**			
14133-76-7	Technetium-99	<2.31E-5	ug/g dry	2.31E-5	2/11/08	8D24001	PNNL-AGG-415
	Uranium 238	1.30E-3	ug/g dry	5.66E-4	2/11/08	8D24001	PNNL-AGG-415
HEIS No.	**B1PN60**		**Lab ID:**	**0802011-05**			
14133-76-7	Technetium-99	<2.30E-5	ug/g dry	2.30E-5	2/20/08	8D24001	PNNL-AGG-415
	Uranium 238	3.46E-3	ug/g dry	5.63E-4	2/20/08	8D24001	PNNL-AGG-415
HEIS No.	**B1PN61**		**Lab ID:**	**0802011-06**			
14133-76-7	Technetium-99	<2.30E-5	ug/g dry	2.30E-5	2/11/08	8D24001	PNNL-AGG-415
	Uranium 238	1.54E-3	ug/g dry	5.64E-4	2/11/08	8D24001	PNNL-AGG-415
HEIS No.	**B1PN62**		**Lab ID:**	**0802011-07**			
14133-76-7	Technetium-99	<2.30E-5	ug/g dry	2.30E-5	2/11/08	8D24001	PNNL-AGG-415
	Uranium 238	<5.64E-4	ug/g dry	5.64E-4	2/11/08	8D24001	PNNL-AGG-415
HEIS No.	**B1PN63**		**Lab ID:**	**0802012-01**			
14133-76-7	Technetium-99	<2.30E-5	ug/g dry	2.30E-5	2/11/08	8D24001	PNNL-AGG-415
	Uranium 238	<5.64E-4	ug/g dry	5.64E-4	2/11/08	8D24001	PNNL-AGG-415
HEIS No.	**B1PN64**		**Lab ID:**	**0802012-02**			
14133-76-7	Technetium-99	<2.30E-5	ug/g dry	2.30E-5	2/11/08	8D24001	PNNL-AGG-415
	Uranium 238	<5.64E-4	ug/g dry	5.64E-4	2/11/08	8D24001	PNNL-AGG-415
HEIS No.	**B1PN65**		**Lab ID:**	**0802012-03**			
14133-76-7	Technetium-99	<2.30E-5	ug/g dry	2.30E-5	2/11/08	8D24001	PNNL-AGG-415
	Uranium 238	<5.64E-4	ug/g dry	5.64E-4	2/11/08	8D24001	PNNL-AGG-415
HEIS No.	**B1RRJ6**		**Lab ID:**	**0802012-04**			
14133-76-7	Technetium-99	<2.30E-5	ug/g dry	2.30E-5	2/11/08	8D24001	PNNL-AGG-415
	Uranium 238	<5.63E-4	ug/g dry	5.63E-4	2/11/08	8D24001	PNNL-AGG-415
HEIS No.	**B1RRJ7**		**Lab ID:**	**0802012-05**			
14133-76-7	Technetium-99	<2.36E-5	ug/g dry	2.36E-5	2/11/08	8D24001	PNNL-AGG-415
	Uranium 238	<5.78E-4	ug/g dry	5.78E-4	2/11/08	8D24001	PNNL-AGG-415
HEIS No.	**B1RRJ8**		**Lab ID:**	**0802012-06**			
14133-76-7	Technetium-99	<2.30E-5	ug/g dry	2.30E-5	2/11/08	8D24001	PNNL-AGG-415
	Uranium 238	<5.64E-4	ug/g dry	5.64E-4	2/11/08	8D24001	PNNL-AGG-415

RCRA Metals By PNNL-AGG-415/Water Extract

CAS #	Analyte	Results	Units	EQL	Analyzed	Batch	Method
HEIS No.	**B1PN56**		**Lab ID:**	**0802011-01**			
14687-58-2	Selenium	<1.11E-2	ug/g dry	1.11E-2	2/07/08	8E01009	PNNL-AGG-415
HEIS No.	**B1PN57**		**Lab ID:**	**0802011-02**			
14687-58-2	Selenium	<1.11E-2	ug/g dry	1.11E-2	2/07/08	8E01009	PNNL-AGG-415
HEIS No.	**B1PN58**		**Lab ID:**	**0802011-03**			
14687-58-2	Selenium	<1.11E-2	ug/g dry	1.11E-2	2/07/08	8E01009	PNNL-AGG-415
HEIS No.	**B1PN59**		**Lab ID:**	**0802011-04**			
14687-58-2	Selenium	<1.11E-2	ug/g dry	1.11E-2	2/07/08	8E01009	PNNL-AGG-415
HEIS No.	**B1PN60**		**Lab ID:**	**0802011-05**			
14687-58-2	Selenium	1.13E-2	ug/g dry	1.10E-2	2/19/08	8E01009	PNNL-AGG-415
HEIS No.	**B1PN61**		**Lab ID:**	**0802011-06**			
14687-58-2	Selenium	1.13E-2	ug/g dry	1.11E-2	2/07/08	8E01009	PNNL-AGG-415
HEIS No.	**B1PN62**		**Lab ID:**	**0802011-07**			
14687-58-2	Selenium	<1.11E-2	ug/g dry	1.11E-2	2/07/08	8E01009	PNNL-AGG-415
HEIS No.	**B1PN63**		**Lab ID:**	**0802012-01**			
14687-58-2	Selenium	<1.11E-2	ug/g dry	1.11E-2	2/07/08	8E01009	PNNL-AGG-415
HEIS No.	**B1PN64**		**Lab ID:**	**0802012-02**			
14687-58-2	Selenium	<1.11E-2	ug/g dry	1.11E-2	2/07/08	8E01009	PNNL-AGG-415
HEIS No.	**B1PN65**		**Lab ID:**	**0802012-03**			
14687-58-2	Selenium	<1.11E-2	ug/g dry	1.11E-2	2/07/08	8E01009	PNNL-AGG-415
HEIS No.	**B1RRJ6**		**Lab ID:**	**0802012-04**			
14687-58-2	Selenium	<1.10E-2	ug/g dry	1.10E-2	2/07/08	8E01009	PNNL-AGG-415
HEIS No.	**B1RRJ7**		**Lab ID:**	**0802012-05**			
14687-58-2	Selenium	<1.13E-2	ug/g dry	1.13E-2	2/07/08	8E01009	PNNL-AGG-415
HEIS No.	**B1RRJ8**		**Lab ID:**	**0802012-06**			
14687-58-2	Selenium	<1.11E-2	ug/g dry	1.11E-2	2/07/08	8E01009	PNNL-AGG-415

Wet Chemistry - Quality Control
Environmental Science Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8D23015 - 1:1 Water Extract (pH_EC_Alk)										
Blank (8D23015-BLK1)				Prepared & Analyzed: 02/07/08						
Specific Conductance (EC)	<5.00E-3	5.00E-3	mS/cm							
Duplicate (8D23015-DUP1)		**Source: 0802011-04**		Prepared & Analyzed: 02/07/08						
Specific Conductance (EC)	2.80E-1	5.00E-3	mS/cm		2.88E-1			2.82	35	
pH	8.20E0	N/A	pH Units		8.27E0			0.850	35	
Duplicate (8D23015-DUP2)		**Source: 0802011-06**		Prepared & Analyzed: 02/07/08						
Specific Conductance (EC)	<5.00E-3	5.00E-3	mS/cm		2.64E-1				35	
pH	8.02E0	N/A	pH Units		8.06E0			0.498	35	
Batch 8D23016 - 1:1 Water Extract (pH_EC_Alk)										
Blank (8D23016-BLK1)				Prepared & Analyzed: 02/18/08						
Alkalinity as CaCO3	<2.35E1	2.35E1	ug/g wet							
Duplicate (8D23016-DUP1)		**Source: 0802011-04**		Prepared & Analyzed: 02/18/08						
Alkalinity as CaCO3	8.29E1	2.35E1	ug/g dry		8.93E1			7.43	35	

Anions by Ion Chromatography - Quality Control
Environmental Science Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8D25004 - 1:1 Water Extract (IC)										
Blank (8D25004-BLK1)				Prepared & Analyzed: 02/07/08						
Fluoride	<2.00E-1	2.00E-1	ug/g wet							
Nitrite	<1.00E0	1.00E0	"							
Nitrate	<1.00E0	1.00E0	"							
Sulfate	<1.50E0	1.50E0	"							
Phosphate	<1.50E0	1.50E0	"							
LCS (8D25004-BS1)				Prepared & Analyzed: 02/07/08						
Fluoride	2.03E0	2.00E-1	ug/g wet	2.00E0		102	80-120			
Nitrite	1.18E1	1.00E0	"	1.00E1		118	80-120			
Nitrate	1.05E1	1.00E0	"	1.00E1		105	80-120			
Sulfate	1.53E1	1.50E0	"	1.51E1		101	80-120			
Phosphate	1.49E1	1.50E0	"	1.51E1		99.1	80-120			
Duplicate (8D25004-DUP1)		**Source: 0802011-04**		Prepared & Analyzed: 02/07/08						
Fluoride	6.61E-1	2.00E-1	ug/g dry		6.11E-1			7.84	35	
Nitrite	<1.00E0	1.00E0	"		ND				35	
Nitrate	1.08E1	1.00E0	"		9.94E0			8.45	35	
Sulfate	3.85E1	1.50E0	"		4.02E1			4.34	35	
Phosphate	<1.50E0	1.50E0	"		ND				35	
Post Spike (8D25004-PS1)		**Source: 0802012-02**		Prepared & Analyzed: 02/07/08						
Fluoride	4.47E0	N/A	ug/mL	4.00E0	4.98E-1	99.3	75-125			
Nitrite	2.09E1	N/A	"	2.00E1	ND	104	75-125			
Nitrate	2.04E1	N/A	"	2.00E0	ND	102	75-125			
Sulfate	4.15E1	N/A	"	3.00E1	9.13E0	108	75-125			
Phosphate	3.26E1	N/A	"	3.00E1	ND	109	75-125			

Total Metals by PNNL-AGG-ICP-AES/Water Extract - Quality Control

Environmental Science Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8E01006 - 1:1 Water Extract (ICP/ICPMS)										
Blank (8E01006-BLK2)				Prepared: 02/06/08		Analyzed: 02/07/08				
Aluminum	<8.58E-2	8.58E-2	ug/g wet							
Calcium	<3.87E-1	3.87E-1	"							
Chromium	<3.33E-2	3.33E-2	"							
Potassium	<2.33E0	2.33E0	"							
Magnesium	<8.34E-2	8.34E-2	"							
Manganese	<1.71E-2	1.71E-2	"							
Sodium	<6.69E-1	6.69E-1	"							
LCS (8E01006-BS2)				Prepared: 02/06/08		Analyzed: 02/07/08				
Aluminum	4.64E0	8.58E-2	ug/g wet	5.00E0		93.0	80-120			
Calcium	4.93E0	3.87E-1	"	5.00E0		98.8	80-120			
Chromium	4.91E0	3.33E-2	"	5.00E0		98.3	80-120			
Potassium	4.85E1	2.33E0	"	5.00E1		97.2	80-120			
Magnesium	4.75E0	8.34E-2	"	5.00E0		95.1	80-120			
Manganese	4.92E0	1.71E-2	"	5.00E0		98.6	80-120			
Sodium	5.03E0	6.69E-1	"	5.00E0		101	80-120			
Duplicate (8E01006-DUP2)		**Source: 0802011-04**		Prepared: 02/06/08		Analyzed: 02/07/08				
Aluminum	<8.58E-2	8.58E-2	ug/g dry		ND				35	
Calcium	1.94E1	3.87E-1	"		2.04E1			4.78	35	
Chromium	<3.33E-2	3.33E-2	"		ND				35	
Potassium	8.01E0	2.33E0	"		8.47E0			5.68	35	
Magnesium	6.17E0	8.34E-2	"		6.56E0			6.17	35	
Manganese	<1.71E-2	1.71E-2	"		ND				35	
Sodium	2.25E1	6.69E-1	"		2.29E1			1.57	35	
Post Spike (8E01006-PS2)		**Source: 0802011-07**		Prepared: 02/06/08		Analyzed: 02/07/08				
Aluminum	8.87E2	N/A	ug/L	8.33E2	1.31E2	90.6	75-125			
Calcium	2.80E3	N/A	"	8.33E2	1.94E3	103	75-125			
Chromium	2.10E2	N/A	"	2.08E2	7.11E-2	101	75-125			
Potassium	4.07E3	N/A	"	2.08E3	1.97E3	101	75-125			
Magnesium	1.64E3	N/A	"	8.33E2	8.40E2	96.0	75-125			
Manganese	4.35E2	N/A	"	4.16E2	2.39E0	104	75-125			
Sodium	5.97E3	N/A	"	8.33E2	5.06E3	109	75-125			

Radionuclides by ICP-MS/Water Extract - Quality Control

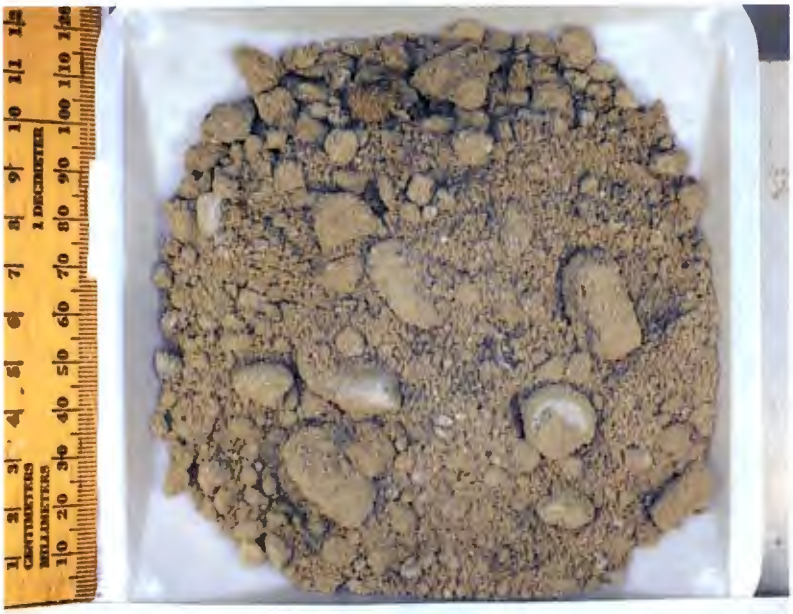
Environmental Science Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8D24001 - 1:1 Water Extract (ICP/ICPMS)										
Blank (8D24001-BLK2)				Prepared & Analyzed: 02/11/08						
Technetium-99	<2.30E-5	2.30E-5	ug/g wet							
Uranium 238	<5.64E-4	5.64E-4	"							
Duplicate (8D24001-DUP2)		Source: 0802011-04		Prepared & Analyzed: 02/11/08						
Technetium-99	<2.30E-5	2.30E-5	ug/g dry		ND				35	
Uranium 238	1.18E-3	5.64E-4	"		1.30E-3			9.63	35	
Post Spike (8D24001-PS2)		Source: 0802011-04		Prepared & Analyzed: 02/11/08						
Technetium-99	4.64E-1	N/A	ug/L	5.00E-1	1.50E-3	92.5	75-125			
Uranium 238	7.55E-1	N/A	"	5.00E-1	2.59E-1	99.2	75-125			

RCRA Metals By PNNL-AGG-415/Water Extract - Quality Control

Environmental Science Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8E01009 - 1:1 Water Extract (ICP/ICPMS)										
Blank (8E01009-BLK2)				Prepared & Analyzed: 02/07/08						
Selenium	<1.10E-2	1.10E-2	ug/g wet							
LCS (8E01009-BS2)				Prepared & Analyzed: 02/07/08						
Selenium	4.23E0	1.10E0	ug/g wet	5.00E0		84.7	80-120			
Duplicate (8E01009-DUP2)		**Source: 0802011-04**		Prepared & Analyzed: 02/07/08						
Selenium	<1.11E-2	1.11E-2	ug/g dry		ND				35	



C5861 B1RRJ8 175 ft Grab Sample

Depth from Chain-of-Custody

C5861 B1PN56 145 ft Grab Sample

Depth from Chain-of-Custody

C5861 B1PN57 148 ft Grab Sample

Depth from Chain-of-Custody

C5861 B1PN58 149 ft Grab Sample

Depth from Chain-of-Custody

C5861 B1PN59 152 ft Grab Sample

Depth from Chain-of-Custody

C5861 B1PN60 155 ft Grab Sample

Depth from Chain-of-Custody

C5861 B1PN61 157 ft Grab Sample

Depth from Chain-of-Custody

C5861 B1PN62 160 ft Grab Sample

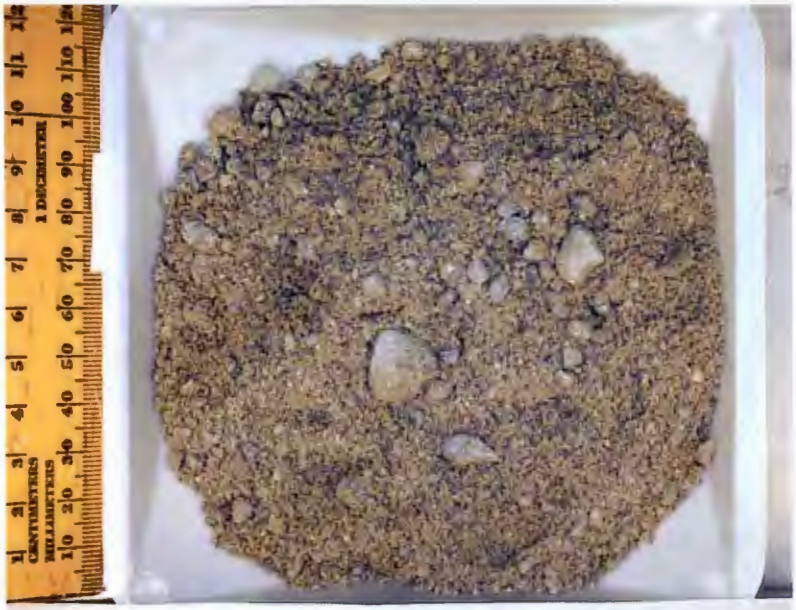
Depth from Chain-of-Custody

C5861 B1PN63 163 ft Grab Sample

Depth from Chain-of-Custody

C5861 B1PN64 165 ft Grab Sample

Depth from Chain-of-Custody



C5861 B1PN65 167.5 ft Grab Sample

Depth from Chain-of-Custody

C5861 B1RRJ6 170 ft Grab Sample

Depth from Chain-of-Custody

C5861 B1RRJ7 173.5 ft Grab Sample

Depth from Chain-of-Custody

Fluor Hanford Inc. | CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST | F07-079-004 | PAGE 1 OF 1

COLLECTOR NCO Sampler	**COMPANY CONTACT** Trent, SJ	**TELEPHONE NO.** 373-5869	**PROJECT COORDINATOR** TRENT, SJ	**PRICE CODE** 8N
DATA TURNAROUND 45 Days / 45 Days				
SAMPLING LOCATION C5861, I-1 145	**PROJECT DESIGNATION** 200-BP-5 OU Characterization for N Well - Geochemical Modeling Paramet		**SAF NO.** F07-079	**AIR QUALITY**
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA** 123270ES10	**METHOD OF SHIPMENT** GOVERNMENT VEHICLE	
SHIPPED TO PNNL Building 325	**OFFSITE PROPERTY NO.** N/A		**BILL OF LADING/AIR BILL NO.** N/A	

30

MATRIX*
A=Air
DL=Drum Liquids
DS=Drum Solids
L=Liquid
O=Oil
S=Soil
SE=Sediment
T=Tissue
V=Vegitation
W=Water
W1=Wipe
X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE
Utilize Lexan liners. Store and transport in vertical orientation

PRESERVATION	None	None
TYPE OF CONTAINER	G/P	Moisture Resistant Cont
NO. OF CONTAINER(S)	1	1
VOLUME	1L	200g
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Moisture Content - D2216;

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME		
B1PN56	SOIL	12-7-07	0841	X	X

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
J. Apse/	12-7-07	MC 745 FRIDGE #1	12-7-07 1615
MC745 Fridge 1	12/10/07 1540	J. Moulton	12/10/07 1545
J. Moulton	12/10/07 1600	D. Smith	12/10/07 1600

SPECIAL INSTRUCTIONS
(1)Gross Alpha; Gross Beta; Tritium - H3; I-129 by ICPMS {Iodine-129} Tc-99 by ICPMS {Technetium-99} Uranium by ICPMS {Uranium} ICP Metals - 6010B (TAL); ICP Metals - 6020 (TAL); 310.1_ALKALINITY: Alkalinity (1); IC Anions - 300.0; TIC - 415.1M {Total Inorganic Carbon} TOC - 415.1 {Total organic carbon} pH (Soil) - 9045;

LABORATORY SECTION	**RECEIVED BY**	**TITLE**	**DATE/TIME**
FINAL SAMPLE DISPOSITION	**DISPOSAL METHOD**	**DISPOSED BY**	**DATE/TIME**

Fluor Hanford Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F07-079-005

COLLECTOR
NCO Sampler

COMPANY CONTACT
Trent, SJ

TELEPHONE NO.
373-5869

PROJECT COORDINATOR
TRENT, SJ

PRICE CODE 8N

DATA TURNAROUND
45 Days / 45 Days

SAMPLING LOCATION
C5861, I-2 148'

PROJECT DESIGNATION
200-BP-5 OU Characterization for N Well - Geochemical Modeling Paramet

SAF NO.
F07-079

AIR QUALITY

ICE CHEST NO.

FIELD LOGBOOK NO.

COA
123270ES10

METHOD OF SHIPMENT
GOVERNMENT VEHICLE

31

SHIPPED TO
PNNL Building 325

OFFSITE PROPERTY NO.
N/A

BILL OF LADING/AIR BILL NO.
N/A

MATRIX*
A=Air
DL=Drum Liquids
DS=Drum Solids
L=Liquid
O=Oil
S=Soil
SE=Sediment
T=Tissue
V=Vegitation
W=Water
WI=Wipe
X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE
Utilize Lexan liners. Store and transport in vertical orientation

PRESERVATION	None	None
TYPE OF CONTAINER	G/P	Moisture Resistant Cont
NO. OF CONTAINER(S)	1	1
VOLUME	1L	200g
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Moisture Content - D2216;

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME		
B1PN57	SOIL	12-7-07	0930	X	X

CHAIN OF POSSESSION / **SIGN/ PRINT NAMES**

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
J. POPE/	12-7-07	MO 745 FRIDGE #1	12-7-07 / 1615
MO 745 REF 1	12/10/07 0940	J Munter	12/10/07
J Munter	12/10/07 1600	D Smith	12/10/07 1600

SPECIAL INSTRUCTIONS
(1)Gross Alpha; Gross Beta; Tritium - H3; I-129 by ICPMS {Iodine-129} Tc-99 by ICPMS {Technetium-99} Uranium by ICPMS {Uranium} ICP Metals - 6010B (TAL); ICP Metals - 6020 (TAL); 310.1_ALKALINITY: Alkalinity (1); IC Anions - 300.0; TIC - 415.1M {Total Inorganic Carbon} TOC - 415.1 {Total organic carbon} pH (Soil) - 9045;

LABORATORY SECTION — RECEIVED BY — TITLE — DATE/TIME

FINAL SAMPLE DISPOSITION — DISPOSAL METHOD — DISPOSED BY — DATE/TIME

Fluor Hanford Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F07-079-006

COLLECTOR
NCO Sampler

COMPANY CONTACT
Trent, SJ

TELEPHONE NO.
373-5869

PROJECT COORDINATOR
TRENT, SJ

PRICE CODE 8N

DATA TURNAROUND
45 Days / 45 Days

SAMPLING LOCATION
C5861, I-3 149'

PROJECT DESIGNATION
200-BP-5 OU Characterization for N Well - Geochemical Modeling Paramet

SAF NO.
F07-079

AIR QUALITY

ICE CHEST NO.

FIELD LOGBOOK NO.

COA
123270ES10

METHOD OF SHIPMENT
GOVERNMENT VEHICLE

32

SHIPPED TO
PNNL Building 325

OFFSITE PROPERTY NO.
N/A

BILL OF LADING/AIR BILL NO.
N/A

MATRIX*
A=Air
DL=Drum Liquids
DS=Drum Solids
L=Liquid
O=Oil
S=Soil
SE=Sediment
T=Tissue
V=Vegitation
W=Water
WI=Wipe
X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE
Utilize Lexan liners. Store and transport in vertical orientation

PRESERVATION	None	None
TYPE OF CONTAINER	G/P	Moisture Resistant Cont
NO. OF CONTAINER(S)	1	1
VOLUME	1L	200g
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Moisture Content - D2216;

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME		
B1PN58	SOIL	12-7-07	0937	X	X

CHAIN OF POSSESSION / **SIGN/ PRINT NAMES**

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
J. S. Pope / [signature]	12-7-07	MC 745 Fridge #1	12-7-07 1615
MC 745 Fridge #1	12/10/07 1540	J. Nuwer [signature]	12/10/07 1540
J. Nuwer [signature]	12/10/07 1600	D Smith [signature]	12/10/07 1600

SPECIAL INSTRUCTIONS
(1)Gross Alpha; Gross Beta; Tritium - H3; I-129 by ICPMS {Iodine-129} Tc-99 by ICPMS {Technetium-99} Uranium by ICPMS {Uranium} ICP Metals - 6010B (TAL); ICP Metals - 6020 (TAL); 310.1_ALKALINITY: Alkalinity (1); IC Anions - 300.0; TIC - 415.1M {Total Inorganic Carbon} TOC - 415.1 {Total organic carbon} pH (Soil) - 9045;

LABORATORY SECTION — RECEIVED BY — TITLE — DATE/TIME

FINAL SAMPLE DISPOSITION — DISPOSAL METHOD — DISPOSED BY — DATE/TIME

Fluor Hanford Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F07-079-007

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE	DATA TURNAROUND
NCO Sampler	Trent, SJ	373-5869	TRENT, SJ	8N	45 Days / 45 Days

SAMPLING LOCATION	PROJECT DESIGNATION	SAF NO.	AIR QUALITY
C5861, I-4 152'	200-BP-5 OU Characterization for N Well - Geochemical Modeling Paramet	F07-079	

ICE CHEST NO.	FIELD LOGBOOK NO.	COA	METHOD OF SHIPMENT
		123270ES10	GOVERNMENT VEHICLE

SHIPPED TO	OFFSITE PROPERTY NO.	BILL OF LADING/AIR BILL NO.
PNNL Building 325	N/A	N/A

33

MATRIX*
A=Air
DL=Drum Liquids
DS=Drum Solids
L=Liquid
O=Oil
S=Soil
SE=Sediment
T=Tissue
V=Vegitation
W=Water
WI=Wipe
X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE
Utilize Lexan liners. Store and transport in vertical orientation

PRESERVATION	None	None
TYPE OF CONTAINER	G/P	Moisture Resistant Cont
NO. OF CONTAINER(S)	1	1
VOLUME	1L	200g
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Moisture Content - D2216;

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME
B1PN59	SOIL	12-7-07	1033

CHAIN OF POSSESSION / **SIGN/ PRINT NAMES**

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
Chris Fulton	12-7-07	MO 745 FRIDGE #1	12-7-07 1615
MO 745 Fridge #1	12/10/07 540	J. Nowlin	12/10/07 540
J. Nowlin	12/10/07 1600	D Smith	12/10/07 1600

SPECIAL INSTRUCTIONS
(1)Gross Alpha; Gross Beta; Tritium - H3; I-129 by ICPMS {Iodine-129} Tc-99 by ICPMS {Technetium-99} Uranium by ICPMS {Uranium} ICP Metals - 6010B (TAL); ICP Metals - 6020 (TAL); 310.1_ALKALINITY: Alkalinity (1); IC Anions - 300.0; TIC - 415.1M {Total Inorganic Carbon} TOC - 415.1 {Total organic carbon} pH (Soil) - 9045;

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

Fluor Hanford Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F07-079-008

COLLECTOR NCO Sampler	**COMPANY CONTACT** Trent, SJ	**TELEPHONE NO.** 373-5869	**PROJECT COORDINATOR** TRENT, SJ
PRICE CODE 8N	**DATA TURNAROUND** 45 Days / 45 Days		
SAMPLING LOCATION C5861, I-5 155'	**PROJECT DESIGNATION** 200-BP-5 OU Characterization for N Well - Geochemical Modeling Paramet		**SAF NO.** F07-079
AIR QUALITY			
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA** 123270ES10	**METHOD OF SHIPMENT** GOVERNMENT VEHICLE
SHIPPED TO PNNL Building 325	**OFFSITE PROPERTY NO.** N/A		**BILL OF LADING/AIR BILL NO.** N/A

34

MATRIX*
A=Air
DL=Drum Liquids
DS=Drum Solids
L=Liquid
O=Oil
S=Soil
SE=Sediment
T=Tissue
V=Vegitation
W=Water
WI=Wipe
X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE
Utilize Lexan liners. Store and transport in vertical orientation

PRESERVATION	None	None
TYPE OF CONTAINER	G/P	Moisture Resistant Cont
NO. OF CONTAINER(S)	1	1
VOLUME	1L	200g
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Moisture Content - D2216;

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME		
B1PN60	SOIL	12-7-07	1350	X	X

CHAIN OF POSSESSION / SIGN/ PRINT NAMES

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
J.S. Pope	12-7-07	M6 745 FRIDGE #1	12-7-07/1425
M6 745 REF 1	12/10/07 1540	J Mowter	12/10/07 1540
J Mowter	12/10/07 16.00	D Smith	12/10/07 16.00

SPECIAL INSTRUCTIONS
(1)Gross Alpha; Gross Beta; Tritium - H3; I-129 by ICPMS {Iodine-129} Tc-99 by ICPMS {Technetium-99} Uranium by ICPMS {Uranium} ICP Metals - 6010B (TAL); ICP Metals - 6020 (TAL); 310.1_ALKALINITY: Alkalinity (1); IC Anions - 300.0; TIC - 415.1M {Total Inorganic Carbon} TOC - 415.1 {Total organic carbon} pH (Soil) - 9045;

LABORATORY SECTION	**RECEIVED BY**	**TITLE**	**DATE/TIME**
FINAL SAMPLE DISPOSITION	**DISPOSAL METHOD**	**DISPOSED BY**	**DATE/TIME**

Fluor Hanford Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F07-079-009

COLLECTOR
NCO Sampler

COMPANY CONTACT
Trent, SJ

TELEPHONE NO.
373-5869

PROJECT COORDINATOR
TRENT, SJ

PRICE CODE 8N

DATA TURNAROUND
45 Days / 45 Days

SAMPLING LOCATION
C5861, I-6 157'

PROJECT DESIGNATION
200-BP-5 OU Characterization for N Well - Geochemical Modeling Paramet

SAF NO.
F07-079

AIR QUALITY

ICE CHEST NO.

FIELD LOGBOOK NO.

COA
123270ES10

METHOD OF SHIPMENT
GOVERNMENT VEHICLE

35

SHIPPED TO
PNNL Building 325

OFFSITE PROPERTY NO.
N/A

BILL OF LADING/AIR BILL NO.
N/A

MATRIX*
A=Air
DL=Drum Liquids
DS=Drum Solids
L=Liquid
O=Oil
S=Soil
SE=Sediment
T=Tissue
V=Vegitation
W=Water
WI=Wipe
X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE
Utilize Lexan liners. Store and transport in vertical orientation

PRESERVATION	None	None
TYPE OF CONTAINER	G/P	Moisture Resistant Cont
NO. OF CONTAINER(S)	1	1
VOLUME	1L	200g
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Moisture Content - D2216;

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME										
B1PN61	SOIL	12-7-07	1400	X	X								

CHAIN OF POSSESSION / **SIGN/ PRINT NAMES**

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
J.S. Mae/ [signature]	12-7-07	MO 745 FRIDGE #1	12-7-07 / 1615
MO 745 FRIDGE #1	12/10/07 1540	J. McWen [signature]	12/10/07 1540
J. McWen [signature]	12/10/07 1610	D. Smith [signature]	12/10/07 16:20
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS
(1)Gross Alpha; Gross Beta; Tritium - H3; I-129 by ICPMS {Iodine-129} Tc-99 by ICPMS {Technetium-99} Uranium by ICPMS {Uranium} ICP Metals - 6010B (TAL); ICP Metals - 6020 (TAL); 310.1_ALKALINITY: Alkalinity (1); IC Anions - 300.0; TIC - 415.1M {Total Inorganic Carbon} TOC - 415.1 {Total organic carbon} pH (Soil) - 9045;

LABORATORY SECTION	**RECEIVED BY**	**TITLE**	**DATE/TIME**
FINAL SAMPLE DISPOSITION	**DISPOSAL METHOD**	**DISPOSED BY**	**DATE/TIME**

Fluor Hanford Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F07-079-010

COLLECTOR NCO Sampler	**COMPANY CONTACT** Trent, SJ	**TELEPHONE NO.** 373-5869	**PROJECT COORDINATOR** TRENT, SJ
PRICE CODE 8N	**DATA TURNAROUND** 45 Days / 45 Days		
SAMPLING LOCATION C5861, I-7 160'	**PROJECT DESIGNATION** 200-BP-5 OU Characterization for N Well - Geochemical Modeling Paramet		**SAF NO.** F07-079
AIR QUALITY			
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA** 123270ES10	**METHOD OF SHIPMENT** GOVERNMENT VEHICLE
SHIPPED TO PNNL Building 325	**OFFSITE PROPERTY NO.** N/A		**BILL OF LADING/AIR BILL NO.** N/A

36

MATRIX*
A=Air
DL=Drum Liquids
DS=Drum Solids
L=Liquid
O=Oil
S=Soil
SE=Sediment
T=Tissue
V=Vegitation
W=Water
WI=Wipe
X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE
Utilize Lexan liners. Store and transport in vertical orientation

PRESERVATION	None	None
TYPE OF CONTAINER	G/P	Moisture Resistant Cont
NO. OF CONTAINER(S)	1	1
VOLUME	1L	200g
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Moisture Content - D2216;

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME										
B1PN62	SOIL	12-7-07	1440	X	X								

CHAIN OF POSSESSION / **SIGN/ PRINT NAMES**

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
J.S. Pope/ASH	12-7-07	MO 745 FRIDGE #1	12-7-07 / 1615
MO 745 REF 1	12/10/07 1540	J. Mulvert	12/10/07 1540
J. Mulvert	12/10/07 16:00	D. Smith	12/10/07 16:00

SPECIAL INSTRUCTIONS
(1)Gross Alpha; Gross Beta; Tritium - H3; I-129 by ICPMS {Iodine-129} Tc-99 by ICPMS {Technetium-99} Uranium by ICPMS {Uranium} ICP Metals - 6010B (TAL); ICP Metals - 6020 (TAL); 310.1_ALKALINITY: Alkalinity (1); IC Anions - 300.0; TIC - 415.1M {Total Inorganic Carbon} TOC - 415.1 {Total organic carbon} pH (Soil) - 9045;

LABORATORY SECTION	**RECEIVED BY**	**TITLE**	**DATE/TIME**
FINAL SAMPLE DISPOSITION	**DISPOSAL METHOD**	**DISPOSED BY**	**DATE/TIME**

Fluor Hanford Inc. | CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST | F07-079-011 | PAGE 1 OF 1

COLLECTOR NCO Sampler Julian Patterson	**COMPANY CONTACT** Trent, SJ	**TELEPHONE NO.** 373-5869	**PROJECT COORDINATOR** TRENT, SJ
SAMPLING LOCATION C5861, I-8 165'	**PROJECT DESIGNATION** 200-BP-5 OU Characterization for N Well - Geochemical Modeling Paramet		**SAF NO.** F07-079
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**COA** 123270ES10	**METHOD OF SHIPMENT** GOVERNMENT VEHICLE
SHIPPED TO PNNL Building 325	**OFFSITE PROPERTY NO.** N/A		**BILL OF LADING/AIR BILL NO.** N/A

PRICE CODE 8N

AIR QUALITY

DATA TURNAROUND 45 Days / 45 Days

37

MATRIX*
A=Air
DL=Drum Liquids
DS=Drum Solids
L=Liquid
O=Oil
S=Soil
SE=Sediment
T=Tissue
V=Vegitation
W=Water
WI=Wipe
X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE
Utilize Lexan liners. Store and transport in vertical orientation

PRESERVATION	None	None
TYPE OF CONTAINER	G/P	Moisture Resistant Cont
NO. OF CONTAINER(S)	1	1
VOLUME	1L	200g
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Moisture Content - D2216;

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME
B1PN63	SOIL	12-10-07	0900

CHAIN OF POSSESSION / **SIGN/ PRINT NAMES**

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
R.D. Julian / [signature]	12-10-07 1615	M0745 Fridge 1	12-10-07 1615
M0745 Fridge 1	12-11-07 1300	Chris Fulton / [signature]	12-11-07 1300
Chris Fulton /	12-11-07 1330	Kenton Pool [signature]	12/11/07 13:30

SPECIAL INSTRUCTIONS
(1)Gross Alpha; Gross Beta; Tritium - H3; I-129 by ICPMS {Iodine-129} Tc-99 by ICPMS {Technetium-99} Uranium by ICPMS {Uranium} ICP Metals - 6010B (TAL); ICP Metals - 6020 (TAL); 310.1_ALKALINITY: Alkalinity (1); IC Anions - 300.0; TIC - 415.1M {Total Inorganic Carbon} TOC - 415.1 {Total organic carbon} pH (Soil) - 9045;

LABORATORY SECTION	**RECEIVED BY**	**TITLE**	**DATE/TIME**
FINAL SAMPLE DISPOSITION	**DISPOSAL METHOD**	**DISPOSED BY**	**DATE/TIME**

Fluor Hanford Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F07-079-012

COLLECTOR
NCO Sampler R. D. Jullan

COMPANY CONTACT
Trent, SJ

TELEPHONE NO.
373-5869

PROJECT COORDINATOR
TRENT, SJ

PRICE CODE 8N

DATA TURNAROUND
45 Days / 45 Days

SAMPLING LOCATION
C5861, I-9 165'

PROJECT DESIGNATION
200-BP-5 OU Characterization for N Well - Geochemical Modeling Paramet

SAF NO.
F07-079

AIR QUALITY

ICE CHEST NO.

FIELD LOGBOOK NO.

COA
123270ES10

METHOD OF SHIPMENT
GOVERNMENT VEHICLE

SHIPPED TO
PNNL Building 325

OFFSITE PROPERTY NO.
N/A

BILL OF LADING/AIR BILL NO.
N/A

38

MATRIX*
A=Air
DL=Drum Liquids
DS=Drum Solids
L=Liquid
O=Oil
S=Soil
SE=Sediment
T=Tissue
V=Vegitation
W=Water
WI=Wipe
X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE
Utilize Lexan liners. Store and transport in vertical orientation

PRESERVATION	None	None
TYPE OF CONTAINER	G/P	Moisture Resistant Cont
NO. OF CONTAINER(S)	1	1
VOLUME	1L	200g
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Moisture Content - D2216;

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME
B1PN64	SOIL	12-10-07	1023

CHAIN OF POSSESSION / **SIGN/ PRINT NAMES**

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
R. D. Jullan	12-10-07 1615	M0745 Fridge	12-10-07 1615
M0745 Fridge	12-11-07 1300	Chris Fulton	12-11-07 1300
Chris Fulton	12-11-07 1300	Kentucky Pod	12/11/07 13:30

SPECIAL INSTRUCTIONS
(1)Gross Alpha; Gross Beta; Tritium - H3; I-129 by ICPMS {Iodine-129} Tc-99 by ICPMS {Technetium-99} Uranium by ICPMS {Uranium} ICP Metals - 6010B (TAL); ICP Metals - 6020 (TAL); 310.1_ALKALINITY: Alkalinity (1); IC Anions - 300.0; TIC - 415.1M {Total Inorganic Carbon} TOC - 415.1 {Total organic carbon} pH (Soil) - 9045;

LABORATORY SECTION RECEIVED BY | TITLE | DATE/TIME

FINAL SAMPLE DISPOSITION DISPOSAL METHOD | DISPOSED BY | DATE/TIME

Fluor Hanford Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F07-079-013

COLLECTOR
NCO Sampler R. D. Julian

COMPANY CONTACT
Trent, SJ

TELEPHONE NO.
373-5869

PROJECT COORDINATOR
TRENT, SJ

PRICE CODE 8N

DATA TURNAROUND
45 Days / 45 Days

SAMPLING LOCATION
C5861, I-12 167.5'

PROJECT DESIGNATION
200-BP-5 OU Characterization for N Well - Geochemical Modeling Paramet

SAF NO.
F07-079

AIR QUALITY

ICE CHEST NO.

FIELD LOGBOOK NO.

COA
123270ES10

METHOD OF SHIPMENT
GOVERNMENT VEHICLE

SHIPPED TO
PNNL Building 325

OFFSITE PROPERTY NO.
N/A

BILL OF LADING/AIR BILL NO.
N/A

39

MATRIX*
A=Air
DL=Drum Liquids
DS=Drum Solids
L=Liquid
O=Oil
S=Soil
SE=Sediment
T=Tissue
V=Vegitation
W=Water
WI=Wipe
X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

PRESERVATION	None	None
TYPE OF CONTAINER	G/P	Moisture Resistant Cont
NO. OF CONTAINER(S)	1	1
VOLUME	1L	200g
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Moisture Content - D2216;

SPECIAL HANDLING AND/OR STORAGE
Utilize Lexan liners. Store and transport in vertical orientation

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME		
B1PN65	SOIL	12-10-07	1120	✓	✓

CHAIN OF POSSESSION / **SIGN/ PRINT NAMES**

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
R. D. Julian	12-10-07 1615	MO745 Fridge	12-10-07 1615
MO745 Fridge	12-11-07 1300	Chris Fulton	12-11-07 1300
Chris Fulton	12-11-07 1330	Karen Ford	12/11/07 13:30

SPECIAL INSTRUCTIONS
(1)Gross Alpha; Gross Beta; Tritium - H3; I-129 by ICPMS {Iodine-129} Tc-99 by ICPMS {Technetium-99} Uranium by ICPMS {Uranium} ICP Metals - 6010B (TAL); ICP Metals - 6020 (TAL); 310.1_ALKALINITY: Alkalinity (1); IC Anions - 300.0; TIC - 415.1M {Total Inorganic Carbon} TOC - 415.1 {Total organic carbon} pH (Soil) - 9045;

LABORATORY SECTION RECEIVED BY | TITLE | DATE/TIME

FINAL SAMPLE DISPOSITION DISPOSAL METHOD | DISPOSED BY | DATE/TIME

Fluor Hanford Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F07-079-017

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE	DATA TURNAROUND
NCO Sampler	Trent, SJ	373-5869	TRENT, SJ	8N	45 Days / 45 Days

SAMPLING LOCATION	PROJECT DESIGNATION	SAF NO.	AIR QUALITY
C5861, I-LWT-1 170'	200-BP-5 OU Characterization for N Well - Geochemical Modeling Paramet	F07-079	

ICE CHEST NO.	FIELD LOGBOOK NO.	ACTUAL SAMPLE DEPTH	COA	METHOD OF SHIPMENT
			123270ES10	GOVERNMENT VEHICLE

SHIPPED TO	OFFSITE PROPERTY NO.	BILL OF LADING/AIR BILL NO.
PNNL Building 325	N/A	N/A

40

MATRIX*
A=Air
DL=Drum Liquids
DS=Drum Solids
L=Liquid
O=Oil
S=Soil
SE=Sediment
T=Tissue
V=Vegitation
W=Water
WI=Wipe
X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	None	None
TYPE OF CONTAINER	G/P	Moisture Resistant Cont
NO. OF CONTAINER(S)	1	1
VOLUME	1L	200g
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Moisture Content - D2216;

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME										
B1RRJ6	SOIL	10-10-07	1350	✓	✓								

CHAIN OF POSSESSION / **SIGN/ PRINT NAMES**

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RJulian	12-10-07 1615	MO 745 Fedex	12-10-07 1615
MO 745 Fedex	12-11-07 1300	Chris Fulton	12-11-07 1300
Chris Fulton	12-11-07 1330	Karl Rod	12/11/07

SPECIAL INSTRUCTIONS
(1)Gross Alpha; Gross Beta; Tritium - H3; I-129 by ICPMS {Iodine-129} Tc-99 by ICPMS {Technetium-99} Uranium by ICPMS {Uranium} ICP Metals - 6010B (TAL); ICP Metals - 6020 (TAL); 310.1_ALKALINITY: Alkalinity (1); IC Anions - 300.0; TIC - 415.1M {Total Inorganic Carbon} TOC - 415.1 {Total organic carbon} pH (Soil) - 9045;

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

Fluor Hanford Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F07-079-018

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE	8N	DATA TURNAROUND
NCO Sampler	Trent, SJ	373-5869	TRENT, SJ			45 Days / 45 Days

SAMPLING LOCATION	PROJECT DESIGNATION	SAF NO.	AIR QUALITY
C5861, I-LWT-2 173.5'	200-BP-5 OU Characterization for N Well - Geochemical Modeling Paramet	F07-079	

ICE CHEST NO.	FIELD LOGBOOK NO.	ACTUAL SAMPLE DEPTH	COA	METHOD OF SHIPMENT
			123270ES10	GOVERNMENT VEHICLE

SHIPPED TO	OFFSITE PROPERTY NO.	BILL OF LADING/AIR BILL NO.
PNNL Building 325	N/A	N/A

MATRIX*
A=Air
DL=Drum Liquids
DS=Drum Solids
L=Liquid
O=Oil
S=Soil
SE=Sediment
T=Tissue
V=Vegitation
W=Water
WI=Wipe
X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	None	None
TYPE OF CONTAINER	G/P	Moisture Resistant Cont
NO. OF CONTAINER(S)	1	1
VOLUME	1L	200g
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Moisture Content - D2216;

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME										
B1RRJ7	SOIL	12-10-07	1425	✓	✓								

CHAIN OF POSSESSION / **SIGN/ PRINT NAMES**

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
R. Sulica	12-10-07 1615	M0745 Fridge 1	12-10-07 1615
M0745 Fridge 1	12-11-07 1300	Chris Fulton	12-11-07 1300
Chris Fulton	12-11-07 1330	Karl Rod	12-11-07 13:30

SPECIAL INSTRUCTIONS
(1)Gross Alpha; Gross Beta; Tritium - H3; I-129 by ICPMS {Iodine-129} Tc-99 by ICPMS {Technetium-99} Uranium by ICPMS {Uranium} ICP Metals - 6010B (TAL); ICP Metals - 6020 (TAL); 310.1_ALKALINITY: Alkalinity (1); IC Anions - 300.0; TIC - 415.1M {Total Inorganic Carbon} TOC - 415.1 {Total organic carbon} pH (Soil) - 9045;

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

41

Fluor Hanford Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F07-079-019

COLLECTOR NCO Sampler	**COMPANY CONTACT** Trent, SJ	**TELEPHONE NO.** 373-5869	**PROJECT COORDINATOR** TRENT, SJ	**PRICE CODE** 8N	**DATA TURNAROUND** 45 Days / 45 Days
SAMPLING LOCATION C5861, I-LWT-3 175'	**PROJECT DESIGNATION** 200-BP-5 OU Characterization for N Well - Geochemical Modeling Paramet		**SAF NO.** F07-079	**AIR QUALITY**	
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**ACTUAL SAMPLE DEPTH**	**COA** 123270ES10	**METHOD OF SHIPMENT** GOVERNMENT VEHICLE	
SHIPPED TO PNNL Building 325	**OFFSITE PROPERTY NO.** N/A		**BILL OF LADING/AIR BILL NO.** N/A		

42

MATRIX*
A=Air
DL=Drum Liquids
DS=Drum Solids
L=Liquid
O=Oil
S=Soil
SE=Sediment
T=Tissue
V=Vegitation
W=Water
WI=Wipe
X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	None	None
TYPE OF CONTAINER	G/P	Moisture Resistant Cont
NO. OF CONTAINER(S)	1	1
VOLUME	1L	200g
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Moisture Content - D2216;

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME										
B1RRJ8	SOIL	12-10-07	1520	✓	✓								

CHAIN OF POSSESSION

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
R. Sutton / [illegible]	12-10-07 1615	M0745 Fridge 1	12-10-07 1615
M0745 Fridge #1	12-11-07 1300	Chris Fulton / [illegible]	12-11-07 1300
Chris Fulton / [illegible]	12-11-07 1330	Karla Rod [illegible]	12-11-07 13:30

SIGN/ PRINT NAMES

SPECIAL INSTRUCTIONS
(1)Gross Alpha; Gross Beta; Tritium - H3; I-129 by ICPMS {Iodine-129} Tc-99 by ICPMS {Technetium-99} Uranium by ICPMS {Uranium} ICP Metals - 6010B (TAL); ICP Metals - 6020 (TAL); 310.1_ALKALINITY: Alkalinity (1); IC Anions - 300.0; TIC - 415.1M {Total Inorganic Carbon} TOC - 415.1 {Total organic carbon} pH (Soil) - 9045;

LABORATORY SECTION	**RECEIVED BY**	**TITLE**	**DATE/TIME**
FINAL SAMPLE DISPOSITION	**DISPOSAL METHOD**	**DISPOSED BY**	**DATE/TIME**