SECTION

R.W. RHINE INC.
SEATTLE-TACOMA
R.W. RHINE, INC.
1124 112th Street East
Tacoma, Washington 98445
253-537-5652 Tacoma 253-838-0551 Seattle
Fax 253-531-9548

LETTER OF TRANSMITTAL

SWMU # 10

DATE: 2-23-04
JOB NO.:
ATTENTION: Dean Montgomery
RE: IFB C40243

ENW
HAND DELIVERED

WE ARE SENDING YOU: [X] Attached [ ] Under separate cover via _____ the following items:

[ ] Shop drawings [ ] Prints [ ] Plans [ ] Samples [ ] Specifications
[ ] Copy of letter [ ] Change order [ ] _____

COPIES	DATE	NO.	DESCRIPTION
1	2-23-04		Submittal 02080-1.3 (Background Confirmatory Chemical and Rad Sampling Results)
			Bradley

THESE ARE TRANSMITTED as checked below:

[ ] For approval [ ] Approved as submitted [ ] Resubmit _____ copies for approval
[ ] For your use [ ] Approved as noted [ ] Submit _____ copies for distribution
[ ] As requested [ ] Returned for corrections [ ] Return _____ corrected prints
[X] For review and comment [ ] _____
[ ] FOR BIDS DUE _____ [ ] PRINTS RETURNED AFTER LOAN TO US

REMARKS
Attachments
- Spreadsheet correlating ENW Sample locations and results with RW Rhines sample locations and results
- Analytical results for RW Rhine samples
- Pictures + descriptions of samples + results taken in the Bone Yard
- TCLP results for RW Rhine samples - SWMU 10-7, 10-8, 10-9

COPY TO File, PCO # 11 File

SIGNED: Jean Baxter

If enclosures are not as noted, kindly notify us at once.

Demolition For Progress

R.W. RHINE INC.
SEATTLE-TACOMA

R. W. RHINE, INC. 1124 – 112TH ST. E. TACOMA, WA 98445-3798 TAC (253) 537-5852 SEA (253) 838-0551 FAX (253) 531-8548

February 23, 2004

Sampling Plan, Part 2 – Summary

The table below references RW Rhine's sample locations and results to Energy Northwest's sample locations and results for the Bone Yard. The bolded numbers in RW Rhines Sample Results column are going to need to be remediated.

ENW Sample Location	ENW Sample #	ENW Sample Results	RW Rhine Sample #	RW Rhine Sample Results	Action Level
#7 Bone Yard Resin 1	Sample #1	Alpha 28.65 pCi/g	SWMU # 10-12	Alpha 1.99E+01	23.5pCi/g
#7 Bone Yard Resin 1	Sample #2	Alpha 27.93 pCi/g	SWMU # 10-13-1	Alpha 1.21E+01	23.5pCi/g
#7 Bone yard Resin 3	Sample #4	Alpha 39.61 pCi/g	SWMU # 10-11	Alpha 1.57E+01	23.5pCi/g
#7 Bone Yard Resin 1	Sample #1	Lead 1200 mg/kg	SWMU # 10-13-2	**Lead 362 mg/kg**	250mg/kg
#7 Bone Yard Soil 3	Sample #10	Lead 290 mg/kg	SWMU # 10-8	**Lead 606 mg/kg**	250mg/kg
#7 Bone Yard Soil 3	Sample #10	Lead 7.7 mg/l	SWMU # 10-8	Lead .856 mg/l	5 mg/l
#7 Bone Yard Soil 3		Original samples did not exceed action levels.	SWMU # 10-7	**Diesel Range–5120 mg/kg** **Oil-Range – 34,100 mg/kg** **Lead – 669 mg/kg** Lead – 4.34 mg/l	2000mg/kg 2000mg/kg 250mg/kg 5 mg/l
#7 Bone Yard Soil 3		Original samples did not exceed action levels.	SWMU # 10-9	**Diesel Range–4320 mg/kg** **Oil-Range – 23,900 mg/kg** Chromium– 21.2 mg/kg Chromium – ND mg/l	2000mg/kg 2000mg/kg 400mg/kg 5 mg/l
#7 Bone Yard Resin 2	Sample #3	Chromium 670 mg/kg	SWMU # 10-6	Chromium – 12.3 mg/kg **Oil Range – 3080 mg/kg**	400mg/kg 2000mg/kg

Energy Northwest was notified through PCO #11 that some samples in the bone yard were above the MTCA cleanup levels. RW Rhine sent the samples off and had TCLP tests ran on them. As noted above in the spread sheet and in the attached documents the TCLP results are below the action limits. The diesel and oil samples can not have TCLP tests ran on them. Please advise by 3-1-04 as to how ENW would like RW Rhine to proceed with the clean-up activites in the Bone Yard.

xc. PCO #11 file

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17 February 2004

Gail Gislason
URS Corporation
1501 4th Ave, Suite 1400
Seattle, WA/USA 98101-1616
RE: Hanford Generation Plant

Enclosed are the results of analyses for samples received by the laboratory on 02/04/04 12:20. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jeff Gerdes

Jeff Gerdes
Project Manager

www.ncalabs.com

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URS Corporation	Project: Hanford Generation Plant	
1501 4th Ave, Suite 1400	Project Number: 33756194.00006	Reported:
Seattle, WA/USA 98101-1616	Project Manager: Gail Gisbson	02/17/04 12:32

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SWMU 10-13-2	B4B0115-01	Soil	02/03/04 14:00	02/04/04 12:20
SWMU 9-1	B4B0115-02	Soil	02/03/04 16:00	02/04/04 12:20
SWMU 9-2	B4B0115-03	Soil	02/03/04 16:15	02/04/04 12:20
SWMU 8-1	B4B0115-04	Soil	02/03/04 17:00	02/04/04 12:20
SWMU 8-2	B4B0115-05	Soil	02/03/04 17:15	02/04/04 12:20
SWMU 8-3	B4B0115-06	Soil	02/03/04 17:30	02/04/04 12:20

North Creek Analytical - Bothell

Jeff Gerdes

Jeff Gerdes, Project Manager

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URS Corporation	Project: Hanford Generation Plant	
1501 4th Ave, Suite 1400	Project Number: 33756194.00006	Reported:
Seattle, WA/USA 98101-1616	Project Manager: Gail Gislason	02/17/04 12:32

Semivolatile Petroleum Products by NWTPH-Dx (w/o Acid/Silica Gel Clean-up)

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SWMU 9-1 (B4B0115-02) Soil Sampled: 02/03/04 16:00 Received: 02/04/04 12:20									
Diesel Range Hydrocarbons	ND	10.0	mg/kg dry	1	4B11030	02/11/04	02/12/04	NWTPH-Dx	
Lube Oil Range Hydrocarbons	ND	25.0	"	"	"	"	"	"	
Surrogate: 2-FBP	*71.1 %*	*50-150*			"	"	"	"	
Surrogate: Octacosane	*81.7 %*	*50-150*			"	"	"	"	
SWMU 9-2 (B4B0115-03) Soil Sampled: 02/03/04 16:15 Received: 02/04/04 12:20									
Diesel Range Hydrocarbons	ND	10.0	mg/kg dry	1	4B11030	02/11/04	02/12/04	NWTPH-Dx	
Lube Oil Range Hydrocarbons	ND	25.0	"	"	"	"	"	"	
Surrogate: 2-FBP	*75.2 %*	*50-150*			"	"	"	"	
Surrogate: Octacosane	*80.8 %*	*50-150*			"	"	"	"	
SWMU 8-1 (B4B0115-04) Soil Sampled: 02/03/04 17:00 Received: 02/04/04 12:20									
Diesel Range Hydrocarbons	ND	10.0	mg/kg dry	1	4B11030	02/11/04	02/12/04	NWTPH-Dx	
Lube Oil Range Hydrocarbons	30.1	25.0	"	"	"	"	"	"	
Surrogate: 2-FBP	*73.1 %*	*50-150*			"	"	"	"	
Surrogate: Octacosane	*82.1 %*	*50-150*			"	"	"	"	

North Creek Analytical - Bothell

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Jeff Gerdes

Jeff Gerdes, Project Manager

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URS Corporation	Project: Hanford Generation Plant	
1501 4th Ave, Suite 1400	Project Number: 33756194.00006	Reported:
Seattle, WA/USA 98101-1616	Project Manager: Gail Gielasgo	02/17/04 12:32

Semivolatile Petroleum Products by NWTPH-Dx with Acid/Silica Gel Clean-up

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SWMU 8-2 (B4B01[5-05) Soil Sampled: 02/03/04 17:15 Received: 02/04/04 12:20									
Diesel Range Hydrocarbons	956	50.0	mg/kg dry	5	4B11031	02/11/04	02/12/04	NWTPH-Dx	D-09
Lube Oil Range Hydrocarbons	4160	500	"	20	"	"	02/12/04	"	
Surrogate: 2-FBP	*31.9 %*	*50-150*			"	"	*02/12/04*	"	
Surrogate: Octacosane	*174 %*	*50-150*			"	"	"	"	*S-04*
SWMU 8-3 (B4B01[5-06) Soil Sampled: 02/03/04 17:30 Received: 02/04/04 12:20									
Diesel Range Hydrocarbons	1040	50.0	mg/kg dry	5	4B11031	02/11/04	02/12/04	NWTPH-Dx	D-09
Lube Oil Range Hydrocarbons	7120	500	"	20	"	"	02/12/04	"	
Surrogate: 2-FBP	*%	*50-150*			"	"	*02/12/04*	"	*S-01*
Surrogate: Octacosane	*%	*50-150*			"	"	"	"	*S-01*

North Creek Analytical - Bothell

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Jeff Gendes

Jeff Gendes, Project Manager

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ORS Corporation	Project: Hanford Generation Plant	
1501 4th Ave, Suite 1400	Project Number: 33756194.00006	Reported:
Seattle, WA/USA 98101-1616	Project Manager: Gail Gislason	02/17/04 12:32

Total Metals by EPA 6000/7000 Series Methods

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SW51 (C 10-13-2 (B4B0115-01) Soil Sampled: 02/03/04 14:00 Received: 02/04/04 12:20									
Lead	362	1.00	mg/kg dry	2	4B09047	02/09/04	02/11/04	EPA 6020	

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Jeff Gerdes

Jeff Gerdes, Project Manager

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URS Corporation	Project: Hanford Generation Plant	
1501 4th Ave, Suite 1400	Project Number: 33756194.00006	Reported:
Seattle, WA/USA 98101-1616	Project Manager: Gail Gislason	02/17/04 12:32

Physical Parameters by APHA/ASTM/EPA Methods

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SWMU 10-13-2 (B4B0115-01) Soil Sampled: 02/03/04 14:00 Received: 02/04/04 12:20									
Dry Weight	98.7	1.00	%	1	4B13029	02/13/04	02/16/04	BSOPSPL003R08	
SWMU 9-1 (B4B0115-02) Soil Sampled: 02/03/04 16:00 Received: 02/04/04 12:20									
Dry Weight	86.7	1.00	%	1	4B13029	02/13/04	02/16/04	BSOPSPL003R08	
SWMU 9-2 (B4B0115-03) Soil Sampled: 02/03/04 16:15 Received: 02/04/04 12:20									
Dry Weight	85.7	1.00	%	1	4B13029	02/13/04	02/16/04	BSOPSPL003R08	
SWMU 8-1 (B4B0115-04) Soil Sampled: 02/03/04 17:00 Received: 02/04/04 12:20									
Dry Weight	82.3	1.00	%	1	4B13029	02/13/04	02/16/04	BSOPSPL003R08	
SWMU 8-2 (B4B0115-05) Soil Sampled: 02/03/04 17:15 Received: 02/04/04 12:20									
Dry Weight	72.2	1.00	%	1	4B13029	02/13/04	02/16/04	BSOPSPL003R08	
SWMU 8-3 (B4B0115-06) Soil Sampled: 02/03/04 17:30 Received: 02/04/04 12:20									
Dry Weight	86.5	1.00	%	1	4B13029	02/13/04	02/16/04	BSOPSPL003R08	

North Creek Analytical - Bothell

Jeff Gerdes

Jeff Gerdes, Project Manager

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URS Corporation	Project: Hanford Generation Plant	
1501 4th Ave, Suite 1400	Project Number: 33756194.00006	Reported:
Seattle, WA/USA 98101-1616	Project Manager: Gail Gislason	02/17/04 12:32

Semivolatile Petroleum Products by NWTPH-Dx (w/o Acid/Silica Gel Clean-up) - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4B11030: Prepared 02/11/04 Using EPA 3550B										
Blank (4B11030-BLK1)										
Diesel Range Hydrocarbons	ND	10.0	mg/kg							
Lube Oil Range Hydrocarbons	ND	25.0	"							
Surrogate: 2-FBP	*9.87*		"	*10.7*		*92.2*	*50-150*			
Surrogate: Octacosane	*4.83*		"	*5.33*		*90.6*	*50-150*			
LCS (4B11030-BS1)										
Diesel Range Hydrocarbons	56.6	10.0	mg/kg	66.7		84.9	71-120			
Surrogate: 2-FBP	*10.6*		"	*10.7*		*99.1*	*50-150*			
LCS Dup (4B11030-BSD1)										
Diesel Range Hydrocarbons	57.1	10.0	mg/kg	66.7		85.6	71-120	0.880	40	
Surrogate: 2-FBP	*10.5*		"	*10.7*		*98.1*	*50-150*			
Duplicate (4B11030-DUP1)					Source: B4B0264-03					
Diesel Range Hydrocarbons	47.2	10.0	mg/kg dry		46.5			1.49	40	
Lube Oil Range Hydrocarbons	76.2	25.0	"		120			44.6	40	Q-07
Surrogate: 2-FBP	*10.6*		"	*11.4*		*93.0*	*50-150*			
Surrogate: Octacosane	*5.56*		"	*5.71*		*97.4*	*50-150*			

North Creek Analytical - Bothell

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Jeff Gerdes

Jeff Gerdes, Project Manager

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URS Corporation	Project: Hanford Generation Plant	
1501 4th Ave, Suite 1400	Project Number: 33756194.00006	Reported:
Seattle, WA/USA 98101-1616	Project Manager: Gail Gislason	02/17/04 12:32

Semivolatile Petroleum Products by NWTPH-Dx with Acid/Silica Gel Clean-up - Quality Control

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4B11031: Prepared 02/11/04 Using EPA 3550B										
Blank (4B11031-BLK1)										
Diesel Range Hydrocarbons	ND	10.0	mg/kg							
Lube Oil Range Hydrocarbons	ND	25.0	"							
Surrogate: 2-FBP	*8.44*		"	*10.7*		*78.9*	*50-150*			
Surrogate: Octacosane	*5.05*		"	*5.33*		*94.7*	*50-150*			
LCS (4B11031-BS1)										
Diesel Range Hydrocarbons	58.2	10.0	mg/kg	66.7		87.3	61-120			
Surrogate: 2-FBP	*9.09*		"	*10.7*		*85.0*	*50-150*			
LCS Dup (4B11031-BSD1)										
Diesel Range Hydrocarbons	60.3	10.0	mg/kg	66.7		90.4	61-120	3.54	40	
Surrogate: 2-FBP	*9.17*		"	*10.7*		*85.7*	*50-150*			
Duplicate (4B11031-DUP1)					**Source: B4B0271-01**					
Diesel Range Hydrocarbons	12.1	10.0	mg/kg dry		14.0			14.6	50	
Lube Oil Range Hydrocarbons	ND	25.0	"		5.71				50	
Surrogate: 2-FBP	*5.45*		"	*11.8*		*71.4*	*50-150*			
Surrogate: Octacosane	*5.34*		"	*5.89*		*89.0*	*50-150*			

North Creek Analytical - Bothell

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Jeff Gerdes

Jeff Gerdes, Project Manager

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URS Corporation 1501 4th Ave, Suite 1400 Seattle, WA/USA 98101-1616	Project: Hanford Generation Plant Project Number: 13756194.00006 Project Manager: Gail Gislason	Reported: 02/17/04 12:32

Total Metals by EPA 6000/7000 Series Methods - Quality Control

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4B09047: Prepared 02/09/04 Using EPA 3050B										
Blank (4B09047-BLK1)										
Lead	ND	0.500	mg/kg							
LCS (4B09047-BS1)										
Lead	40.4	0.500	mg/kg	40.4		100	80-120			
LCS Dup (4B09047-BSD1)										
Lead	39.5	0.500	mg/kg	39.2		101	80-120	2.25	20	
Matrix Spike (4B09047-MS1)					Source: B4B0191-17					
Lead	48.1	0.500	mg/kg dry	45.3	2.60	101	62-137			
Matrix Spike Dup (4B09047-MSD1)					Source: B4B0191-17					
Lead	49.2	0.500	mg/kg dry	45.8	2.60	102	62-137	1.63	30	
Post Spike (4B09047-PS1)					Source: B4B0191-17					
Lead	0.105		ug/ml	0.100	0.00468	100	75-125			

North Creek Analytical - Bothell

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Jeff Gerdes

Jeff Gerdes, Project Manager

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URS Corporation	Project: Hanford Generation Plant	
1501 4th Ave, Suite 1400	Project Number: 37756194.00006	Reported:
Seattle, WA/USA 98101-1616	Project Manager: Gail Gislason	02/17/04 12:32

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4B13029: Prepared 02/13/04 Using Dry Weight										
Blank (4B13029-BLK1)										
Dry Weight	100	1.00	%							

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Jeff Gerdes

Jeff Gerdes, Project Manager

North Creek Analytical, Inc.
Environmental Laboratory Network

www.ncalabs.com

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541.383.9310 Fax 541.382.7588
Anchorage 2000 W Dimond Blvd, Suite A-10, Anchorage, AK 99502-1119
907.563.9200 Fax 907.563.9210

URS Corporation 1501 4th Ave, Suite 1400 Seattle, WA/USA 98101-1616	Project: Hanford Generating Plant Project Number: 33756194.00006 Project Manager: Gail Gislason	Reported: 02/17/04 12:32

Notes and Definitions

Q-09	Results in the diesel organics range are primarily due to overlap from a heavy oil range product.
Q-07	The RPD value for this QC sample is above the established control limit. Review of associated QC indicates the high RPD does not represent an out-of-control condition for the batch.
S-01	The surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interferences.
S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Analytical Data Package Prepared For

URS

Radiochemical Analysis By

STL Richland

2800 G.W. Way, Richland Wa, 99352, (509)-375-3131.

Assigned Laboratory Code: STLR

Data Package Contains 14 *Pages*

Report No.: 24896

SDG No.	Order No.	Client Sample ID (List Order)	Lab-Sa No.	Work Order	Report DB ID	Batch No.
25120		SWMU10-11	J4B050221-3	F844Q1AA	9F844Q10	4036428
		SWMU10-12	J4B050221-1	F843A1AA	9F843A10	4036428
		SWMU10-13-1	J4B050221-2	F844F1AA	9F844F10	4036428

SEVERN TRENT STL

CERTIFICATE OF ANALYSIS

STL Richland
2800 George Washington Way
Richland, WA 99354

Tel: 509 375 3131 Fax: 509 375 5590
www.stl-inc.com

February 12, 2004

URS Corporation
1501 4th Ave. Suite 1400
Seattle, WA 98101

Attn.: Gail Gislason

Date Received by Lab	:	February 5, 2004
Number and Type of Samples:		Three (3) Soil
SDG Number	:	25120
Project Name	:	HGP/URS
Project Number	:	33756194.00006

CASE NARRATIVE

I. Introduction

On February 5, 2004, the STL Richland laboratory received three soil samples for radiochemical analysis. Upon receipt, the samples were assigned the STL identification numbers as found on the first page of the attached report. These samples were assigned to Lot Number J4B050221.

II. Sample Receipt

The samples arrived in good condition and no anomalies were noted during check-in.

III. Analytical Results/Methodology

The analytical results for this report are presented by laboratory sample ID. Each set of data includes sample identification information, analytical results and the appropriate associated statistical errors.

The requested analysis was: Gas Proportional Counting
Gross Alpha by method RICH-RC-5013

IV. Quality Control

The analytical results for each analysis performed include a minimum of one Laboratory Control Sample (LCS) and one method (matrix) blank. Any exceptions have been noted in the "comments" section.

IV. Comments

Gas Proportional Counting
Alpha by method RICH-RC-5013
The LCS was recounted due to a low radiochemical recovery during the original count. The recount data is within acceptance limits. The duplicate analysis is not within acceptance limits but the data is accepted for the sample as the soil matrix is often inconsistent. Except as noted, the LCS, batch blank and sample results are within required acceptance limits.

I certify that this Certificate of Analysis is in compliance with the reference SOPs both technically and for completeness, for other than the conditions detailed above. The Laboratory Manager or a designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Reviewed and approved:

Theresa H. Kallsen
Project Management Assistant

Drinking Water Method Cross References

	DRINKING WATER ASTM METHOD CROSS REFERENCES	
Referenced Method	Isotope(s)	STL Richland's SOP number
EPA 901.1	Cs-134, I-131	RICH-RC-5017
EPA 900.0	Alpha & Beta	RICH-RC-5014
EPA 903.1	Ra-226	RICH-RC-5005
EPA 904.0	Ra-228	RICH-RC-5005
EPA 905.0	Sr89/90	RICH-RC-5006
ASTM D2460	Total Radium	RICH-RC-5027
Standard Method 7500-U-C & ASTM D5174	Uranium	RICH-RC-5058
EPA 906.0	Tritium	RICH-RC-5007
NOTE:		
The Gross Alpha LCS is prepared with Am-241 (unless otherwise specified in the case narrative)		
The Gross Beta LCS is prepared with SrY-90 (unless otherwise specified in the case narrative)		

Uncertainty Estimation

STL Richland has adopted the internationally accepted approach to estimating uncertainties described in "NIST Technical Note 1297, 1994 Edition". The approach, "Law of Propagation of Errors", involves the identification of all variables in an analytical method which are used to derive a result. These variables are related to the analytical result (R) by some functional relationship, R = constants * f(x,y,z,...). The components (x,y,z) are evaluated to determine their contribution to the overall method uncertainty. The individual component uncertainties (u_i) are then combined using a statistical model that provides the most probable overall uncertainty value. All component uncertainties are categorized as type A, evaluated by statistical methods, or type B, evaluated by other means. Uncertainties not included in the components, such as sample homogeneity, are combined with the component uncertainty as the square root of the sum-of-the-squares of the individual uncertainties. The uncertainty associated with the derived result is the combined uncertainty (u_c) multiplied by the coverage factor (1,2, or 3)

When three or more sample replicates are used to derive the analytical result, the type A uncertainty is the standard deviation of the mean value (S/√n), where S is the standard deviation of the derived results. The type B uncertainties are all other random or non-random components that are not included in the standard deviations.

The derivation of the general "Law of Propagation of Errors" equations and specific example are available on request.

Report Definitions

Action Lev	An agreed upon activity level used to trigger some action when the final result is greater than or equal to the Action Level. Often the Action Level is related to the Decision Limit.
Batch	The QC preparation batch number that relates laboratory samples to QC samples that were prepared and analyzed together.
Bias	Defined by the equation (Result/Expected)-1 as defined by ANSI N13.30.
COC No	Chain of Custody Number assigned by the Client or STL Richland.
Count Error (1s)	Poisson counting statistics of the gross sample count and background. The uncertainty is absolute and in the same units as the result. For Liquid Scintillation Counting (LSC) the batch blank count is the background.
Total Uncert (1s) u_c, Combined Uncertainty.	All known uncertainties associated with the preparation and analysis of the sample are propagated to give a measure of the uncertainty associated with the result, u_c the combined uncertainty. The uncertainty is absolute and in the same units as the result.
Uncs Coverage Factor	The coverage factor defines the width of the confidence interval, 1, 2 or 3 standard deviations.
CRDL (RL)	Contractual Required Detection Limit as defined in the Client's Statement Of Work or STL Richland "default" nominal detection limit. Often referred to the reporting level (RL)
Lc	Decision Level based on instrument background or blank, adjusted by the Efficiency, Chemical Yield, and Volume associated with the sample. The Type I error probability is approximately 5%. Lc=(1.645 * Sqrt(2*(BkgrndCnt/BkgrndCntMin)/SCntMin)) * (ConvFct/(Eff*Yld*Abn*Vol) * IngrFct). For LSC methods the batch blank is used as a measure of the background variability. Lc cannot be calculated when the background count is zero.
Lot-Sample No	The number assigned by the LIMS software to track samples received on the same day for a given client. The sample number is a sequential number assigned to each sample in the Lot.
MDC/MDA	Detection Level based on instrument background or blank, adjusted by the Efficiency, Chemical Yield, and Volume with a Type I and II error probability of approximately 5%. MDC = (4.65 * Sqrt((BkgrndCnt/BkgrndCntMin)/SCntMin) + 2.71/SCntMin) * (ConvFct/(Eff * Yld * Abn * Vol) * IngrFct). For LSC methods the batch blank is used as a measure of the background variability.
Primary Detector	The instrument identifier associated with the analysis of the sample aliquot.
Ratio U-234/U-238	The U-234 result divided by the U-238 result. The U-234/U-238 ratio for natural uranium in NIST SRM 4321C is 1.028.
Rs/MDC	Ratio of the Result to the MDC. A value greater than 1 may indicate activity above background at a high level of confidence. Caution should be used when applying this factor and it should be used in concert with the qualifiers associated with the result.
Rs/Total uncert	Ratio of the Result to the Total Uncertainty. If the uncertainty has a coverage factor of 2 a value greater than 1 may indicate activity above background at approximately the 95% level of confidence assuming a two-sided confidence interval. Caution should be used when applying this factor and it should be used in concert with the qualifiers associated with the result.
Report DB No	Sample Identifier used by the report system. The number is based upon the first five digits of the Work Order Number.
RPD	The equation Replicate Error Ratio = (S-D)/[sqrt($TPUs^2$ + $TPUd^2$)] as defined by ICPT 8OA where S is the original sample result, D is the result of the duplicate, TPUs is the total uncertainty of the original sample and TPUd is the total uncertainty of the duplicate sample.
SDG	Sample Delivery Group Number assigned by the Client or assigned by STL Richland upon sample receipt.
Sum Rpt Alpha Spec Rslts	The sum of the reported alpha spec results for tests derived from the same sample excluding duplicate results where the results are in the same units.
Work Order	The LIMS software assign test specific identifier.
Yield	The recovery of the tracer added to the sample such as Pu-242 used to trace a Pu-239/40 method.

Sample Results Summary

Date: 12-Feb-04

STL Richland STLR

Ordered by Method, Batch No., Client Sample ID.

Report No. : 24896

SDG No: 25120

Batch	Client Id / Work Order	Parameter	Result +- Uncertainty (2σ)	Qual	Units	Yield	MDC or MDA	CRDL	RER2
4036426 RICHRC5013									
SWMU10-11									
	F84HC1AA	ALPHA	1.57E+01 +- 7.42E+00		pCi/g	100%	6.06E+00	1.00E+01	
SWMU10-12									
	F843A1AA	ALPHA	1.99E+01 +- 9.32E+00		pCi/g	100%	9.58E+00	1.00E+01	
SWMU10-12 DUP									
	F843A1AC	ALPHA	7.99E+00 +- 5.30E+00	J	pCi/g	100%	7.31E+00	1.00E+01	
SWMU10-13-1									
	F844F1AA	ALPHA	1.21E+01 +- 6.24E+00		pCi/g	100%	5.93E+00	1.00E+01	

No. of Results: 4

STL Richland

ISTLRichSaSummary2 V4.05 A97

RER2 - Replicate Error Ratio = (S-D)/[sqrt(sq(TPU(s)+sq(TPU(d))] as defined by ICPT RQA.

J Qual - No U/< qualifier has been assigned and the result is below the Reporting Limit, RL (CRDL) or Report Value is Estimated.

QC Results Summary

Date: 12-Feb-04

STL Richland STLR

Ordered by Method, Batch No, QC Type,.

Report No. : 24896

SDG No.: 25120

Batch Work Order	Parameter	Result ± Uncertainty (2s)	Qual	Units	Yield	Recovery	Bias	MDC/MDA
RICHPC5013								
-036428 BLANK QC								
FBSH51AA	ALPHA	6.51E-01 ± 1.15E+00	U	pCi/g	100%			2.43E+00
-036428 LCS								
FBSH52AC	ALPHA	8.01E+01 ± 2.19E+01		pCi/g	100%	88%	-0.1	2.86E+00

No. of Results: 2

STL Richland

/STLRich-QcSum
mary V4.05 #97

Bias - (Result/Expected)-1 as defined by ANSI N13.30.

U Qual - Analyzed for, but the result is less than the Nde/Mdl/Total Uncert or gamma scan software did not identify the nuclide.

FORM I

SAMPLE RESULTS

Date: 12-Feb-04

Lab Name: STL Richland
Lot-Sample No.: J4B050221-3
[redacted]

SDG: 25120
Report No.: 24898
COC No.:

Collection Date: 2/3/2004 2:00:00 PM
Received Date: 2/5/2004 11:10:00 AM
Matrix: SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Unc(2 s)	MDC/MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUncert	Analysis, Prep Date	Total Sp Size	Aliquot Size	Primary Detector
Batch: 4030428	RICHRC5013			Work Order:	FS44Q1AA		Report DB ID:	9F6L4Q10				
ALPHA	1.57E+01		6.38E+00	7.42E+00	6.05E+00	pCi/g	100%	(2.6)	2/9/04 07:09 p		0.0501 G	GPIC10D
						2.25E+00	1.00E+01	(4.2)				

No. of Results: 1 Comments:

co

STL Richland
rptSTLRichSample
V4.06 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

FORM I

SAMPLE RESULTS

Date: 12-Feb-04

Lab Name:	STL Richland	SDG:	25120	Collection Date:	2/3/2004 3:00:00 PM
Lot-Sample No.:	J4B050221-1	Report No. :	24896	Received Date:	2/5/2004 11:10:00 AM
[redacted]		COC No. :		Matrix:	SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (± s)	Total Uncert (± s)	MDC/MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 4039428	RICHRC5013			Work Order:	F843A1AA		Report DB ID:	8F843A10				
ALPHA	1.69E+01		7.82E+00	9.38E+00	8.58E+00	pCi/g	100%	(2.1)	2/8/04 07:09 p		0.9501	GPC:0A
						3.89E+00	1.00E+01	(4.3)			G	

No. of Results: 1 Comments:

STL Richland
rptSTLRichSample
V4.05 A97

MDC/MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for, but the result is less than the Mdc/Mda/Total Uncert or gamma scan software did not identify the nuclide.

FORM I

Date: 12-Feb-04

SAMPLE RESULTS

Lab Name:	STL Richland	SDG:	25120	Collection Date:	7/3/2004 3:30:00 PM
Lot-Sample No.:	J4B050221-2	Report No. :	24896	Received Date:	2/5/2004 11:10:00 AM
[redacted]		COC No. :		Matrix:	SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 σ)	Total Uncert(2 σ)	MDC/MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 4038428	RICHRC5013			Work Order:	F344F1AA		Report DB ID:	9F344F10				
ALPHA	1.21E+01		5.58E+00	6.24E+00	5.93E+00	pCi/g	100%	(2.)	2/9/04 07:09 p		0.0501	GPC 10C
						2.22E+00	1.00E+01	(3.9)			G	

No. of Results: 1 Comments:

STL Richland
rpt6TLRichSample
V4.05 A97

MDC/MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for, but the result is less than the Mdc/Mda/Total Uncert or gamma scan software did not identify the nuclide.

FORM II

Date: 12-Feb-04

DUPLICATE RESULTS

Lab Name: STL Richland
Lot-Sample No.: J4B050221-1
[redacted]

SDG: 25120
Report No. : 24693
COC No. :

Collection Date: 2/3/2004 3:00:00 PM
Received Date: 2/5/2004 11:10:00 AM
Matrix: SOIL

Parameter	Result, Orig Rst	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC/MDA, Action Lev	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/Total/cert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 4038428	RICHPC5013			Work Order: F843A1AC		Report DB ID: F843A1CR			Orig Sa DB ID: 9F843A10			
ALPHA	7.99E+00	J	4.95E+00	5.30E+00	7.31E+00	pCi/g	100%	(1.1)	2/9/04 07:09 p		0.0516	GPC109
	1.00E+01		RER2 2.2			1.00E+01		(3.)			0	

No. of Results: 1 Comments:

STL Richland
rpt8STLRichDupV4.0-5 A97

RER2 - Replicate Error Ratio = [3.00/(sqrt(a(TPU)+sqrt(TPU))] as defined by ICPT BOA.
MDC/MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
J Qual - No Qualifier has been assigned and the result is below the Reporting Limit, RL (CRDL) or Report Value is Estimated.

FORM II

Date: 12-Feb-04

BLANK RESULTS

Lab Name: STL Richland

Matrix: SOIL

SDG: 25120

Report No. : 24896

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC/MDA, Lc	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 4036428	RICHRC5013			Work Order:	F86H51AA		Report DB ID:	F86H51AB				
ALPHA	6.51E-01	U	1.14E+00	1.15E+00	2.43E+00	pCi/g	100%	0.27	2/9/04 07:09 p		0.05	GPC10E
					9.56E-01	1.03E+01		(1.1)			g	

No. of Results: 1 Comments:

STL Richland
rpt8TLRichBlank
V4.06 A87

MDC/MDA,Lc - Detection, Isolation Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for, but the result is less than the Mdc/Mda/Total Uncert or gamma scan software did not identify the nuclide.

FORM II

LCS RESULTS

Date: 12-Feb-04

Lab Name: STL Richland

SDG: 25120

Matrix: SOIL

Report No. : 24898

Parameter	Result	Qual	Count Error (2 σ)	Total Uncert(2 σ)	MDC/MDA	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Primary Detector
Batch: 4039426	RICHRC5013			Work Order:	F85H52AC		Report DB ID:	F85H52CG					
ALPHA	8.01E+01		7.98E+00	2.19E+01	2.66E+00	pCi/g	100%	9.00E+01	2.65E+00	88%	2/11/04 10:24 a	0.05	GPC1DA
							Rec Limits:	70	130	-0.1		G	

No. of Results: 1 Comments:

13

STL Richland

rptSTLRichLcs
V4.03 A97

Bias = (Result/Expected)-1 as defined by ANSI N13.39.

CHAIN OF CUSTODY RECORD

Special Handling
☒ Standard TAT - 7 to 10 business days
☐ Rush TAT - Date Needed: ____
All TATs subject to laboratory approval.
Min. 24-hour notification needed for rushes.
All samples are disposed of after 60 days unless otherwise requested.

Page ____ of ____

Report To: Gail Gislason
UES Corporation
1501 Fourth Ave Ste 1400
Seattle WA 98101
Project Mgr.: Gail Gislason

Invoice To: Same
P.O. No.: Page # RQN: ____

Project No.: 33756177.00006
Site Name: Hanford Generation Plant
Location: Hanford State: WA
Sampler(s): Gail Gislason

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid
7=CH3OH 8=$NaHSO_4$ 9=____ 10=____

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW=Surface Water SO=Soil SL=Sludge A=Air
X1=____ X2=____ X3=____

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Preservative	Containers: # of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	Analyses: alpha						Notes:
AD	SWMU 10-12	2/3/04	15:00	SO		1			1		X						F843A
AD	SWMU 10-13-1	2/4/04	15:20	SO		1			1		X						F844F
AD	SWMU 10-13	2/5/04	14:00	SO		1			1		X						F844Q
AD																	
AD																	
AD																	
AD																	
AD																	
AD																	
AD																	

☐ Fax results when available to (Pete): 945-5258
☐ E-mail results when available to ____
Condition upon Receipt: ☐ Iced ☐ Ambient ☐ ____°C

Relinquished by:	Received by:	Date:	Time:
[signature]	[signature]	2/5/04	11:10

11 Stevens Avenue, Kelso, Washington 98626 (360) 423-7489 Fax (360) 423-7490 info@apexlabs.com

www.aealabs.com

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541.383.9310 fax 541.382.7586
Anchorage 2000 W International Airport Road, Suite A-10, Anchorage, AK 99502-1119
907.563.9200 fax 907.563.9210

15 January 2004

Gail Gislason
URS Corporation
1501 4th Ave, Suite 1400
Seattle, WA/USA 98101-1616
RE: HGP

Enclosed are the results of analyses for samples received by the laboratory on 10/13/03 13:50. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jeff Gerdes

Jeff Gerdes
Project Manager

www.nca-labs.com

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Anchorage 2000 W International Airport Road, Suite A-10, Anchorage, AK 99502-1119
907.563.9200 fax 907.563.9210

URS Corporation	Project: HGP	
1501 4th Ave, Suite 1400	Project Number: 33756194	Reported:
Seattle, WA/USA 98101-1616	Project Manager: Gail Gislason	01/15/04 13:23

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SWMV 10-7	B310357-32	Soil	10/09/03 17:10	10/13/03 13:50
SWMV 10-8	B310357-33	Soil	10/09/03 17:13	10/13/03 13:50
SWMV 10-9	B310357-34	Soil	10/09/03 17:16	10/13/03 13:50

North Creek Analytical - Bothell

Jeff Gerdes

Jeff Gerdes, Project Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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541.383.9310 fax 541.382.7588
Anchorage 3000 W International Airport Road, Suite A-10, Anchorage, AK 99502-1119
907.563.9200 fax 907.563.9210

URS Corporation	Project: HGP	
1501 4th Ave, Suite 1400	Project Number: 33756194	Reported:
Seattle, WA/USA 98101-1616	Project Manager: Gail Gislason	01/15/04 13:23

TCLP Metals by EPA 1311/6000/7000 Series Methods

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SWMV 10-7 (B3J0357-32) Soil Sampled: 10/09/03 17:10 Received: 10/13/03 13:50									
Lead	4.34	0.250	mg/l	1	4A14018	01/14/04	01/15/04	EPA 6010B	
SWMV 10-8 (B3J0357-33) Soil Sampled: 10/09/03 17:13 Received: 10/13/03 13:50									
Lead	0.856	0.250	mg/l	1	4A14018	01/14/04	01/15/04	EPA 6010B	
SWMV 10-9 (B3J0357-34) Soil Sampled: 10/09/03 17:16 Received: 10/13/03 13:50									
Chromium	ND	0.250	mg/l	1	4A14018	01/14/04	01/15/04	EPA 6010B	

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Jeff Gerdes

Jeff Gerdes, Project Manager

North Creek Analytical, Inc.
Environmental Laboratory Network

www.ncalabs.com

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425.420.9200 fax 425.420.9210
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776
509.924.9200 fax 509.924.9290
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132
503.906.9200 fax 503.906.9210
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711
541.383.9310 fax 541.382.7588
Anchorage 2000 W International Airport Road, Suite A-10, Anchorage, AK 99502-1119
907.563.9200 fax 907.563.9210

URS Corporation 1501 4th Ave, Suite 1400 Seattle, WA/USA 98101-1616	Project: HGP Project Number: 33756194 Project Manager: Gail Gislason	Reported: 01/15/04 13:23

TCLP Metals by EPA 1311/6000/7000 Series Methods - Quality Control

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4A14018: Prepared 01/14/04 Using EPA 3010A										
Blank (4A14018-BLK1)										
Chromium	ND	0.0500	mg/l							
Lead	ND	0.0500	"							
LCS (4A14018-BS1)										
Chromium	5.09	0.0500	mg/l	5.00		102	80-120			
Lead	5.38	0.0500	"	5.00		108	80-120			
LCS Dup (4A14018-BSD1)										
Chromium	5.01	0.0500	mg/l	5.00		100	80-120	1.58	20	
Lead	5.28	0.0500	"	5.00		106	80-120	1.68	20	
Matrix Spike (4A14018-MS1)					Source: B4A0204-02					
Chromium	5.11	0.0500	mg/l	5.00	0.000775	102	80-120			
Lead	5.43	0.0500	"	5.00	0.000675	109	80-120			
Matrix Spike Dup (4A14018-MSD1)					Source: B4A0204-02					
Chromium	5.09	0.0500	mg/l	5.00	0.000775	102	80-120	0.392	20	
Lead	5.39	0.0500	"	5.00	0.000675	108	80-120	0.739	20	

North Creek Analytical - Bothell

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Jeff Gerdes

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541.383.9310 fax 541.382.7588
Anchorage 2000 W International Airport Road, Suite A-10, Anchorage, AK 99502-1119
907.561.9200 fax 907.563.9210

HRS Corporation	Project: HGIP	
1501 4th Ave, Suite 1400	Project Number: 33756194	Reported:
Seattle, WA/USA 98101-1616	Project Manager: Gail Gislason	01/15/04 13:23

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

North Creek Analytical - Bothell

Jeff Gerdes

Jeff Gerdes, Project Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

SWMUs #9 + 10

LETTER OF TRANSMITTAL

R. W. RHINE, INC.
1124 112th Street East
Tacoma, Washington 98445
RHINER-W-346C1
253-537-5852 Tacoma 253-838-0551 Seattle
Fax 253-531-9548

DATE 4-22-04 JOB NO. #2885
ATTENTION Dean Montgomery
RE HGP - IFB C40243

TO ENW

WE ARE SENDING YOU X Attached ☐ Under separate cover via _____ the following items:

☐ Shop drawings ☐ Prints ☐ Plans ☐ Samples ☐ Specifications
☐ Copy of letter ☐ Change order ☑ Sample Analysis

COPIES	DATE	NO.	DESCRIPTION
1	4-22-04	Submittal 02080-1.3	Sampling Results

THESE ARE TRANSMITTED as checked below:

☐ For approval ☒ Approved as submitted ☐ Resubmit _____ copies for approval
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☐ For review and comment
☐ FOR BIDS DUE _____ ☐ PRINTS RETURNED AFTER LOAN TO US

REMARKS Attached are the results of the EOX, BTEX + TCLP for samples 10-7, 10-8 + 10-13-2 (UPS sample #s). Also attached are the results of the Garage French drain, guardshack and sanitary sump contents.

COPY TO File

SIGNED: Jon Bart

If enclosures are not as noted, kindly notify us at once.

4/14/4 9.15 AL.

Advanced Analytical Laboratory
(425) 497-0110, fax (425) 497-8089

AAL Job Number: A40416-1
Client: URS Corp.
Project Manager: Thomas Kim
Client Project Name: HGP
Client Project Number: 33756184
Date received: 04/16/04

Analytical Results

NWTPH-Dx, mg/kg		MTH BLK	SWMU-9-3	SWMU-3-1	SWMU-8-4	SWMU-8-4 Dupl	SWMU-8-4 RPD
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	04/16/04	04/16/04	04/16/04	04/16/04	04/16/04	04/16/04
Date analyzed	Limits	04/16/04	04/16/04	04/16/04	04/16/04	04/16/04	04/16/04
Kerosene/Jet fuel	20	nd	nd	nd	nd	nd	
Diesel/Fuel oil	20	nd	nd	nd	nd	nd	
Heavy oil	50	nd	nd	220	270	300	11%

Surrogate recoveries:

Fluorobiphenyl		108%	111%	110%	108%	110%	
o-Terphenyl		103%	105%	106%	104%	107%	

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits
na - not analyzed
C - coelution with sample peaks
M - matrix interference
J - estimated value
Results reported on dry-weight basis
Acceptable Recovery limits: 70% TO 130%
Acceptable RPD limit: 30%

Fax Pb & EDX - by end of Monday

Post-it® Fax Note 7671	Date 4/19/4 # of pages ▶30
To Thomas Kim	From Mr. Jenny
Co./Dept. URS	Co. Advanced Anal LT
Phone #	Phone #
Fax # 206 438 2699	Fax #

04/19/04 MON 08:07 ITX/RI NO 55561

Advanced Analytical Laboratory
(425) 497-0110, fax (425) 497-8089

AAL Job Number: A40416-1
Client: URS Corp.
Project Manager: Thomas Kim
Client Project Name: NGP
Client Project Number: 33756104
Date received: 04/16/04

Analytical Results

BTEX, ug/kg		MTH BLK	LCS	SWMU-10-7B	SWMU-10-8B	SWMU-10-13B
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	04/16/04	04/16/04	04/16/04	04/16/04	04/16/04
Date analyzed	Limits	04/16/04	04/16/04	04/16/04	04/16/04	04/16/04
Benzene	20	nd	84%	nd	nd	nd
Toluene	50	nd	125%	nd	nd	nd
Ethylbenzene	50	nd		nd	nd	nd
Xylenes	50	nd		nd	nd	nd
Surrogate recoveries:						
Trifluorotoluene		101%	102%	104%	107%	107%
Bromofluorobenzene		104%	100%	107%	114%	115%

Data Qualifiers and Analytical Comments:
nd - not detected at listed reporting limits
na - not analyzed
C - coelution with sample peaks
M - matrix interference
J - estimated value
Results reported on dry-weight basis
Acceptable Recovery limits: 70% TO 130%
Acceptable RPD limit: 30%

Advanced Analytical Laboratory
(425) 487-0110, fax (425) 487-8069

AAL Job Number: A40415-1
Client: URS Corp.
Project Manager: Thomas Kim
Client Project Name: HGP
Client Project Number: 33756184
Date received: 04/15/04

Analytical Results			MS	MSD	RPD
BTEX, mg/kg		MTH BLK	SWMU-10-13B	SWMU-10-13B	SWMU-10-13B
Matrix	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	04/16/04	04/16/04	04/16/04	04/16/04
Date analyzed	Limits	04/16/04	04/16/04	04/16/04	04/16/04
Benzene	20	nd	87%	93%	6%
Toluene	50	nd	127%	127%	0%
Ethylbenzene	50	nd			
Xylenes	50	nd			
Surrogate recoveries:					
Trifluorotoluene		101%	101%	101%	
Bromofluorobenzene		104%	107%	106%	

Data Qualifiers and Analytical Comments
nd - not detected at listed reporting limits
na - not analyzed
C - coelution with sample peaks
M - matrix interference
J - estimated value
Results reported on dry-weight basis
Acceptable Recovery limits: 70% TO 130%
Acceptable RPD limit: 30%

Advanced Analytical Laboratory
(425) 497-0110, fax (425) 497-8080

AAL Job Number:	A4041G-1b
Client:	URS Corp.
Project Manager:	Thomas Kim
Client Project Name:	HGP
Client Project Number:	33756194
Date received:	04/16/04

Analytical Results

Metals TCLP (7010), mg/L		MTH BLK	LCS	SWMU-10-13B	Dupl SWMU-10-13B
Matrix	Soil/Extract	Soil/Extract	Soil/Extract	Soil/Extract	Soil/Extract
Date extracted	Reporting	04/19/04	04/19/04	04/19/04	04/19/04
Date analyzed	Limits	04/19/04	04/19/04	04/19/04	04/19/04
Lead (Pb)	0.004	nd	113%	nd	nd

Data Qualifiers and Analytical Comments
nd - not detected at listed reporting limits
na - not analyzed
Acceptable Recovery Limits: 70% TO 130%
Acceptable RPD limit: 30%

Post-it® Fax Note 7671		Date 4/20/04	# of pages ▶ 3
To Thomas Kim		From Jac Ashan	
Co./Dept. URS		Co. Advanced Analytical	
Phone #		Phone #	
Fax # 866 495 5288		Fax #	

Page 1 of 1

AMTEST LABORATORIES

ANALYSIS REPORT

Advanced Analytical
2821 152nd Ave NE
Redmond, WA 98052
Attention: Val Ivanov

Date Received: 4/16/04
Date Reported: 4/19/04

Project Name: HGP
Project #: A40416-1

SOIL SAMPLES

PARAMETER	Units	Result
04-A004930 Client ID: SW MU 10-7B Date Sampled: 4/15/04, Extract Organic Halogen	ug/g	< 10
04-A004931 Client ID: SW MU 10-8B Date Sampled: 4/15/04, Extract Organic Halogen	ug/g	< 10
04-A004932 Client ID: SW MU 10-13B Date Sampled: 4/15/04, Extract Organic Halogen	ug/g	< 10

Reported by: Kathy Peggel

AMTEST LABORATORIES

Quality Control Summary

QC for 442054

04-4004950
04-4004951
04-4004952

DUPLICATES			sample value	duplicate value	RPD %
04-4004952	Dup: Total Organic Halogen	ug/g	< 10	< 10	

MATRIX SPIKES			sample value	sample+spk value	spike value	Recovery %

STANDARD REFERENCE MATERIALS			Measured value	True value	Recovery %
Known	SRM: Total Organic Halogen	ug/g	8.4	10.	84.0

BLANKS			Result
	BLANK: Total Organic Halogen	ug/g	< 10

SWMUs # 1, 3, 5, 6, 8, 9, 10

R. W. RHINE, INC.
1124 112th Street East
Tacoma, Washington 98445
253-537-5852 Tacoma 253-838-0551 Seattle
Fax 253-531-9548

LETTER OF TRANSMITTAL

DATE 4-27-04 JOB NO. #2885

ATTENTION Dean Montgomery

RE: EFB #C4024.3

TO ENW

WE ARE SENDING YOU ☐ Attached ☐ Under separate cover via _____ the following items:

☐ Shop drawings ☐ Prints ☐ Plans ☐ Samples ☐ Specifications

☐ Copy of letter ☐ Change order ☐ _____

COPIES	DATE	NO.	DESCRIPTION
	4-27-04		Submittal 02080-1.3

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☒ For review and comment ☐ _____

☐ FOR BIDS DUE _____ ☐ PRINTS RETURNED AFTER LOAN TO US

REMARKS Attached you will find:

1) Revised Summary of Confirmational Soil Analytical Results
2) TCLP results for SWMU 3-1 (Sanitary Drain/Trap - 50' elevation)
3) Chain-of-Custody for SWMUs 10-13-2, 9-1, 9-2, 8-1, 8-2, 8-3
4) Chain-of-Custody for SWMUs 1-5-1, 1-5-2, 1-5-3, 1-3-1, 1-3-2, 1-3-3, 1-9-3, 1-9-1, 1-9-2, 5-1, 5-2, 5-3, 5-4, 6-1, 6-2, 6-3, 6-4, 6-5, 6-6, 6-7, 6-8, 5-5, 5-6, 5-7, 5-8, 10-1, 10-2, 10-3, 10-4, 10-5, 10-6, 10-7, 10-8, 10-9, 10-10, 6-2 Dup
5) Analytical Data for the above referenced SWMUs listed in #4.

COPY TO File

SIGNED: Jean Beck

If enclosures are not as noted, kindly notify us at once.

Table 1
Summary of Confirmatory Soil Analytical Results
Hanford Generating Plant - Turbine Generator Building Demolition Project
Hanford, Washington

SWMU ID (Site Location)	Sample ID	Sample Date	Petroleum Hydrocarbons (mg/kg) Diesel Range[1]	Oil Range[1]	Mineral Oil	BTEX[1] (µg/kg)	PCBs[1] (Aroclor 1260) (µg/kg)	RCRA Metals[1] (mg/kg) Arsenic	Barium	Cadmium	Chromium	Mercury	Lead	Selenium	Silver	TCLP (Lead)[1] (mg/L)	EOC[1] (µg/kg)	Cobalt 60	Radio nuclides
SWMU H (Turbine Yard)	SWMU H-1-1	10/09/00	-	-	300	-	ND	-	-	-	-	-	-	-	-	-	-	-	-
	SWMU H-1-2	10/09/00	-	-	770	-	ND	-	-	-	-	-	-	-	-	-	-	-	-
	SWMU H-1-3	10/09/00	-	-	719	-	ND	-	-	-	-	-	-	-	-	-	-	-	-
	SWMU H-1-7	10/09/00	-	-	200	-	176	-	-	-	-	-	-	-	-	-	-	-	-
	SWMU H-1-2	10/09/00	-	-	300	-	ND	-	-	-	-	-	-	-	-	-	-	-	-
	SWMU H-1-8	10/09/00	-	-	90	-	ND	-	-	-	-	-	-	-	-	-	-	-	-
	SWMU H-1-1	10/09/00	-	-	59.1	-	ND	-	-	-	-	-	-	-	-	-	-	-	-
	SWMU H-1-3	10/09/00	-	-	300	-	354	-	-	-	-	-	-	-	-	-	-	-	-
	SWMU H-1-3	10/09/00	-	-	67.3	-	ND	-	-	-	-	-	-	-	-	-	-	-	-
(Turbine Building) Drain/Sump (located in turbine yard)	SWMU H-1	04/13/01	ND	200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SWMU J (Dis Yard)	SWMU J-1-1	10/09/00	ND	ND	-	-	-	1.91	59.1	ND	9.44	ND	9.99	ND	ND	-	-	ND	ND
	SWMU J-1-2	10/09/00	ND	ND	-	-	-	1.46	64.5	ND	9.17	ND	7.85	ND	ND	-	-	ND	ND
	SWMU J-1-3	10/09/00	ND	ND	-	-	-	1.79	62.9	ND	10.9	ND	12.9	ND	ND	-	-	ND	14.9
	SWMU J-1-4	10/09/00	ND	ND	-	-	-	1.72	55.4	ND	9.11	ND	9.81	ND	ND	-	-	ND	ND
	SWMU J-1-5	10/09/00	ND	ND	-	-	-	2.13	58.5	ND	9.97	ND	11.1	ND	ND	-	-	ND	13.5
	SWMU J-1-6	10/09/00	ND	ND	-	-	-	2.04	66.1	ND	9.63	ND	6.75	ND	ND	-	-	ND	ND
	SWMU J-1-7	10/09/00	ND	ND	-	-	-	2.07	63.1	ND	10.9	ND	4.47	ND	ND	-	-	ND	9.31
	SWMU J-1-8	10/09/00	ND	35.4	-	-	-	2.33	76.5	ND	11.2	ND	7.59	ND	ND	-	-	ND	21
SWMU K (Cooling Pond)	SWMU K-1	10/09/00	ND	ND	-	-	-	0.779	51.1	ND	11.4	ND	4.19	ND	ND	-	-	ND	13.8
	SWMU K-2	10/09/00	ND	ND	-	-	-	0.909	51.6	ND	9.82	ND	4.38	ND	ND	-	-	ND	ND
	SWMU K-3	10/09/00	ND	ND	-	-	-	1.50	73.4	ND	9.59	ND	6.79	0.796	ND	-	-	ND	ND
	SWMU K-4	10/09/00	ND	ND	-	-	-	1.73	69.6	ND	9.84	ND	6.20	0.531	ND	-	-	ND	18.7
	SWMU K-5	10/09/00	ND	ND	-	-	-	0.56	90.1	ND	13.5	ND	8.41	ND	ND	-	-	ND	13.5
	SWMU K-6	10/09/00	10	ND	-	-	-	2.12	79.4	ND	0.68	ND	14.8	ND	ND	-	-	ND	14.9
	SWMU K-7	10/09/00	ND	28.7	-	-	-	3.54	122	ND	18.5	ND	20.9	0.790	ND	-	-	1.51	17.4
	SWMU K-8	10/09/00	ND	ND	-	-	-	2.04	79.1	ND	12.7	ND	10.1	ND	ND	-	-	ND	12.5
MTCA Method A or B Soil Cleanup Level			2,000 (A)	2,000 (A)	2,000 (A)	-	1,200 (A)	20 (A)	5,600 (B)	2 (A)	2,000 (A)[1]	2 (A)	250 (A)	400 (B)	400 (B)	-	-	1.4 pCi/g (EPA MCL)	28.3 pCi/g (EPA MCL)

Table 1
Summary of Confirmational Soil Analytical Results
Hanford Generating Plant–Turbine Generator Building Demolition Project
Hanford, Washington

SWMU ID (Site Location)	Sample ID	Sample Date	Petroleum Hydrocarbons (mg/kg)			BTEX [1] (µg/kg)	PCBs [2] (Aroclor 1262) (µg/kg)	RCRA Metals [3] (mg/kg)								TCLP (Lead) [4] (mg/L)	BOX [5] (µg/kg)	Cobalt 60	Radio nuclides
			Diesel-Range [6]	Oil-Range [6]	Mineral Oil [6]			Arsenic	Barium	Cadmium	Chromium	Mercury	Lead	Selenium	Silver				
SWMU #8 Power Maintenance Garage	SWMU 8-1	02/05/04	ND	301	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	SWMU 8-2	02/05/04	994	4,100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	SWMU 8-3	02/05/04	1,040	7,120	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	SWMU 8-4	04/15/04	ND	270	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SWMU #9 Power Guard Shack	SWMU 9-1	02/05/04	ND	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	SWMU 9-2	02/05/04	ND	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	SWMU 9-3	04/15/04	ND	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SWMU #10 (Disposal "burn" pit)	SWMU 10-1	10/09/03	11 *	187	-	-	-	3.22	69.4	ND	11.2	ND	11.4	ND	ND	-	-	-	-
	SWMU 10-2	10/09/03	ND	ND	-	-	-	1.82	61.2	ND	9.36	ND	33.3	ND	ND	-	-	-	-
	SWMU 10-3	10/09/03	ND	97.4	-	-	-	1.76	47.5	ND	9.72	ND	9.54	ND	ND	-	-	-	-
	SWMU 10-4	10/09/03	11 *	119	-	-	-	1.77	70.6	ND	10.3	ND	14.1	ND	ND	-	-	-	-
	SWMU 10-5	10/09/03	19.2 *	407	-	-	-	1.70	95.5	ND	9.32	ND	11.8	ND	ND	-	-	-	-
	SWMU 10-6	10/09/03	648 *	3,000	-	-	-	2.37	160	ND	12.3	ND	9.84	ND	ND	-	-	-	-
	SWMU 10-7	10/09/03	5,130 *	34,100	-	-	-	3.98	349	1.46	32.6	ND	649	ND	1.69	-	-	-	-
	SWMU 10-7D	04/15/04	- -	-	-	ND	-	-	-	-	-	-	-	-	-	-	ND	-	-
	SWMU 10-8	10/09/03	4,510 *	34,400	-	-	-	3.40	300	0.84	12.9	ND	886	0.304	ND	-	-	-	-
	SWMU 10-8D	04/15/04	-	-	-	ND	-	-	-	-	-	-	-	-	-	-	ND	-	-
	SWMU 10-9	10/09/03	4,320 *	23,900	-	-	-	2.29	171	0.722	31.2	ND	222	ND	0.809	-	-	-	-
	SWMU-10-10-2	02/05/04	-	-	-	-	-	-	-	-	-	-	362	-	-	-	-	-	-
	SWMU-10-11D	04/15/04	-	-	-	ND	-	-	-	-	-	-	-	-	-	ND	ND	-	-
MTCA Method A or B Soil Cleanup Level			2,000 (A)	2,000 (A)	2,000 (A)	-	1,000 (A)	20 (A)	5,600 (B)	2 (A)	2,000 (A) [8]	2 (A)	250 (A)	400 (B)	400 (B)	-	-	1.4 pCi/g (EPA MCL)	23.5 pCi/g (EPA MCL)

Notes:
MTCA = Model Toxics Control Act (A) = Method A residential (B) = Method B
mg/kg = milligram per kilogram (parts per million)
µg/kg = microgram per kilogram (parts per billion)
pCi/g = pico-curies per gram (EPA Maximum Contaminant Level for Cobalt 60)
J = estimated value
ND = Not detected above the laboratory reporting limits.
"-" = not analyzed
Numbers in bold font indicate that the result reported exceeds the MTCA cleanup level.

[1] Samples analyzed using NWTPH-Dx extended method for diesel- and oil-range hydrocarbons, and mineral oil.
[2] BTEX = benzene, toluene, ethylbenzene, and xylene (samples analyzed using EPA Method 8021B).
[3] Samples analyzed using EPA Method 8082.
Remaining PCB (Aroclor) compounds were analyzed and were below the laboratory reporting limits.
[4] Samples analyzed using EPA Method 6000/7000 series.
[5] TCLP = Toxicity Characteristic Leachate Procedure (samples analyzed using EPA Method 6010B for lead).
[6] BOX = Extractable Organics (samples analyzed using EPA Method 8015).
[7] MTCA Method A cleanup level for total chromium.
* Sample results associated with overlap from heavy oil range product.

[redacted] North Creek Analytical

CHAIN OF CUSTODY RECORD

Special Handling:
- ☒ Standard TAT - 7 to 10 business days
- ☐ Rush TAT - Date Needed: _____
- All TATs subject to laboratory approval.
- Min. 24-hour notification needed for rushes
- All samples are disposed of after 60 days unless otherwise instructed.

Page 1 of 1

Report To: Gail Gislason
URS Corporation
1501 Fourth Ave. Ste 1900
Seattle, WA 98101

Project Mgr.: Gail Gislason

Invoice To: Same

P.O. No.: project # RQN: _____

Project No.: 23756199.00006
Site Name: Hanford Generation Plant
Location: Hanford State: WA
Sampler(s): Gail Gislason

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid
7=CH_3OH 8=$NaHSO_4$ 9=_____ 10=_____

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW=Surface Water SO=Soil SL=Sludge A=Air
X1=_____ X2=_____ X3=_____

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Preservative	# of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	Crystal Test		Notes:
AD	SWMU 9-1-2	2/6/04	14:00	SO		1			1		X		BABOLIS - 01
AD	SWMU 9-1		16:00	SO		1			1			hold, will call Jeff Gerdes to discuss which VOCs	02
AD	SWMU 9-2		16:15	SO		1			1				03
AD	SWMU 8-1		17:00	SO		1			1				04
AD	SWMU 8-2		17:15	SO		1			1				05
AD	SWMU 8-3		17:30	SO		1			1				06
AD													
AD													
AD													
AD													

☒ Fax results when available to (Sde) 495-5288
☐ E-mail results when available to _____
Condition upon Receipt: ☐ Iced ☐ Ambient ☐ ____°C

Relinquished by:	Received by:	Date:	Time:
[signature]	[signature]	2/4/04	1220

15.9 w/c

[redacted] • Amherst, Massachusetts 01002 • 413-[redacted] • Fax 413-[redacted] • www.spectrum-[redacted].com

nca

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3209 Denali St, Anchorage, AK 99503-4030 907-334-9200 FAX 334-9210

CHAIN OF CUSTODY REPORT

Work Order #: B3J0337

CLIENT: URS Corp.

REPORT TO: Gail Gislason
ADDRESS: 1501 - 4th Ave, Suite 1400
Seattle, WA 98101
PHONE: 206-438-2700 FAX: 866-495-5288

INVOICE TO: Gail.Gislason@urscorp.com

P.O. NUMBER:

PROJECT NAME: HGP
PROJECT NUMBER: 37756444
SAMPLED BY: Franklin

PRESERVATIVE

REQUESTED ANALYSES

TURNAROUND REQUEST
In Business Days *
Organic & Inorganic Analyses: 10 (STD) | 7 | 5 | 4 | 3 | 2 | 1 | <1
Petroleum Hydrocarbon Analyses: 5 (STD) | 4 | 3 | 2 | 1 | <1
OTHER Specify:
* Turnaround Requests less than standard may incur Rush Charges

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	Sample Type			MATRIX (W, S, O)	# OF CONT.	LOCATION / COMMENTS	NCA WO ID
1	SUMU1-5-1	10/9/03 12:30	X			S	1		01
2	SUMU1-5-2	12:32	X						02
3	SUMU1-5-3	12:34	X						03
4	SUMU1-3-1	12:42	X						04
5	SUMU1-3-2	12:48	X						05
6	SUMU1-3-3	12:50	X						06
7	SUMU1-9-3	13:18	X						07
8	SUMU1-9-1	13:08	X						08
9	SUMU1-9-2	13:12	X						09
10	SUMU5-1	13:40		X	X				10

RELEASED BY: Franklin — FIRM: URS — DATE: 10/13/03 — TIME: 11:20 Am
RECEIVED BY: Don Allen — FIRM: NCA — DATE: 10/13/03 — TIME: 11:20
RELEASED BY: Don Allen — FIRM: NCA — DATE: 10/13/03 — TIME: 1350
RECEIVED BY: [illegible] — FIRM: NCA — DATE: 10/13/03 — TIME: 13:50

ADDITIONAL INSTRUCTIONS:

WYD

TEMP: 0.0 | Page 1 of

E-5591

DOE/RL-2008-46-ADD5, REV. 0

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3109 Denali St, Anchorage, AK 99503-4030 907-334-9200 FAX 334-9210

CHAIN OF CUSTODY REPORT

Work Order #: B3J0357

CLIENT: UCS Corp

REPORT TO: Gail Gibbons

ADDRESS:

PHONE: 206-438-2700 FAX:

INVOICE TO: GAIL G.

P.O. NUMBER:

PROJECT NAME: 4SP (CONT'D)

PROJECT NUMBER: 35756194

SAMPLED BY: Thomas Kim

PRESERVATIVE

REQUESTED ANALYSES

TURNAROUND REQUEST

In Business Days *

Organic & Inorganic Analyses: 10 (STD) | 7 | 5 | 4 | 3 | 2 | 1 | <1

Petroleum Hydrocarbon Analyses: 5 (STD) | 4 | 3 | 2 | 1 | <1

OTHER Specify:

* Pre-scheduled Surcharges have been established for these Rush Charges

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	NA2S2O3	HCl	CHROMATE (COLOR)	NA2S2O3									MATRIX (W, S, O)	# OF CONT.	LOCATION / COMMENTS	NCA WO ID
1	SWMU5-2	10/9/03 13:48			X	X									S	1		11
2	SWMU5-3	13:55			X	X												12
3	SWMU5-4	14:00			X	X												13
4	SWMU6-1	14:57			X	X												14
5	SWMU6-2	15:02			X	X												15
6	SWMU6-3	15:05			X	X												16
7	SWMU6-4	15:10			X	X												17
8	SWMU6-5	15:17			X	X												18
9	SWMU6-6	15:20			X	X												19
10	SWMU6-7	15:25			X	X												20

RELEASED BY: Thomas Kim	DATE: 10/10/03	RECEIVED BY: Don Hobbs	DATE: 10/13/03
PRINT NAME: Thomas Kim FIRM: UCS	TIME: 1140 AM	PRINT NAME: Don Hobbs FIRM: NCA	TIME: 1120
RELEASED BY: Don Hobbs	DATE: 10/13/03	RECEIVED BY: [illegible]	DATE: 10/13/03
PRINT NAME: Don Hobbs FIRM: NCA	TIME: 1350	PRINT NAME: [illegible] FIRM: NCA	TIME: 13:50

ADDITIONAL REMARKS:

W/U

TEMP: 10.0

PAGE 2 OF

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3209 Denali St, Anchorage, AK 99503-4050 907-334-9200 FAX 334-9210

CHAIN OF CUSTODY REPORT

Work Order #: B3J0357

CLIENT: URS Corp.
REPORT TO: Gail G.
ADDRESS:
PHONE: 206 [illegible] FAX:
PROJECT NAME: HGF (cont'd)
PROJECT NUMBER: 3375694
SAMPLED BY: Thomas Klein

INVOICE TO: Gail G.
P.O. NUMBER:

TURNAROUND REQUEST (in Business Days *): Organic & Inorganic Analyses: 10 (Std), 7, 5, 4, 3, 2, 1, <1. Petroleum Hydrocarbon Analyses: 5 (Std), 4, 3, 2, 1, <1. OTHER Specify:
* Turnaround requests less than standard may incur Rush Charges.

PRESERVATIVE / REQUESTED ANALYSES

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	Total Metals	Dissolved Metals	Dissolved Metals	MATRIX (W, S, O)	# OF CONT.	LOCATION / COMMENTS	NCA WO ID
1	SWMU6-8	10/9/03 1530	X	X	2	S	1		21
2	SWMU 5-5	1620	X	X	2				22
3	SWMU 5-6	1625	X	X	2				23
4	SWMU5-7	1630	X	X	2				24
5	SWMU 5-8	1635	X	X	2				25
6	SWMU10-1	1647	X	X					26
7	SWMU10-2	1650	X	X					27
8	SWMU 10-3	1655	X	X					28
9	SWMU10-4	1700	X	X					29
10	SWMU 10-5	1703	X	X					30

RELEASED BY: Thomas Klein — DATE: 10/9/03
PRINT NAME: Thomas Klein — FIRM: URS — TIME: 11:20 Am
RECEIVED BY: [illegible] — DATE: 10/10/03
PRINT NAME: Don Holler — FIRM: NCA — TIME: 1350
RELEASED BY: [illegible] — DATE: 10/10/03
PRINT NAME: Don Holler — FIRM: NCA — TIME: 1350
RECEIVED BY: [illegible] — DATE: 10/15/03
PRINT NAME: [illegible] — FIRM: NCA — TIME: 1120
RECEIVED BY: [illegible] — DATE: 10.13.03
PRINT NAME: Donna Hardman — FIRM: NCA — TIME: 13:50

ADDITIONAL REMARKS: W/O 10.0 Page 3 of

DOE/RL-2008-46-ADD5, REV. 0

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Revised Chain of Custody

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CHAIN OF CUSTODY REPORT

Work Order #: B3J0357

CLIENT: URS Corp.
REPORT TO: Gail L.
ADDRESS:
PHONE: 206 438-2200 FAX:
PROJECT NAME: HGP (cont'd)
PROJECT NUMBER: 33756494
SAMPLED BY: Thomas Klein

INVOICE TO: Gail G.
P.O. NUMBER:

TURNAROUND REQUEST
In Business Days *
Organic & Inorganic Analyses: 10 (STD) 7 5 4 3 2 1 <1
Petroleum Hydrocarbon Analyses: 5 (STD) 4 3 2 1 <1
OTHER Specify:
* Turnaround Requests less than standard may incur Rush Charges.

PRESERVATIVE
REQUESTED ANALYSES

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	Regular	Lead - Hexavalent Chromium (Cancel)	Lead (Total) Ox										MATRIX (W, S, O)	# OF CONT.	LOCATION / COMMENTS	NCA WO ID
1	SWMU10-6	10/9/03 1706		X	X										S	1		31
2	SWMU10-7	1710		X	X													32
3	SWMU10-8	1713		X	X													33
4	SWMU10-9	1716		X	X													34
5	SWMU10-10	1720		X	X													35
6	CN SWMU 6-2(DUP)	10/9/03 15:00													S	1		36
7																		
8																		
9																		
10																		

RELEASED BY: Thomas Klein DATE: 10/13/03
PRINT NAME: Thomas Klein FIRM: URS TIME: 1120
RECEIVED BY: [illegible] DATE: 10/13/03
PRINT NAME: [illegible] FIRM: NCA TIME: 1120
RELEASED BY: Jon Holler DATE: 10/13/03
PRINT NAME: Jon Holler FIRM: NCA TIME: 1350
RECEIVED BY: [illegible]
PRINT NAME: Denn Hardman FIRM: NCA DATE: 10/13/03 TIME: 13:50
ADDITIONAL REMARKS:
COC INV #:
WO 10-0 PAGE 3 OF

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541.383.9110 fax 541.382.7588
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907.563.9200 fax 907.563.9210

01 December 2003

Gail Gislason
URS Corporation
1501 4th Ave, Suite 1400
Seattle, WA/USA 98101-1616

RE: HGP

Enclosed are amended results of analyses for samples received by the laboratory on 10/13/03 13:50. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jeff Gerdes

Jeff Gerdes
Project Manager

www.nwlabs.com

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907.561.9200 fax 907.563.9515

URS Corporation	Project: HOP	
1501 4th Ave, Suite 1400	Project Number: 35756194	**Amended Report**
Seattle, WA/USA 98101-1616	Project Manager: Gail Gislason	Issued: 12/01/03 11:21

ANALYTICAL REPORT FOR SAMPLES - Amended

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SWMV 1-5-1	B3J0357-01	Soil	10/09/03 12:30	10/13/03 13:50
SWMV 1-5-2	B3J0357-02	Soil	10/09/03 12:32	10/13/03 13:50
SWMV 1-5-3	B3J0357-03	Soil	10/09/03 12:34	10/13/03 13:50
SWMV 1-3-1	B3J0357-04	Soil	10/09/03 12:42	10/13/03 13:50
SWMV 1-3-2	B3J0357-05	Soil	10/09/03 12:48	10/13/03 13:50
SWMV 1-3-3	B3J0357-06	Soil	10/09/03 12:50	10/13/03 13:50
SWMV 1-9-3	B3J0357-07	Soil	10/09/03 13:18	10/13/03 13:50
SWMV 1-9-1	B3J0357-08	Soil	10/09/03 13:08	10/13/03 13:50
SWMV 1-9-2	B3J0357-09	Soil	10/09/03 13:12	10/13/03 13:50
SWMV 5-1	B3J0357-10	Soil	10/09/03 13:40	10/13/03 13:50
SWMV 5-2	B3J0357-11	Soil	10/09/03 13:48	10/13/03 13:50
SWMV 5-3	B3J0357-12	Soil	10/09/03 13:55	10/13/03 13:50
SWMV 5-4	B3J0357-13	Soil	10/09/03 14:00	10/13/03 13:50
SWMV 6-1	B3J0357-14	Soil	10/09/03 14:57	10/13/03 13:50
SWMV 6-2	B3J0357-15	Soil	10/09/03 15:02	10/13/03 13:50
SWMV 6-3	B3J0357-16	Soil	10/09/03 15:05	10/13/03 13:50
SWMV 6-4	B3J0357-17	Soil	10/09/03 15:10	10/13/03 13:50
SWMV 6-5	B3J0357-18	Soil	10/09/03 15:17	10/13/03 13:50
SWMV 6-6	B3J0357-19	Soil	10/09/03 15:20	10/13/03 13:50
SWMV 6-7	B3J0357-20	Soil	10/09/03 15:25	10/13/03 13:50
SWMV 6-8	B3J0357-21	Soil	10/09/03 15:30	10/13/03 13:50
SWMV 5-5	B3J0357-22	Soil	10/09/03 16:20	10/13/03 13:50
SWMV 5-6	B3J0357-23	Soil	10/09/03 16:25	10/13/03 13:50
SWMV 5-7	B3J0357-24	Soil	10/09/03 16:30	10/13/03 13:50
SWMV 5-8	B3J0357-25	Soil	10/09/03 16:35	10/13/03 13:50
SWMV 10-1	B3J0357-26	Soil	10/09/03 16:47	10/13/03 13:50
SWMV 10-2	B3J0357-27	Soil	10/09/03 16:50	10/13/03 13:50
SWMV 10-3	B3J0357-28	Soil	10/09/03 16:55	10/13/03 13:50
SWMV 10-4	B3J0357-29	Soil	10/09/03 17:00	10/13/03 13:50

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Jeff Gerdes

Jeff Gerdes, Project Manager

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907.563.9200 Fax 907.563.9115

URS Corporation 1501 4th Ave, Suite 1400 Seattle, WA/USA 98101-1616	Project: HGP Project Number: 33756194 Project Manager: Gail Gislason	Amended Report Issued: 12/01/03 11:21

ANALYTICAL REPORT FOR SAMPLES - Amended

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SWMV 10-5	B310357-30	Soil	10/09/03 17:03	10/13/03 13:50
SWMV 10-6	B310357-31	Soil	10/09/03 17:06	10/13/03 13:50
SWMV 10-7	B310357-32	Soil	10/09/03 17:10	10/13/03 13:50
SWMV 10-8	B310357-33	Soil	10/09/03 17:13	10/13/03 13:50
SWMV 10-9	B310357-34	Soil	10/09/03 17:16	10/13/03 13:50

North Creek Analytical - Bothell

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Jeff Gerdes

Jeff Gerdes, Project Manager

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URS Corporation	Project: HGP	
1501 4th Ave, Suite 1400	Project Number: 33756194	Amended Report
Seattle, WA/USA 98101-1616	Project Manager: Carl Gislason	Issued: 12/01/03 11:21

Semivolatile Petroleum Products by NWTPH-Dx (w/o Acid/Silica Gel Clean-up)

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SWMV 5-1 (B3J0357-10) Soil Sampled: 10/09/03 13:40 Received: 10/13/03 13:50									
Diesel Range Hydrocarbons	ND	10.0	mg/kg dry	1	3J16027	10/16/03	10/17/03	NWTPH-Dx	
Lube Oil Range Hydrocarbons	ND	25.0	"	"	"	"	"	"	
Surrogate: 2-FBP	*99.1 %*	*50-150*			"	"	"	"	
Surrogate: Octacosane	*114 %*	*57-120*			"	"	"	"	
SWMV 5-2 (B3J0357-11) Soil Sampled: 10/09/03 13:48 Received: 10/13/03 13:50									
Diesel Range Hydrocarbons	ND	10.0	mg/kg dry	1	3J16027	10/16/03	10/17/03	NWTPH-Dx	
Lube Oil Range Hydrocarbons	ND	25.0	"	"	"	"	"	"	
Surrogate: 2-FBP	*85.4 %*	*50-150*			"	"	"	"	
Surrogate: Octacosane	*103 %*	*57-120*			"	"	"	"	
SWMV 5-3 (B3J0357-12) Soil Sampled: 10/09/03 13:55 Received: 10/13/03 13:50									
Diesel Range Hydrocarbons	ND	10.0	mg/kg dry	1	3J16027	10/16/03	10/17/03	NWTPH-Dx	
Lube Oil Range Hydrocarbons	ND	25.0	"	"	"	"	"	"	
Surrogate: 2-FBP	*93.9 %*	*50-150*			"	"	"	"	
Surrogate: Octacosane	*104 %*	*57-120*			"	"	"	"	
SWMV 5-4 (B3J0357-13) Soil Sampled: 10/09/03 14:00 Received: 10/13/03 13:50									
Diesel Range Hydrocarbons	ND	10.0	mg/kg dry	1	3J16027	10/16/03	10/17/03	NWTPH-Dx	
Lube Oil Range Hydrocarbons	ND	25.0	"	"	"	"	"	"	
Surrogate: 2-FBP	*84.6 %*	*50-150*			"	"	"	"	
Surrogate: Octacosane	*107 %*	*57-120*			"	"	"	"	
SWMV 6-1 (B3J0357-14) Soil Sampled: 10/09/03 14:57 Received: 10/13/03 13:50									
Diesel Range Hydrocarbons	ND	10.0	mg/kg dry	1	3J16027	10/16/03	10/17/03	NWTPH-Dx	
Lube Oil Range Hydrocarbons	ND	25.0	"	"	"	"	"	"	
Surrogate: 2-FBP	*92.7 %*	*50-150*			"	"	"	"	
Surrogate: Octacosane	*110 %*	*57-120*			"	"	"	"	

North Creek Analytical - Bothell

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Jeff Gerdes

Jeff Gerdes, Project Manager

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907.563.9200 fax 907.563.9210

URS Corporation 1501 4th Ave, Suite 1400 Seattle, WA/USA 98101-1616	Project: HGP Project Number: 37736194 Project Manager: Gail Gislason	Amended Report Issued: 12/01/03 11:21

Semivolatile Petroleum Products by NWTPH-Dx (w/o Acid/Silica Gel Clean-up)

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SWMV 6-2 (B3J0357-15) Soil Sampled: 10/09/03 15:02 Received: 10/13/03 13:50									
Diesel Range Hydrocarbons	ND	10.0	mg/kg dry	1	3J16027	10/16/03	10/17/03	NWTPH-Dx	
Lube Oil Range Hydrocarbons	ND	25.0	"	"	"	"	"	"	
Surrogate: 2-FBP	*93.6 %*	*50-150*			"	"	"	"	
Surrogate: Octacosane	*112 %*	*57-120*			"	"	"	"	
SWMV 6-3 (B3J0357-16) Soil Sampled: 10/09/03 15:05 Received: 10/13/03 13:50									
Diesel Range Hydrocarbons	ND	10.0	mg/kg dry	1	3J16027	10/16/03	10/17/03	NWTPH-Dx	
Lube Oil Range Hydrocarbons	ND	25.0	"	"	"	"	"	"	
Surrogate: 2-FBP	*93.5 %*	*50-150*			"	"	"	"	
Surrogate: Octacosane	*115 %*	*57-120*			"	"	"	"	
SWMV 6-4 (B3J0357-17) Soil Sampled: 10/09/03 15:10 Received: 10/13/03 13:50									
Diesel Range Hydrocarbons	ND	10.0	mg/kg dry	1	3J16027	10/16/03	10/17/03	NWTPH-Dx	
Lube Oil Range Hydrocarbons	ND	25.0	"	"	"	"	"	"	
Surrogate: 2-FBP	*95.4 %*	*50-150*			"	"	"	"	
Surrogate: Octacosane	*112 %*	*57-120*			"	"	"	"	
SWMV 6-5 (B3J0357-18) Soil Sampled: 10/09/03 15:17 Received: 10/13/03 13:50									
Diesel Range Hydrocarbons	ND	10.0	mg/kg dry	1	3J16027	10/16/03	10/17/03	NWTPH-Dx	
Lube Oil Range Hydrocarbons	ND	25.0	"	"	"	"	"	"	
Surrogate: 2-FBP	*96.3 %*	*50-150*			"	"	"	"	
Surrogate: Octacosane	*110 %*	*57-120*			"	"	"	"	
SWMV 6-6 (B3J0357-19) Soil Sampled: 10/09/03 15:20 Received: 10/13/03 13:50									
Diesel Range Hydrocarbons	10.0	10.0	mg/kg dry	1	3J16027	10/16/03	10/17/03	NWTPH-Dx	
Lube Oil Range Hydrocarbons	ND	25.0	"	"	"	"	"	"	
Surrogate: 2-FBP	*91.9 %*	*50-150*			"	"	"	"	
Surrogate: Octacosane	*107 %*	*57-120*			"	"	"	"	

North Creek Analytical - Bothell

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URS Corporation	Project: HRIP	
1501 4th Ave, Suite 1400	Project Number: 33756194	**Amended Report**
Seattle, WA/USA 98101-1616	Project Manager: Gail Gleason	Issued: 12/01/03 11:21

Semivolatile Petroleum Products by NWTPH-Dx (w/o Acid/Silica Gel Clean-up)

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SWMV 6-7 (B3J0357-20) Soil Sampled: 10/09/03 15:25 Received: 10/13/03 13:50									
Diesel Range Hydrocarbons	ND	10.0	mg/kg dry	1	3J16027	10/16/03	10/17/03	NWTPH-Dx	
Lube Oil Range Hydrocarbons	28.7	25.0	"	"	"	"	"	"	
Surrogate: 2-FBP	*98.2 %*	*50-150*			"	"	"	"	
Surrogate: Octacosane	*112 %*	*57-120*			"	"	"	"	
SWMV 6-8 (B3J0357-21) Soil Sampled: 10/09/03 15:30 Received: 10/13/03 13:50									
Diesel Range Hydrocarbons	ND	10.0	mg/kg dry	1	3J16027	10/16/03	10/17/03	NWTPH-Dx	
Lube Oil Range Hydrocarbons	ND	25.0	"	"	"	"	"	"	
Surrogate: 2-FBP	*90.6 %*	*50-150*			"	"	"	"	
Surrogate: Octacosane	*108 %*	*57-120*			"	"	"	"	
SWMV 5-5 (B3J0357-22) Soil Sampled: 10/09/03 16:20 Received: 10/13/03 13:50									
Diesel Range Hydrocarbons	ND	10.0	mg/kg dry	1	3J16027	10/16/03	10/17/03	NWTPH-Dx	
Lube Oil Range Hydrocarbons	ND	25.0	"	"	"	"	"	"	
Surrogate: 2-FBP	*104 %*	*50-150*			"	"	"	"	
Surrogate: Octacosane	*115 %*	*57-120*			"	"	"	"	
SWMV 5-6 (B3J0357-23) Soil Sampled: 10/09/03 16:25 Received: 10/13/03 13:50									
Diesel Range Hydrocarbons	ND	10.0	mg/kg dry	1	3J16027	10/16/03	10/17/03	NWTPH-Dx	
Lube Oil Range Hydrocarbons	ND	25.0	"	"	"	"	"	"	
Surrogate: 2-FBP	*84.3 %*	*50-150*			"	"	"	"	
Surrogate: Octacosane	*100 %*	*57-120*			"	"	"	"	
SWMV 5-7 (B3J0357-24) Soil Sampled: 10/09/03 16:30 Received: 10/13/03 13:50									
Diesel Range Hydrocarbons	ND	10.0	mg/kg dry	1	3J16027	10/16/03	10/17/03	NWTPH-Dx	
Lube Oil Range Hydrocarbons	ND	25.0	"	"	"	"	"	"	
Surrogate: 2-FBP	*97.2 %*	*50-150*			"	"	"	"	
Surrogate: Octacosane	*117 %*	*57-120*			"	"	"	"	

North Creek Analytical - Bothell

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URS Corporation 1501 4th Ave, Suite 1400 Seattle, WA/USA 98101-1616	Project: IHGP Project Number: 33756194 Project Manager: Gail Gislason	Amended Report Issued: 12/01/03 11:21

Semivolatile Petroleum Products by NWTPH-Dx (w/o Acid/Silica Gel Clean-up)

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SWMV 5-6 (B3J0357-25) Soil Sampled: 10/09/03 16:35 Received: 10/13/03 13:50									
Diesel Range Hydrocarbons	ND	10.0	mg/kg dry	1	3316027	10/16/03	10/17/03	NWTPH-Dx	
Lube Oil Range Hydrocarbons	25.4	25.0	"	"	"	"	"	"	
Surrogate: 2-FBP	*92.4 %*	*50-150*			"	"	"	"	
Surrogate: Octacosane	*103 %*	*57-120*			"	"	"	"	
SWMV 10-1 (B3J0357-26) Soil Sampled: 10/09/03 16:47 Received: 10/13/03 13:50									
Diesel Range Hydrocarbons	18.0	10.0	mg/kg dry	1	3316027	10/16/03	10/17/03	NWTPH-Dx	D-09
Lube Oil Range Hydrocarbons	167	25.0	"	"	"	"	"	"	
Surrogate: 2-FBP	*89.7 %*	*50-150*			"	"	"	"	
Surrogate: Octacosane	*110 %*	*57-120*			"	"	"	"	
SWMV 10-2 (B3J0357-27) Soil Sampled: 10/09/03 16:50 Received: 10/13/03 13:50									
Diesel Range Hydrocarbons	ND	10.0	mg/kg dry	1	3316027	10/16/03	10/17/03	NWTPH-Dx	
Lube Oil Range Hydrocarbons	ND	25.0	"	"	"	"	"	"	
Surrogate: 2-FBP	*84.4 %*	*50-150*			"	"	"	"	
Surrogate: Octacosane	*105 %*	*57-120*			"	"	"	"	
SWMV 10-3 (B3J0357-28) Soil Sampled: 10/09/03 16:55 Received: 10/13/03 13:50									
Diesel Range Hydrocarbons	ND	10.0	mg/kg dry	1	3316027	10/16/03	10/17/03	NWTPH-Dx	
Lube Oil Range Hydrocarbons	37.6	25.0	"	"	"	"	"	"	
Surrogate: 2-FBP	*94.5 %*	*50-150*			"	"	"	"	
Surrogate: Octacosane	*116 %*	*57-120*			"	"	"	"	
SWMV 10-4 (B3J0357-29) Soil Sampled: 10/09/03 17:00 Received: 10/13/03 13:50									
Diesel Range Hydrocarbons	11.0	10.0	mg/kg dry	1	3316027	10/16/03	10/17/03	NWTPH-Dx	D-09
Lube Oil Range Hydrocarbons	139	25.0	"	"	"	"	"	"	
Surrogate: 2-FBP	*89.3 %*	*50-150*			"	"	"	"	
Surrogate: Octacosane	*103 %*	*57-120*			"	"	"	"	

North Creek Analytical - Bothell

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URS Corporation	Project: BGP	
1501 4th Ave, Suite 1400	Project Number: 53756194	Amended Report
Seattle, WA/USA 98101-1616	Project Manager: Gail Gislason	Issued: 12/01/03 11:21

Semivolatile Petroleum Products by NWTPH-Dx (w/o Acid/Silica Gel Clean-up)

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SWMV 10-5 (B3J0357-30) Soil Sampled: 10/09/03 17:03 Received: 10/13/03 13:50									
Diesel Range Hydrocarbons	59.2	20.0	mg/kg dry	2	3J16028	10/16/03	10/17/03	NWTPH-Dx	D-09
Lube Oil Range Hydrocarbons	407	50.0	"	"	"	"	"	"	
Surrogate: 2-FBP	83.4 %	*50-150*			"	"	"	"	
Surrogate: Octacosane	*116 %*	*57-120*			"	"	"	"	
SWMV 10-6 (B3J0357-31) Soil Sampled: 10/09/03 17:06 Received: 10/13/03 13:50									
Diesel Range Hydrocarbons	440	400	mg/kg dry	40	3J16028	10/16/03	10/16/03	NWTPH-Dx	D-09
Lube Oil Range Hydrocarbons	3050	1000	"	"	"	"	"	"	
Surrogate: 2-FBP	%	*50-150*			"	"	"	"	*S-01*
Surrogate: Octacosane	%	*57-120*			"	"	"	"	*S-01*
SWMV 10-7 (B3J0357-32) Soil Sampled: 10/09/03 17:10 Received: 10/13/03 13:50									
Diesel Range Hydrocarbons	5120	1010	mg/kg dry	40	3J16028	10/16/03	10/17/03	NWTPH-Dx	D-09
Lube Oil Range Hydrocarbons	34100	6290	"	100	"	"	10/17/03	"	
Surrogate: 2-FBP	%	*50-150*			"	"	*10/17/03*	"	*S-01*
Surrogate: Octacosane	%	*57-120*			"	"	*10/17/03*	"	*S-01*
SWMV 10-8 (B3J0357-33) Soil Sampled: 10/09/03 17:13 Received: 10/13/03 13:50									
Diesel Range Hydrocarbons	4510	1010	mg/kg dry	40	3J16028	10/16/03	10/17/03	NWTPH-Dx	D-09
Lube Oil Range Hydrocarbons	24400	2530	"	"	"	"	"	"	
Surrogate: 2-FBP	%	*50-150*			"	"	"	"	*S-01*
Surrogate: Octacosane	%	*57-120*			"	"	"	"	*S-01*
SWMV 10-9 (B3J0357-34) Soil Sampled: 10/09/03 17:16 Received: 10/13/03 13:50									
Diesel Range Hydrocarbons	4320	1010	mg/kg dry	40	3J16028	10/16/03	10/17/03	NWTPH-Dx	D-09
Lube Oil Range Hydrocarbons	23900	2530	"	"	"	"	"	"	
Surrogate: 2-FBP	%	*50-150*			"	"	"	"	*S-01*
Surrogate: Octacosane	%	*57-120*			"	"	"	"	*S-01*

North Creek Analytical - Bothell

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Jeff Gerdes, Project Manager

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URS Corporation 1501 4th Ave, Suite 1400 Seattle, WA/USA 98101-1616	Project: HGP Project Number: 33756194 Project Manager: Gail Gislason	Amended Report Issued: 12/01/03 11:21

Identified Semivolatile Petroleum Products by NWTPH-Dx (w/o Acid/Silica Gel Clean-up)

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SWMV 1-5-1 (B3J0357-01) Soil Sampled: 10/09/03 12:30 Received: 10/13/03 13:50									Q-29
Mineral Oil Range Hydrocarbons	ND	25.0	mg/kg dry	1	3K25023	11/25/03	11/27/03	NWTPH-Dx	
Surrogate: 2-FBP	*80.4 %*	*50-150*			"	"	"	"	
Surrogate: Octacosane	*95.9 %*	*57-120*			"	"	"	"	
SWMV 1-5-2 (B3J0357-02) Soil Sampled: 10/09/03 12:32 Received: 10/13/03 13:50									Q-29
Mineral Oil Range Hydrocarbons	ND	25.0	mg/kg dry	1	3K25023	11/25/03	11/27/03	NWTPH-Dx	
Surrogate: 2-FBP	*73.0 %*	*50-150*			"	"	"	"	
Surrogate: Octacosane	*92.3 %*	*57-120*			"	"	"	"	
SWMV 1-5-3 (B3J0357-03) Soil Sampled: 10/09/03 12:34 Received: 10/13/03 13:50									Q-29
Mineral Oil Range Hydrocarbons	ND	25.0	mg/kg dry	1	3K25023	11/25/03	11/27/03	NWTPH-Dx	
Surrogate: 2-FBP	*77.4 %*	*50-150*			"	"	"	"	
Surrogate: Octacosane	*[illegible] %*	*57-120*			"	"	"	"	
SWMV 1-3-1 (B3J0357-04) Soil Sampled: 10/09/03 12:42 Received: 10/13/03 13:50									Q-29
Mineral Oil Range Hydrocarbons	ND	25.0	mg/kg dry	1	3K25023	11/25/03	11/27/03	NWTPH-Dx	
Surrogate: 2-FBP	*80.0 %*	*50-150*			"	"	"	"	
Surrogate: Octacosane	*104 %*	*57-120*			"	"	"	"	
SWMV 1-3-2 (B3J0357-05) Soil Sampled: 10/09/03 12:48 Received: 10/13/03 13:50									Q-29
Mineral Oil Range Hydrocarbons	779	250	mg/kg dry	10	3K25023	11/25/03	11/29/03	NWTPH-Dx	D-09
Surrogate: 2-FBP	*177 %*	*50-150*			"	"	"	"	*S-06*
Surrogate: Octacosane	*911 %*	*57-120*			"	"	"	"	*S-06*
SWMV 1-3-3 (B3J0357-06) Soil Sampled: 10/09/03 12:50 Received: 10/13/03 13:50									Q-29
Mineral Oil Range Hydrocarbons	71.9	25.0	mg/kg dry	1	3K25023	11/25/03	11/29/03	NWTPH-Dx	D-09
Surrogate: 2-FBP	*80.0 %*	*50-150*			"	"	"	"	
Surrogate: Octacosane	*102 %*	*57-120*			"	"	*11/27/03*	"	

North Creek Analytical - Bothell

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URS Corporation	Project: TKGP	
1501 4th Ave, Suite 1400	Project Number: 33756194	Amended Report
Seattle, WA/USA 98101-1616	Project Manager: Gail Gislason	Issued: 12/01/03 11:21

Identified Semivolatile Petroleum Products by NWTPH-Dx (w/o Acid/Silica Gel Clean-up)

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SWMV 1-9-3 (B3J0357-07) Soil Sampled: 10/09/03 13:18 Received: 10/13/03 13:50									Q-29
Mineral Oil Range Hydrocarbons	62.2	25.0	mg/kg dry	1	3K25023	11/25/03	11/29/03	NWTPH-Dx	D-09
Surrogate: 2-FBP	*81.0 %*	*50-150*			"	"	"	"	
Surrogate: Octacosane	*114 %*	*57-120*			"	"	*11/27/03*	"	
SWMV 1-9-1 (B3J0357-08) Soil Sampled: 10/09/03 13:08 Received: 10/13/03 13:50									Q-29
Mineral Oil Range Hydrocarbons	59.1	25.0	mg/kg dry	1	3K25023	11/25/03	11/29/03	NWTPH-Dx	D-09
Surrogate: 2-FBP	*78.1 %*	*50-150*			"	"	"	"	
Surrogate: Octacosane	*103 %*	*57-120*			"	"	*11/27/03*	"	
SWMV 1-9-2 (B3J0357-09) Soil Sampled: 10/09/03 13:12 Received: 10/13/03 13:50									Q-29
Mineral Oil Range Hydrocarbons	ND	25.0	mg/kg dry	1	3K25023	11/25/03	11/29/03	NWTPH-Dx	D-09
Surrogate: 2-FBP	*78.1 %*	*50-150*			"	"	"	"	
Surrogate: Octacosane	*102 %*	*57-120*				"	"	"	

North Creek Analytical - Bothell

Jeff Gerdes

Jeff Gerdes, Project Manager

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URS Corporation 1501 4th Ave, Suite 1400 Seattle, WA/USA 98101-1616	Project: HGP Project Number: 33756194 Project Manager: Gail Gislason	**Amended Report** Issued: 12/01/03 11:21

Total Metals by EPA 6000/7000 Series Methods
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SWMV 5-1 (B3J0357-10) Soil Sampled: 10/09/03 13:40 Received: 10/13/03 13:50									
Silver	ND	0.500	mg/kg dry	1	3J14054	10/14/03	10/15/03	EPA 6020	
Arsenic	1.91	0.500	"	"	"	"	10/15/03	"	
Barium	59.8	5.00	"	"	"	"	"	"	
Cadmium	ND	0.500	"	"	"	"	10/16/03	"	
Chromium	9.44	0.500	"	"	"	"	10/15/03	"	
Mercury	ND	0.200	"	"	3J15034	10/15/03	10/15/03	EPA 7471A	
Lead	6.99	0.500	"	"	3J14054	10/14/03	10/15/03	EPA 6020	
Selenium	ND	0.500	"	"	"	"	"	"	
SWMV 5-2 (B3J0357-11) Soil Sampled: 10/09/03 13:40 Received: 10/13/03 13:50									
Silver	ND	0.641	mg/kg dry	1	3J14054	10/14/03	10/15/03	EPA 6020	
Arsenic	1.86	0.641	"	"	"	"	"	"	
Barium	63.7	6.41	"	"	"	"	"	"	
Cadmium	ND	0.641	"	"	"	"	"	"	
Chromium	9.13	0.641	"	"	"	"	"	"	
Mercury	ND	0.200	"	"	3J15034	10/15/03	10/15/03	EPA 7471A	
Lead	7.63	0.641	"	"	3J14054	10/14/03	10/15/03	EPA 6020	
Selenium	ND	0.641	"	"	"	"	"	"	
SWMV 5-3 (B3J0357-12) Soil Sampled: 10/09/03 13:55 Received: 10/13/03 13:50									
Silver	ND	0.500	mg/kg dry	1	3J14054	10/14/03	10/15/03	EPA 6020	
Arsenic	1.99	0.500	"	"	"	"	"	"	
Barium	62.0	5.00	"	"	"	"	"	"	
Cadmium	ND	0.500	"	"	"	"	"	"	
Chromium	10.9	0.500	"	"	"	"	"	"	
Mercury	ND	0.200	"	"	3J15034	10/15/03	10/15/03	EPA 7471A	
Lead	15.3	0.500	"	"	3J14054	10/14/03	10/15/03	EPA 6020	
Selenium	ND	0.500	"	"	"	"	"	"	

North Creek Analytical - Bothell

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Jeff Gerdes

Jeff Gerdes, Project Manager

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URS Corporation	Project: HGP	
1501 4th Ave, Suite 1400	Project Number: 33756194	Amended Report
Seattle, WA/USA 98101-1616	Project Manager: Gail Ghilarducci	Issued: 12/01/03 11:21

Total Metals by EPA 6000/7000 Series Methods

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SWMV 5-4 (B3J0357-13) Soil Sampled: 10/09/03 14:00 Received: 10/13/03 13:50									
Silver	ND	0.625	mg/kg dry	1	3J14054	10/14/03	10/15/03	EPA 6020	
Arsenic	1.72	0.625	"	"	"	"	"	"	
Barium	86.4	6.25	"	"	"	"	"	"	
Cadmium	ND	0.625	"	"	"	"	"	"	
Chromium	8.43	0.625	"	"	"	"	"	"	
Mercury	ND	0.200	"	"	3J15034	10/15/03	10/15/03	EPA 7471A	
Lead	9.88	0.625	"	"	3J14054	10/14/03	10/15/03	EPA 6020	
Selenium	ND	0.625	"	"	"	"	"	"	
SWMV 6-1 (B3J0357-14) Soil Sampled: 10/09/03 14:57 Received: 10/13/03 13:50									
Silver	ND	0.500	mg/kg dry	1	3J14054	10/14/03	10/16/03	EPA 6020	
Arsenic	0.770	0.500	"	"	"	"	10/15/03	"	
Barium	53.8	5.00	"	"	"	"	"	"	
Cadmium	ND	0.500	"	"	"	"	10/16/03	"	
Chromium	13.9	0.500	"	"	"	"	10/15/03	"	
Mercury	ND	0.200	"	"	3J15034	10/15/03	10/15/03	EPA 7471A	
Lead	4.19	0.500	"	"	3J14054	10/14/03	10/15/03	EPA 6020	
Selenium	ND	0.500	"	"	"	"	"	"	
SWMV 6-2 (B3J0357-15) Soil Sampled: 10/09/03 15:01 Received: 10/13/03 13:50									
Silver	ND	0.633	mg/kg dry	1	3J14054	10/14/03	10/16/03	EPA 6020	
Arsenic	0.909	0.633	"	"	"	"	10/15/03	"	
Barium	43.6	6.33	"	"	"	"	"	"	
Cadmium	ND	0.633	"	"	"	"	10/16/03	"	
Chromium	9.62	0.633	"	"	"	"	10/15/03	"	
Mercury	ND	0.200	"	"	3J15034	10/15/03	10/15/03	EPA 7471A	
Lead	4.26	0.633	"	"	3J14054	10/14/03	10/15/03	EPA 6020	
Selenium	ND	0.633	"	"	"	"	"	"	

North Creek Analytical - Bothell

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URS Corporation 1501 4th Ave, Suite 1400 Seattle, WA/USA 98101-1616	Project: HGP Project Number: 33756194 Project Manager: Gail Gislason	Amended Report Issued: 12/01/03 11:21

Total Metals by EPA 6000/7000 Series Methods

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SWMV 6-3 (B3J0357-16) Soil Sampled: 10/09/03 15:05 Received: 10/13/03 13:50									
Silver	ND	0.500	mg/kg dry	1	3314054	10/14/03	10/16/03	EPA 6020	
Arsenic	2.58	0.500	"	"	"	"	"	"	
Barium	72.4	5.00	"	"	"	"	"	"	
Cadmium	ND	0.500	"	"	"	"	"	"	
Chromium	9.59	0.500	"	"	"	"	"	"	
Mercury	ND	0.200	"	"	3315034	10/15/03	10/15/03	EPA 7471A	
Lead	6.71	0.500	"	"	3314054	10/14/03	10/16/03	EPA 6020	
Selenium	0.736	0.500	"	"	"	"	"	"	
SWMV 6-4 (B3J0357-17) Soil Sampled: 10/09/03 15:10 Received: 10/13/03 13:50									
Silver	ND	0.500	mg/kg dry	1	3314054	10/14/03	10/15/03	EPA 6020	
Arsenic	1.75	0.500	"	"	"	"	"	"	
Barium	59.6	5.00	"	"	"	"	"	"	
Cadmium	ND	0.500	"	"	"	"	"	"	
Chromium	9.08	0.500	"	"	"	"	"	"	
Mercury	ND	0.200	"	"	3315034	10/15/03	10/15/03	EPA 7471A	
Lead	6.22	0.500	"	"	3314054	10/14/03	10/15/03	EPA 6020	
Selenium	0.531	0.500	"	"	"	"	"	"	
SWMV 6-5 (B3J0357-18) Soil Sampled: 10/09/03 15:17 Received: 10/13/03 13:50									
Silver	ND	0.649	mg/kg dry	1	3314054	10/14/03	10/15/03	EPA 6020	
Arsenic	2.36	0.649	"	"	"	"	10/15/03	"	
Barium	94.2	6.49	"	"	"	"	"	"	
Cadmium	ND	0.649	"	"	"	"	10/16/03	"	
Chromium	13.3	0.649	"	"	"	"	10/15/03	"	
Mercury	ND	0.200	"	"	3315034	10/15/03	10/15/03	EPA 7471A	
Lead	8.47	0.649	"	"	3314054	10/14/03	10/15/03	EPA 6020	
Selenium	ND	0.649	"	"	"	"	"	"	

North Creek Analytical - Bothell

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URS Corporation	Project: IUGP	
1501 4th Ave, Suite 1400	Project Number: 33756194	Amended Report
Seattle, WA/USA 98101-1616	Project Manager: Gail Ojelayo	Issued: 12/01/03 11:21

Total Metals by EPA 6000/7000 Series Methods

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SWMV 6-6 (B3J0357-19) Soil Sampled: 10/09/03 15:20 Received: 10/13/03 13:50									
Silver	ND	0.704	mg/kg dry	1	3J14054	10/14/03	10/15/03	EPA 6020	
Arsenic	2.52	0.704	"	"	"	"	"	"	
Barium	78.9	7.04	"	"	"	"	"	"	
Cadmium	ND	0.704	"	"	"	"	"	"	
Chromium	16.0	0.704	"	"	"	"	"	"	
Mercury	ND	0.200	"	"	3J16014	10/16/03	10/16/03	EPA 7471A	
Lead	14.8	0.704	"	"	3J14054	10/14/03	10/15/03	EPA 6020	
Selenium	ND	0.704	"	"	"	"	"	"	
SWMV 6-7 (B3J0357-20) Soil Sampled: 10/09/03 15:25 Received: 10/13/03 13:50									
Silver	ND	0.746	mg/kg dry	1	3J14054	10/14/03	10/15/03	EPA 6020	
Arsenic	3.24	0.746	"	"	"	"	"	"	
Barium	122	7.46	"	"	"	"	"	"	
Cadmium	ND	0.746	"	"	"	"	"	"	
Chromium	18.5	0.746	"	"	"	"	"	"	
Mercury	ND	0.200	"	"	3J16014	10/16/03	10/16/03	EPA 7471A	
Lead	29.9	0.746	"	"	3J14054	10/14/03	10/15/03	EPA 6020	
Selenium	0.798	0.746	"	"	"	"	"	"	
SWMV 6-8 (B3J0357-21) Soil Sampled: 10/09/03 15:30 Received: 10/13/03 13:50									
Silver	ND	0.667	mg/kg dry	1	3J14054	10/14/03	10/15/03	EPA 6020	
Arsenic	2.04	0.667	"	"	"	"	"	"	
Barium	79.8	6.67	"	"	"	"	"	"	
Cadmium	ND	0.667	"	"	"	"	"	"	
Chromium	12.3	0.667	"	"	"	"	"	"	
Mercury	ND	0.200	"	"	3J16014	10/16/03	10/16/03	EPA 7471A	
Lead	10.2	0.667	"	"	3J14054	10/14/03	10/15/03	EPA 6020	
Selenium	ND	0.667	"	"	"	"	"	"	

North Creek Analytical - Bothell

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URS Corporation	Project: DGP	
1501 4th Ave, Suite 1400	Project Number: 33796194	**Amended Report**
Seattle, WA/USA 98101-1616	Project Manager: Gail Cicilenna	Issued: 12/01/03 11:21

Total Metals by EPA 6000/7000 Series Methods

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SWMV 5-5 (B3J0357-22) Soil Sampled: 10/09/03 16:20 Received: 10/13/03 13:50									
Silver	ND	0.667	mg/kg dry	1	3J14054	10/14/03	10/15/03	EPA 6020	
Arsenic	1.83	0.667	"	"	"	"	"	"	
Barium	60.5	6.67	"	"	"	"	"	"	
Cadmium	ND	0.667	"	"	"	"	"	"	
Chromium	9.97	0.667	"	"	"	"	"	"	
Mercury	ND	0.200	"	"	3J15014	10/16/03	10/16/03	EPA 7471A	
Lead	11.1	0.667	"	"	3J14054	10/14/03	10/15/03	EPA 6020	
Selenium	ND	0.667	"	"	"	"	"	"	
SWMV 5-6 (B3J0357-23) Soil Sampled: 10/09/03 16:25 Received: 10/13/03 13:50									
Silver	ND	0.500	mg/kg dry	1	3J15023	10/15/03	10/16/03	EPA 6020	
Arsenic	1.04	0.500	"	"	"	"	10/17/03	"	
Barium	66.8	5.00	"	"	"	"	10/16/03	"	
Cadmium	ND	0.500	"	"	"	"	"	"	
Chromium	9.62	0.500	"	"	"	"	"	"	
Mercury	ND	0.200	"	"	3J16014	10/16/03	10/16/03	EPA 7471A	
Lead	6.77	0.500	"	"	3J15023	10/15/03	10/17/03	EPA 6020	
Selenium	ND	0.500	"	"	"	"	10/16/03	"	
SWMV 5-7 (B3J0357-24) Soil Sampled: 10/09/03 16:30 Received: 10/13/03 13:50									
Silver	ND	0.500	mg/kg dry	1	3J15023	10/15/03	10/16/03	EPA 6020	
Arsenic	1.87	0.500	"	"	"	"	10/17/03	"	
Barium	65.6	5.00	"	"	"	"	10/16/03	"	
Cadmium	ND	0.500	"	"	"	"	"	"	
Chromium	10.9	0.500	"	"	"	"	"	"	
Mercury	ND	0.200	"	"	3J16014	10/16/03	10/16/03	EPA 7471A	
Lead	4.47	0.500	"	"	3J15023	10/15/03	10/17/03	EPA 6020	
Selenium	ND	0.500	"	"	"	"	10/16/03	"	

North Creek Analytical - Bothell

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URS Corporation	Project: HGP	
1501 4th Ave, Suite 1400	Project Number: 33756194	Amended Report
Seattle, WA/USA 98101-1616	Project Manager: Gail Gislason	Issued: 12/01/03 13:21

Total Metals by EPA 6000/7000 Series Methods

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SWMV 5-8 (B3J0357-25) Soil Sampled: 10/09/03 16:35 Received: 10/13/03 13:50									
Silver	ND	0.500	mg/kg dry	1	3J15023	10/15/03	10/16/03	EPA 6020	
Arsenic	2.33	0.500	"	"	"	"	10/17/03	"	
Barium	76.5	5.00	"	"	"	"	10/16/03	"	
Cadmium	ND	0.500	"	"	"	"	"	"	
Chromium	11.2	0.500	"	"	"	"	"	"	
Mercury	ND	0.200	"	"	3J16014	10/16/03	10/16/03	EPA 7471A	
Lead	7.59	0.500	"	"	3J15023	10/15/03	10/17/03	EPA 6020	
Selenium	ND	0.500	"	"	"	"	10/16/03	"	
SWMV 10-1 (B3J0357-26) Soil Sampled: 10/09/03 16:47 Received: 10/13/03 13:50									
Silver	ND	0.500	mg/kg dry	1	3J15023	10/15/03	10/16/03	EPA 6020	
Arsenic	2.22	0.500	"	"	"	"	10/17/03	"	
Barium	69.4	5.00	"	"	"	"	10/16/03	"	
Cadmium	ND	0.500	"	"	"	"	"	"	
Chromium	11.2	0.500	"	"	"	"	"	"	
Mercury	ND	0.200	"	"	3J16014	10/16/03	10/16/03	EPA 7471A	
Lead	11.8	0.500	"	"	3J15023	10/15/03	10/17/03	EPA 6020	
Selenium	ND	0.500	"	"	"	"	10/16/03	"	
SWMV 10-2 (B3J0357-27) Soil Sampled: 10/09/03 16:50 Received: 10/13/03 13:50									
Silver	ND	0.556	mg/kg dry	1	3J15023	10/15/03	10/16/03	EPA 6020	
Arsenic	1.82	0.556	"	"	"	"	10/17/03	"	
Barium	68.2	5.56	"	"	"	"	10/16/03	"	
Cadmium	ND	0.556	"	"	"	"	"	"	
Chromium	9.58	0.556	"	"	"	"	"	"	
Mercury	ND	0.200	"	"	3J16014	10/16/03	10/16/03	EPA 7471A	
Lead	23.3	0.556	"	"	3J15023	10/15/03	10/17/03	EPA 6020	
Selenium	ND	0.556	"	"	"	"	10/16/03	"	

North Creek Analytical - Bothell

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URS Corporation 1501 4th Ave, Suite 1400 Seattle, WA/USA 98101-1616	Project: HGP Project Number: 33756194 Project Manager: Gail Gislason	Amended Report Issued: 12/01/03 11:21

Total Metals by EPA 6000/7000 Series Methods

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SWMV 10-3 (B310357-28) Soil Sampled: 10/09/03 16:55 Received: 10/13/03 13:50									
Silver	ND	0.500	mg/kg dry	1	3J15023	10/15/03	10/16/03	EPA 6020	
Arsenic	1.78	0.500	"	"	"	"	10/17/03	"	
Barium	67.5	5.00	"	"	"	"	10/16/03	"	
Cadmium	ND	0.500	"	"	"	"	"	"	
Chromium	9.72	0.500	"	"	"	"	"	"	
Mercury	ND	0.200	"	"	3J16014	10/16/03	10/16/03	EPA 7471A	
Lead	9.24	0.500	"	"	3J15023	10/15/03	10/17/03	EPA 6020	
Selenium	ND	0.500	"	"	"	"	10/16/03	"	
SWMV 10-4 (B310357-29) Soil Sampled: 10/09/03 17:00 Received: 10/13/03 13:50									
Silver	ND	0.500	mg/kg dry	1	3J15023	10/15/03	10/16/03	EPA 6020	
Arsenic	1.77	0.500	"	"	"	"	10/17/03	"	
Barium	70.6	5.00	"	"	"	"	10/16/03	"	
Cadmium	ND	0.500	"	"	"	"	"	"	
Chromium	10.3	0.500	"	"	"	"	"	"	
Mercury	ND	0.200	"	"	3J16014	10/16/03	10/16/03	EPA 7471A	
Lead	14.1	0.500	"	"	3J15023	10/15/03	10/17/03	EPA 6020	
Selenium	ND	0.500	"	"	"	"	10/16/03	"	
SWMV 10-5 (B310357-30) Soil Sampled: 10/09/03 17:03 Received: 10/13/03 13:50									
Silver	ND	0.500	mg/kg dry	1	3J15023	10/15/03	10/16/03	EPA 6020	
Arsenic	1.70	0.500	"	"	"	"	10/17/03	"	
Barium	93.5	5.00	"	"	"	"	10/16/03	"	
Cadmium	ND	0.500	"	"	"	"	"	"	
Chromium	9.32	0.500	"	"	"	"	"	"	
Mercury	ND	0.200	"	"	3J16014	10/16/03	10/16/03	EPA 7471A	
Lead	13.8	0.500	"	"	3J15023	10/15/03	10/17/03	EPA 6020	
Selenium	ND	0.500	"	"	"	"	10/16/03	"	

North Creek Analytical - Bothell

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Jeff Gerdes, Project Manager

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URS Corporation	Project: IICP	
1501 4th Ave, Suite 1400	Project Number: 33756194	**Amended Report**
Seattle, WA/USA 98101-1616	Project Manager: Gail Gislason	Issued: 12/01/03 11:21

Total Metals by EPA 6000/7000 Series Methods
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SWMV 10-6 (B3J0357-31) Soil Sampled: 10/09/03 17:06 Received: 10/13/03 13:50									
Silver	ND	0.500	mg/kg dry	1	3J15023	10/15/03	10/16/03	EPA 6020	
Arsenic	1.37	0.500	"	"	"	"	10/17/03	"	
Barium	100	5.00	"	"	"	"	10/16/03	"	
Cadmium	ND	0.500	"	"	"	"	"	"	
Chromium	12.3	0.500	"	"	"	"	"	"	
Mercury	ND	0.200	"	"	3J16014	10/16/03	10/16/03	EPA 7471A	
Lead	9.84	0.500	"	"	3J15023	10/15/03	10/17/03	EPA 6020	
Selenium	ND	0.500	"	"	"	"	10/16/03	"	
SWMV 10-7 (B3J0357-32) Soil Sampled: 10/09/03 17:10 Received: 10/13/03 13:50									
Silver	1.69	0.500	mg/kg dry	1	3J15023	10/15/03	10/16/03	EPA 6020	
Arsenic	1.98	0.500	"	"	"	"	10/17/03	"	
Barium	349	50.0	"	10	"	"	10/17/03	"	
Cadmium	1.46	0.500	"	1	"	"	10/16/03	"	
Chromium	32.8	0.500	"	"	"	"	"	"	
Mercury	ND	0.200	"	"	3J16014	10/16/03	10/16/03	EPA 7471A	
Lead	669	5.00	"	10	3J15023	10/15/03	10/17/03	EPA 6020	
Selenium	ND	0.500	"	1	"	"	10/16/03	"	
SWMV 10-8 (B3J0357-33) Soil Sampled: 10/09/03 17:13 Received: 10/13/03 13:50									
Silver	ND	0.500	mg/kg dry	1	3J15023	10/15/03	10/16/03	EPA 6020	
Arsenic	2.40	0.500	"	"	"	"	10/17/03	"	
Barium	280	5.00	"	"	"	"	10/16/03	"	
Cadmium	0.860	0.500	"	"	"	"	"	"	
Chromium	12.0	0.500	"	"	"	"	"	"	
Mercury	ND	0.200	"	"	3J16014	10/16/03	10/16/03	EPA 7471A	
Lead	606	5.00	"	10	3J15023	10/15/03	10/17/03	EPA 6020	
Selenium	0.584	0.500	"	1	"	"	10/16/03	"	

North Creek Analytical - Bothell

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Jeff Gerdes

Jeff Gerdes, Project Manager

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URS Corporation	Project: HGP	
1501 4th Ave, Suite 1400	Project Number: 33756194	**Amended Report**
Seattle, WA/USA 98101-1616	Project Manager: Gail Gisleson	Issued: 12/01/03 11:21

Total Metals by EPA 6000/7000 Series Methods

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SWMV 18-9 (B3J0357-34) Soil Sampled: 10/09/03 17:16 Received: 10/13/03 13:50									
Silver	0.609	0.500	mg/kg dry	1	3J15023	10/15/03	10/16/03	EPA 6020	
Arsenic	2.29	0.500	"	"	"	"	10/17/03	"	
Barium	175	5.00	"	"	"	"	10/16/03	"	
Cadmium	0.522	0.500	"	"	"	"	"	"	
Chromium	21.2	0.500	"	"	"	"	"	"	
Mercury	ND	0.200	"	"	3J16014	10/16/03	10/16/03	EPA 7471A	
Lead	222	1.00	"	2	3J15023	10/15/03	10/17/03	EPA 6020	
Selenium	ND	0.500	"	1	"	"	10/16/03	"	

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CES Corporation 1501 4th Ave, Suite 1400 Seattle, WA/USA 98101-1616	Project: HGP Project Number: 33756194 Project Manager: Gail Gislason	Amended Report Issued: 12/01/03 11:21

Polychlorinated Biphenyls by EPA Method 8082

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SWMV 1-S-1 (B330357-01) Soil Sampled: 10/09/03 12:30 Received: 10/13/03 13:50									
Aroclor 1016	ND	25.0	ug/kg dry	1	3J16055	10/16/03	10/21/03	EPA 8082	
Aroclor 1221	ND	50.0	"	"	"	"	"	"	
Aroclor 1232	ND	25.0	"	"	"	"	"	"	
Aroclor 1242	ND	25.0	"	"	"	"	"	"	
Aroclor 1248	ND	25.0	"	"	"	"	"	"	
Aroclor 1254	ND	25.0	"	"	"	"	"	"	
Aroclor 1260	ND	25.0	"	"	"	"	"	"	
Aroclor 1262	ND	25.0	"	"	"	"	"	"	
Aroclor 1268	ND	25.0	"	"	"	"	"	"	
Surrogate: TCX	*96.3 %*	*49-124*			"	"	"	"	
Surrogate: Decachlorobiphenyl	*98.0 %*	*48-150*			"	"	"	"	
SWMV 1-S-2 (B330357-02) Soil Sampled: 10/09/03 12:32 Received: 10/13/03 13:50									
Aroclor 1016	ND	25.0	ug/kg dry	1	3J16055	10/16/03	10/22/03	EPA 8082	
Aroclor 1221	ND	50.0	"	"	"	"	"	"	
Aroclor 1232	ND	25.0	"	"	"	"	"	"	
Aroclor 1242	ND	25.0	"	"	"	"	"	"	
Aroclor 1248	ND	25.0	"	"	"	"	"	"	
Aroclor 1254	ND	25.0	"	"	"	"	"	"	
Aroclor 1260	ND	25.0	"	"	"	"	"	"	
Aroclor 1262	ND	25.0	"	"	"	"	"	"	
Aroclor 1268	ND	25.0	"	"	"	"	"	"	
Surrogate: TCX	*92.2 %*	*49-124*			"	"	"	"	
Surrogate: Decachlorobiphenyl	*89.9 %*	*48-150*			"	"	"	"	

North Creek Analytical - Bothell

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URS Corporation	Project: HGP	
1501 4th Ave, Suite 1400	Project Number: 33756194	Amended Report
Seattle, WA/USA 98101-1616	Project Manager: Gail Gislason	Issued: 12/01/03 11:21

Polychlorinated Biphenyls by EPA Method 8082

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SWMV 1-5-1 (B3J0357-03) Soil Sampled: 10/09/03 12:34 Received: 10/13/03 13:50									
Aroclor 1016	ND	25.0	ug/kg dry	1	3J16055	10/16/03	10/22/03	EPA 8082	
Aroclor 1221	ND	50.0	"	"	"	"	"	"	
Aroclor 1232	ND	25.0	"	"	"	"	"	"	
Aroclor 1242	ND	25.0	"	"	"	"	"	"	
Aroclor 1248	ND	25.0	"	"	"	"	"	"	
Aroclor 1254	ND	25.0	"	"	"	"	"	"	
Aroclor 1260	ND	25.0	"	"	"	"	"	"	
Aroclor 1262	ND	25.0	"	"	"	"	"	"	
Aroclor 1268	ND	25.0	"	"	"	"	"	"	
Surrogate: TCX	*89.0 %*	*49-124*			"	"	"	"	
Surrogate: Decachlorobiphenyl	*90.9 %*	*48-150*			"	"	"	"	
SWMV 1-3-1 (B3J0357-04) Soil Sampled: 10/09/03 12:42 Received: 10/13/03 13:50									
Aroclor 1016	ND	25.0	ug/kg dry	1	3J16055	10/16/03	10/23/03	EPA 8082	
Aroclor 1221	ND	50.0	"	"	"	"	"	"	
Aroclor 1232	ND	25.0	"	"	"	"	"	"	
Aroclor 1242	ND	25.0	"	"	"	"	"	"	
Aroclor 1248	ND	25.0	"	"	"	"	"	"	
Aroclor 1254	ND	25.0	"	"	"	"	"	"	
Aroclor 1260	ND	25.0	"	"	"	"	"	"	
Aroclor 1262	ND	25.0	"	"	"	"	"	"	
Aroclor 1268	ND	25.0	"	"	"	"	"	"	
Surrogate: TCX	*91.7 %*	*49-124*			"	"	"	"	
Surrogate: Decachlorobiphenyl	*96.2 %*	*48-150*			"	"	"	"	

North Creek Analytical - Bothell

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URS Corporation 1501 4th Ave, Suite 1400 Seattle, WA/USA 98101-1616	Project: HGP Project Number: 53756194 Project Manager: Gail Gislason	**Amended Report** Issued: 12/01/03 11:21

Polychlorinated Biphenyls by EPA Method 8082

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SWMV 1-3-2 (R3J0357-05) Soil Sampled: 10/09/03 12:48 Received: 10/13/03 13:50									
Aroclor 1016	ND	25.0	ug/kg dry	1	3J16055	10/16/03	10/21/03	EPA 8082	
Aroclor 1221	ND	50.0	"	"	"	"	"	"	
Aroclor 1232	ND	25.0	"	"	"	"	"	"	
Aroclor 1242	ND	25.0	"	"	"	"	"	"	
Aroclor 1248	ND	25.0	"	"	"	"	"	"	
Aroclor 1254	ND	25.0	"	"	"	"	"	"	
Aroclor 1260	ND	25.0	"	"	"	"	"	"	
Aroclor 1262	ND	25.0	"	"	"	"	"	"	
Aroclor 1268	ND	25.0	"	"	"	"	"	"	
Surrogate: TCX	*85.5 %*	*49-124*			"	"	"	"	
Surrogate: Decachlorobiphenyl	*88.4 %*	*48-150*			"	"	"	"	
SWMV 1-3-3 (R3J0357-06) Soil Sampled: 10/09/03 12:50 Received: 10/13/03 13:50									
Aroclor 1016	ND	25.0	ug/kg dry	1	3J16055	10/16/03	10/21/03	EPA 8082	
Aroclor 1221	ND	50.0	"	"	"	"	"	"	
Aroclor 1232	ND	25.0	"	"	"	"	"	"	
Aroclor 1242	ND	25.0	"	"	"	"	"	"	
Aroclor 1248	ND	25.0	"	"	"	"	"	"	
Aroclor 1254	ND	25.0	"	"	"	"	"	"	
Aroclor 1260	ND	25.0	"	"	"	"	"	"	
Aroclor 1262	ND	25.0	"	"	"	"	"	"	
Aroclor 1268	ND	25.0	"	"	"	"	"	"	
Surrogate: TCX	*91.1 %*	*49-124*			"	"	"	"	
Surrogate: Decachlorobiphenyl	*91.9 %*	*48-150*			"	"	"	"	

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URS Corporation	Project: HGIP	
1501 4th Ave, Suite 1400	Project Number: 33756194	Amended Report
Seattle, WA/USA 98101-1616	Project Manager: Gail Gislason	Issued: 12/01/03 11:21

Polychlorinated Biphenyls by EPA Method 8082

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SWMV 1-9-3 (B3J0357-07) Soil Sampled: 10/09/03 13:18 Received: 10/13/03 13:50									
Aroclor 1016	ND	25.0	ug/kg dry	1	3J16055	10/16/03	10/21/03	EPA 8082	
Aroclor 1221	ND	50.0	"	"	"	"	"	"	
Aroclor 1232	ND	25.0	"	"	"	"	"	"	
Aroclor 1242	ND	25.0	"	"	"	"	"	"	
Aroclor 1248	ND	25.0	"	"	"	"	"	"	
Aroclor 1254	ND	25.0	"	"	"	"	"	"	
Aroclor 1260	ND	25.0	"	"	"	"	"	"	
Aroclor 1262	ND	25.0	"	"	"	"	"	"	
Aroclor 1268	ND	25.0	"	"	"	"	"	"	
Surrogate: TCX	*90.7 %*	*49-124*			"	"	"	"	
Surrogate: Decachlorobiphenyl	*92.3 %*	*48-150*			"	"	"	"	
SWMV 1-9-1 (B3J0357-08) Soil Sampled: 10/09/03 13:08 Received: 10/13/03 13:50									
Aroclor 1016	ND	25.0	ug/kg dry	1	3J16055	10/16/03	10/21/03	EPA 8082	
Aroclor 1221	ND	50.0	"	"	"	"	"	"	
Aroclor 1232	ND	25.0	"	"	"	"	"	"	
Aroclor 1242	ND	25.0	"	"	"	"	"	"	
Aroclor 1248	ND	25.0	"	"	"	"	"	"	
Aroclor 1254	ND	25.0	"	"	"	"	"	"	
Aroclor 1260	ND	25.0	"	"	"	"	"	"	
Aroclor 1262	ND	25.0	"	"	"	"	"	"	
Aroclor 1268	ND	25.0	"	"	"	"	"	"	
Surrogate: TCX	*89.7 %*	*49-124*			"	"	"	"	
Surrogate: Decachlorobiphenyl	*133 %*	*48-150*			"	"	"	"	

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URS Corporation 1501 4th Ave, Suite 1400 Seattle, WA/USA 98101-1616	Project: HGF Project Number: 33756194 Project Manager: Gail Gislason	**Amended Report** Issued: 12/01/03 11:21

Polychlorinated Biphenyls by EPA Method 8082

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SWMV 1-9-2 (B3J0357-09) Soil Sampled: 10/09/03 13:12 Received: 10/13/03 13:50									
Aroclor 1016	ND	25.0	ug/kg dry	1	3J16055	10/16/03	10/21/03	EPA 8082	
Aroclor 1221	ND	50.0	"	"	"	"	"	"	
Aroclor 1232	ND	25.0	"	"	"	"	"	"	
Aroclor 1242	ND	25.0	"	"	"	"	"	"	
Aroclor 1248	ND	25.0	"	"	"	"	"	"	
Aroclor 1254	ND	25.0	"	"	"	"	"	"	
Aroclor 1260	ND	25.0	"	"	"	"	"	"	
Aroclor 1262	**25.6**	25.0	"	"	"	"	"	"	
Aroclor 1268	ND	25.0	"	"	"	"	"	"	
Surrogate: TCX	*71.0 %*	*49-124*			"	"	"	"	
Surrogate: Decachlorobiphenyl	*137 %*	*48-150*			"	"	"	"	

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URS Corporation 1501 4th Ave, Suite 1400 Seattle, WA/USA 98101-1616	Project: HGP Project Number: 33756194 Project Manager: Gail Gislason	Amended Report Issued: 12/01/03 11:21

Physical Parameters by APHA/ASTM/EPA Methods

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SWMV 1-6-1 (B3J0357-01) Soil Sampled: 10/09/03 12:30 Received: 10/13/03 13:50									
Dry Weight	95.8	1.00	%	1	3118010	10/18/03	10/20/03	BSOPSPL003R08	
SWMV 1-6-2 (B3J0357-02) Soil Sampled: 10/09/03 12:32 Received: 10/13/03 13:50									
Dry Weight	94.4	1.00	%	1	3118010	10/18/03	10/20/03	BSOPSPL003R08	
SWMV 1-6-3 (B3J0357-03) Soil Sampled: 10/09/03 12:34 Received: 10/13/03 13:50									
Dry Weight	99.0	1.00	%	1	3118010	10/18/03	10/20/03	BSOPSPL003R08	
SWMV 1-3-1 (B3J0357-04) Soil Sampled: 10/09/03 12:42 Received: 10/13/03 13:50									
Dry Weight	97.6	1.00	%	1	3118010	10/18/03	10/20/03	BSOPSPL003R08	
SWMV 1-3-2 (B3J0357-05) Soil Sampled: 10/09/03 12:48 Received: 10/13/03 13:50									
Dry Weight	97.8	1.00	%	1	3118010	10/18/03	10/20/03	BSOPSPL003R08	
SWMV 1-3-3 (B3J0357-06) Soil Sampled: 10/09/03 12:50 Received: 10/13/03 13:50									
Dry Weight	96.6	1.00	%	1	3118010	10/18/03	10/20/03	BSOPSPL003R08	
SWMV 1-9-3 (B3J0357-07) Soil Sampled: 10/09/03 13:18 Received: 10/13/03 13:50									
Dry Weight	96.6	1.00	%	1	3118010	10/18/03	10/20/03	BSOPSPL003R08	
SWMV 1-9-1 (B3J0357-08) Soil Sampled: 10/09/03 13:08 Received: 10/13/03 13:50									
Dry Weight	91.5	1.00	%	1	3118010	10/18/03	10/20/03	BSOPSPL003R08	
SWMV 1-9-2 (B3J0357-09) Soil Sampled: 10/09/03 13:12 Received: 10/13/03 13:50									
Dry Weight	94.9	1.00	%	1	3118010	10/18/03	10/20/03	BSOPSPL003R08	

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URS Corporation	Project: HGP	
1501 4th Ave, Suite 1400	Project Number: 33756194	Amended Report
Seattle, WA/USA 98101-1616	Project Manager: Gail Gislason	Issued: 12/01/03 11:21

Physical Parameters by APHA/ASTM/EPA Methods

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SWMV 5-1 (B3J0357-10) Soil Sampled: 10/09/03 13:40 Received: 10/13/03 13:50									
Dry Weight	95.8	1.00	%	1	3316011	10/16/03	10/17/03	BSOPSPL003R08	
SWMV 5-2 (B3J0357-11) Soil Sampled: 10/09/03 13:48 Received: 10/13/03 13:50									
Dry Weight	98.1	1.00	%	1	3316011	10/16/03	10/17/03	BSOPSPL003R08	
SWMV 5-3 (B3J0357-12) Soil Sampled: 10/09/03 13:55 Received: 10/13/03 13:50									
Dry Weight	95.4	1.00	%	1	3316011	10/16/03	10/17/03	BSOPSPL003R08	
SWMV 5-4 (B3J0357-13) Soil Sampled: 10/09/03 14:00 Received: 10/13/03 13:50									
Dry Weight	99.0	1.00	%	1	3316011	10/16/03	10/17/03	BSOPSPL003R08	
SWMV 6-1 (B3J0357-14) Soil Sampled: 10/09/03 14:57 Received: 10/13/03 13:50									
Dry Weight	96.7	1.00	%	1	3316011	10/16/03	10/17/03	BSOPSPL003R08	
SWMV 6-2 (B3J0357-15) Soil Sampled: 10/09/03 15:02 Received: 10/13/03 13:50									
Dry Weight	98.8	1.00	%	1	3316011	10/16/03	10/17/03	BSOPSPL003R08	
SWMV 6-3 (B3J0357-16) Soil Sampled: 10/09/03 15:05 Received: 10/13/03 13:50									
Dry Weight	98.6	1.00	%	1	3316011	10/16/03	10/17/03	BSOPSPL003R08	
SWMV 6-4 (B3J0357-17) Soil Sampled: 10/09/03 15:10 Received: 10/13/03 13:50									
Dry Weight	98.9	1.00	%	1	3316011	10/16/03	10/17/03	BSOPSPL003R08	
SWMV 6-5 (B3J0357-18) Soil Sampled: 10/09/03 15:17 Received: 10/13/03 13:50									
Dry Weight	99.4	1.00	%	1	3316011	10/16/03	10/17/03	BSOPSPL003R08	

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URS Corporation 1501 4th Ave, Suite 1400 Seattle, WA/USA 98101-1616	Project: EKTP Project Number: 33756194 Project Manager: Gail Gislason	Amended Report Issued: 12/01/03 11:21

Physical Parameters by APHA/ASTM/EPA Methods

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SWMV 6-6 (B3J0357-19) Soil Sampled: 10/09/03 15:20 Received: 10/13/03 13:50									
Dry Weight	98.9	1.00	%	1	3116011	10/16/03	10/17/03	BSOPSPL003R08	
SWMV 6-7 (B3J0357-20) Soil Sampled: 10/09/03 15:25 Received: 10/13/03 13:50									
Dry Weight	98.3	1.00	%	1	3116011	10/16/03	10/17/03	BSOPSPL003R08	
SWMV 6-8 (B3J0357-21) Soil Sampled: 10/09/03 15:30 Received: 10/13/03 13:50									
Dry Weight	99.4	1.00	%	1	3116011	10/16/03	10/17/03	BSOPSPL003R08	
SWMV 5-5 (B3J0357-22) Soil Sampled: 10/09/03 16:20 Received: 10/13/03 13:50									
Dry Weight	98.9	1.00	%	1	3116011	10/16/03	10/17/03	BSOPSPL003R08	
SWMV 5-6 (B3J0357-23) Soil Sampled: 10/09/03 16:25 Received: 10/13/03 13:50									
Dry Weight	99.3	1.00	%	1	3116011	10/16/03	10/17/03	BSOPSPL003R08	
SWMV 5-7 (B3J0357-24) Soil Sampled: 10/09/03 16:30 Received: 10/13/03 13:50									
Dry Weight	99.6	1.00	%	1	3116011	10/16/03	10/17/03	BSOPSPL003R08	
SWMV 5-8 (B3J0357-25) Soil Sampled: 10/09/03 16:35 Received: 10/13/03 13:50									
Dry Weight	99.4	1.00	%	1	3116011	10/16/03	10/17/03	BSOPSPL003R08	
SWMV 10-1 (B3J0357-26) Soil Sampled: 10/09/03 16:47 Received: 10/13/03 13:50									
Dry Weight	99.2	1.00	%	1	3116011	10/16/03	10/17/03	BSOPSPL003R08	
SWMV 10-2 (B3J0357-27) Soil Sampled: 10/09/03 16:50 Received: 10/13/03 13:50									
Dry Weight	99.5	1.00	%	1	3116011	10/16/03	10/17/03	BSOPSPL003R08	

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URS Corporation
1501 4th Ave, Suite 1400
Seattle, WA/USA 98101-1616

Project: ITGP
Project Number: 33756194
Project Manager: Gail Gislason

Amended Report
Issued: 12/01/03 11:21

Physical Parameters by APHA/ASTM/EPA Methods
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SWMV 10-3 (B3J0357-28) Soil Sampled: 10/09/03 16:55 Received: 10/13/03 13:50									
Dry Weight	98.9	1.00	%	1	3116011	10/16/03	10/17/03	BSOPSPL003R08	
SWMV 10-4 (B3J0357-29) Soil Sampled: 10/09/03 17:00 Received: 10/13/03 13:50									
Dry Weight	99.2	1.00	%	1	3116011	10/16/03	10/17/03	BSOPSPL003R08	
SWMV 10-5 (B3J0357-30) Soil Sampled: 10/09/03 17:03 Received: 10/13/03 13:50									
Dry Weight	96.8	1.00	%	1	3116013	10/16/03	10/17/03	BSOPSPL003R08	
SWMV 10-6 (B3J0357-31) Soil Sampled: 10/09/03 17:06 Received: 10/13/03 13:50									
Dry Weight	99.4	1.00	%	1	3116013	10/16/03	10/17/03	BSOPSPL003R08	
SWMV 10-7 (B3J0357-32) Soil Sampled: 10/09/03 17:10 Received: 10/13/03 13:50									
Dry Weight	98.4	1.00	%	1	3116013	10/16/03	10/17/03	BSOPSPL003R08	
SWMV 10-8 (B3J0357-33) Soil Sampled: 10/09/03 17:13 Received: 10/13/03 13:50									
Dry Weight	99.3	1.00	%	1	3116013	10/16/03	10/17/03	BSOPSPL003R08	
SWMV 10-9 (B3J0357-34) Soil Sampled: 10/09/03 17:16 Received: 10/13/03 13:50									
Dry Weight	98.8	1.00	%	1	3116013	10/16/03	10/17/03	BSOPSPL003R08	

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Jeff Gerdes

Jeff Gerdes, Project Manager

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URS Corporation	Project: IHGP	
1501 4th Ave, Suite 1400	Project Number: 33756194	Amended Report
Seattle, WA/USA 98101-1616	Project Manager: Gail Gislason	Issued: 12/01/03 11:21

Semivolatile Petroleum Products by NWTPH-Dx (w/o Acid/Silica Gel Clean-up) - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3J16027: Prepared 10/16/03 Using EPA 3550B										
Blank (3J16027-BLK1)										
Diesel Range Hydrocarbons	ND	10.0	mg/kg							
Lube Oil Range Hydrocarbons	ND	25.0	"							
Surrogate: 2-FBP	9.47		"	10.7		88.5	50-150			
Surrogate: Octacosane	5.09		"	5.33		95.5	57-120			
LCS (3J16027-BS1)										
Diesel Range Hydrocarbons	60.9	10.0	mg/kg	66.7		91.3	70-130			
Surrogate: 2-FBP	10.8		"	10.7		101	50-150			
LCS Dup (3J16027-BSD1)										
Diesel Range Hydrocarbons	61.6	10.0	mg/kg	66.7		92.4	70-130	1.14	40	
Surrogate: 2-FBP	10.9		"	10.7		102	50-150			
Duplicate (3J16027-DUP1)					Source: B3J0357-10					
Diesel Range Hydrocarbons	ND	10.0	mg/kg dry		4.47			25.2	40	
Lube Oil Range Hydrocarbons	ND	25.0	"		ND			NA	40	
Surrogate: 2-FBP	10.2		"	11.1		91.9	50-150			
Surrogate: Octacosane	6.07		"	5.52		114	57-120			
Batch 3J16028: Prepared 10/16/03 Using EPA 3550B										
Blank (3J16028-BLK1)										
Diesel Range Hydrocarbons	ND	10.0	mg/kg							
Lube Oil Range Hydrocarbons	ND	25.0	"							
Surrogate: 2-FBP	9.69		"	10.7		90.6	50-150			
Surrogate: Octacosane	5.49		"	5.33		103	57-120			

North Creek Analytical - Bothell

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Jeff Gerdes, Project Manager

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URS Corporation 1501 4th Ave, Suite 1400 Seattle, WA/USA 98101-1616	Project: HCP Project Number: 33756194 Project Manager: Gail Gilstrom	Amended Report Issued: 12/01/03 11:21

Semivolatile Petroleum Products by NWTPH-Dx (w/o Acid/Silica Gel Clean-up) - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3J16028: Prepared 10/16/03 Using EPA 3550B										
LCS (3J16028-BS1)										
Diesel Range Hydrocarbons	57.3	10.0	mg/kg	66.7		85.9	70-130			
Surrogate: 2-FBP	*9.64*		"	*10.7*		*90.1*	*50-150*			
LCS Dup (3J16028-BSD1)										
Diesel Range Hydrocarbons	56.6	10.0	mg/kg	66.7		84.9	70-130	1.21	40	
Surrogate: 2-FBP	*11.3*		"	*10.7*		*106*	*50-150*			
Duplicate (3J16028-DUP1)					Source: B3J0357-30					
Diesel Range Hydrocarbons	58.7	23.0	mg/kg dry		59.2			0.848	40	
Lube Oil Range Hydrocarbons	432	50.0	"		407			5.96	40	
Surrogate: 2-FBP	*9.20*		"	*10.9*		*84.4*	*50-150*			
Surrogate: Octacosane	*5.62*		"	*5.46*		*103*	*57-129*			

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URS Corporation	Project: HGP	
1501 4th Ave, Suite 1400	Project Number: 33756194	Amended Report
Seattle, WA/USA 98101-1616	Project Manager: Gail Gislason	Issued: 12/01/03 11:21

Identified Semivolatile Petroleum Products by NWTPH-Dx (w/o Acid/Silica Gel Clean-up) - Quality Control

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3K25023: Prepared 11/25/03 Using EPA 3550B										
Blank (3K25023-BLK1)										
Mineral Oil Range Hydrocarbons	ND	25.0	mg/kg							
Surrogate: 2-FBP	*8.64*		"	*10.7*		*80.7*	*50-150*			
Surrogate: Ocosecosane	*5.21*		"	*5.33*		*97.7*	*57-120*			
LCS (3K25023-BS1)										
Diesel Range Hydrocarbons	57.1	10.0	mg/kg	66.7		85.9	70-130			
Surrogate: 2-FBP	*9.68*		"	*10.7*		*90.5*	*50-150*			
LCS Dup (3K25023-BSD1)										
Diesel Range Hydrocarbons	57.7	10.0	mg/kg	66.7		86.5	70-130	0.696	40	
Surrogate: 2-FBP	*9.78*		"	*10.7*		*91.4*	*50-150*			
Duplicate (3K25023-DUP1)					**Source: B3J0357-01**					
Mineral Oil Range Hydrocarbons	ND	25.0	mg/kg dry		ND			NA	40	
Surrogate: 2-FBP	*8.09*		"	*11.1*		*78.3*	*50-150*			
Surrogate: Ocosecosane	*5.26*		"	*5.37*		*94.4*	*57-120*			

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Jeff Geddes

Jeff Geddes, Project Manager

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URS Corporation
1501 4th Ave, Suite 1400
Seattle, WA/USA 98101-1616

Project: HGP
Project Number: 33756194
Project Manager: Gail Gislason

Amended Report
Issued: 12/01/03 11:21

Total Metals by EPA 6000/7000 Series Methods - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3J14054: Prepared 10/14/03 Using EPA 3050B										
Blank (3J14054-BLK1)										
Arsenic	ND	0.500	mg/kg							
Barium	ND	5.00	"							
Cadmium	ND	0.500	"							
Chromium	ND	0.500	"							
Lead	ND	0.500	"							
Selenium	ND	0.500	"							
Silver	ND	0.500	"							
LCS (3J14054-BS1)										
Arsenic	42.1	0.500	mg/kg	40.0		105	80-120			
Barium	42.5	5.00	"	40.0		106	80-120			
Cadmium	42.1	0.500	"	40.0		105	80-120			
Chromium	41.7	0.500	"	40.0		104	80-120			
Lead	41.5	0.500	"	40.0		104	80-120			
Selenium	42.2	0.500	"	40.0		106	80-120			
Silver	42.8	0.500	"	40.0		107	80-120			
LCS Dup (3J14054-BSD1)										
Arsenic	40.1	0.500	mg/kg	40.0		100	80-120	4.87	20	
Barium	40.8	5.00	"	40.0		102	80-120	4.57	20	
Cadmium	39.3	0.500	"	40.0		98.2	80-120	6.88	20	
Chromium	39.6	0.500	"	40.0		99.0	80-120	5.17	20	
Lead	39.0	0.500	"	40.0		97.5	80-120	6.21	20	
Selenium	40.9	0.500	"	40.0		102	80-120	3.13	20	
Silver	38.5	0.500	"	40.0		96.2	80-120	10.6	20	
Matrix Spike (3J14054-MS1)					Source: BJ0357-10					
Arsenic	50.9	0.500	mg/kg dry	41.8	1.75	93.3	72-130			
Barium	106	5.00	"	41.8	99.8	111	53-147			
Cadmium	40.6	0.500	"	41.8	0.235	96.6	70-130			
Chromium	49.7	0.500	"	41.8	9.44	96.3	53-147			
Lead	47.3	0.500	"	41.8	6.99	96.4	52-137			
Selenium	40.5	0.500	"	41.8	0.355	95.6	70-130			
Silver	37.7	0.500	"	41.8	0.157	89.8	63-125			

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URS Corporation	Project: BGP	
1501 4th Ave, Suite 1400	Project Number: 33756194	Amended Report
Seattle, WA/USA 98101-1616	Project Manager: Gail Gislason	Issued: 12/01/03 11:21

Total Metals by EPA 6000/7000 Series Methods - Quality Control

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3J14054: Prepared 10/14/03 Using EPA 3050B										
Matrix Spike Dup (3J14054-MSD1)					Source: B3J0357-10					
Arsenic	40.2	0.500	mg/kg dry	41.8	1.91	91.6	72-130	1.70	30	
Barium	103	5.00	"	41.8	59.8	103	53-147	2.87	30	
Cadmium	39.8	0.500	"	41.8	0.255	94.7	70-130	1.99	30	
Chromium	48.3	0.500	"	41.8	9.44	93.0	53-147	2.86	30	
Lead	66.5	0.500	"	41.8	6.99	94.5	62-137	1.71	30	
Selenium	39.1	0.500	"	41.8	0.355	92.7	70-130	1.02	30	
Silver	37.5	0.500	"	41.8	0.157	89.3	65-125	0.532	30	
Post Spike (3J14054-PS1)					Source: B3J0357-10					
Arsenic	0.102		mg/kg dry	0.100	0.00366	98.3	75-125			
Barium	0.215		"	0.100	0.125	100	75-125			
Cadmium	0.0980		"	0.100	0.000450	97.6	75-125			
Chromium	0.115		"	0.100	0.0181	96.9	75-125			
Lead	0.111		"	0.100	0.0134	97.6	75-125			
Selenium	0.102		"	0.100	0.000680	101	75-125			
Silver	0.0970		"	0.100	0.000301	96.7	75-125			
Batch 3J15023: Prepared 10/15/03 Using EPA 3050B										
Blank (3J15023-BLK1)										
Arsenic	ND	0.500	mg/kg							
Barium	ND	5.00	"							
Cadmium	ND	0.500	"							
Chromium	ND	0.500	"							
Lead	ND	0.500	"							
Selenium	ND	0.500	"							
Silver	ND	0.500	"							

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Jeff Gerdes

Jeff Gerdes, Project Manager

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URS Corporation 1501 4th Ave, Suite 1400 Seattle, WA/USA 98101-1616	Project: HGP Project Number: 35756194 Project Manager: Gail Gislason	Amended Report Issued: 12/01/03 11:21

Total Metals by EPA 6000/7000 Series Methods - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3J15023: Prepared 10/15/03 Using EPA 3050B										
LCS (3J15023-BS1)										
Arsenic	40.5	0.500	mg/kg	40.4		100	80-120			
Barium	41.3	5.00	"	40.4		102	80-120			
Cadmium	40.6	0.500	"	40.4		100	80-120			
Chromium	40.0	0.500	"	40.4		99.0	80-120			
Lead	39.9	0.500	"	40.4		98.8	80-120			
Selenium	41.0	0.500	"	40.4		101	80-120			
Silver	35.2	0.500	"	40.4		86.9	80-120			
LCS Dup (3J15023-BSD1)										
Arsenic	40.8	0.500	mg/kg	40.0		102	80-120	0.738	20	
Barium	41.3	5.00	"	40.0		103	80-120	0.00	20	
Cadmium	40.9	0.500	"	40.0		102	80-120	0.738	20	
Chromium	40.3	0.500	"	40.0		101	80-120	0.747	20	
Lead	40.4	0.500	"	40.0		101	80-120	1.25	20	
Selenium	40.9	0.500	"	40.0		102	80-120	0.244	20	
Silver	41.0	0.500	"	40.0		101	80-120	15.5	20	
Matrix Spike (3J15023-MS1)					**Source: BJ00357-23**					
Arsenic	34.5	0.556	mg/kg dry	44.8	2.04	72.5	72-130			
Barium	90.8	5.56	"	44.8	66.8	53.6	53-147			
Cadmium	35.0	0.556	"	44.8	0.163	77.8	70-130			
Chromium	42.0	0.556	"	44.8	9.62	72.3	53-147			
Lead	40.5	0.556	"	44.8	6.77	75.8	62-137			
Selenium	33.5	0.556	"	44.8	0.311	74.1	70-130			
Silver	33.8	0.556	"	44.8	ND	75.4	63-125			
Matrix Spike Dup (3J15023-MSD1)					**Source: BJ00357-23**					
Arsenic	34.3	0.500	mg/kg dry	39.1	2.04	92.7	72-130	10.4	30	
Barium	138	5.00	"	39.1	66.8	105	53-147	17.3	30	
Cadmium	38.0	0.500	"	39.1	0.163	96.8	70-130	8.22	30	
Chromium	46.7	0.500	"	39.1	9.62	94.8	53-147	10.6	30	
Lead	45.9	0.500	"	39.1	6.77	100	62-137	12.5	30	
Selenium	36.4	0.500	"	39.1	0.311	92.3	70-130	8.30	30	
Silver	37.1	0.500	"	39.1	ND	94.9	63-125	9.31	30	

North Creek Analytical - Bothell

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Jeff Gerdes

Jeff Gerdes, Project Manager

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URS Corporation 1501 4th Ave, Suite 1400 Seattle, WA/USA 98101-1616	Project: HGP Project Number: 33756194 Project Manager: Gail Gickson	Amended Report Issued: 12/01/03 11:21

Total Metals by EPA 6000/7000 Series Methods - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3J15023: Prepared 10/15/03 Using EPA 3050B										
Post Spike (3J15023-PS1)					Source: B3J0357-23					
Arsenic	53.6	0.500	mg/kg dry	49.4	2.04	104	75-125			
Barium	120	5.00	"	49.4	66.8	108	75-125			
Cadmium	51.5	0.500	"	49.4	0.563	104	75-125			
Chromium	60.7	0.500	"	49.4	9.62	103	75-125			
Lead	58.4	0.500	"	49.4	6.77	105	75-125			
Selenium	51.9	0.500	"	49.4	0.311	104	75-125			
Silver	52.0	0.500	"	49.4	ND	105	75-125			
Batch 3J15034: Prepared 10/15/03 Using EPA 7471A										
Blank (3J15034-BLK1)										
Mercury	ND	0.200	mg/kg							
LCS (3J15034-BS1)										
Mercury	0.450	0.200	mg/kg	0.481		93.6	80-120			
LCS Dup (3J15034-BSD1)										
Mercury	0.483	0.200	mg/kg	0.500		96.6	80-120	7.07	20	
Matrix Spike (3J15034-MS1)					Source: B3J0357-10					
Mercury	0.500	0.200	mg/kg dry	0.522	0.0228	91.4	70-130			
Matrix Spike Dup (3J15034-MSD1)					Source: B3J0357-10					
Mercury	0.504	0.200	mg/kg dry	0.522	0.0228	92.2	70-130	0.797	30	
Batch 3J16014: Prepared 10/16/03 Using EPA 7471A										
Blank (3J16014-BLK1)										
Mercury	ND	0.200	mg/kg							

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Jeff Gerdes

Jeff Gerdes, Project Manager

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URS Corporation 1501 4th Ave, Suite 1400 Seattle, WA/USA 98101-1616	Project: HCP Project Number: 33756194 Project Manager: Gail Gislason	**Amended Report** Issued: 12/01/03 11:21

Total Metals by EPA 6000/7000 Series Methods - Quality Control

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3J16014: Prepared 10/16/03 Using EPA 7471A										
LCS (3J16014-BS1)										
Mercury	0.521	0.200	mg/kg	0.500		106	80-120			
LCS Dup (3J16014-BSD1)										
Mercury	0.498	0.200	mg/kg	0.500		99.6	80-120	5.45	20	
Matrix Spike (3J16014-MS1)					Source: B3J0357-19					
Mercury	0.491	0.200	mg/kg dry	0.506	0.0244	92.2	70-130			
Matrix Spike Dup (3J16014-MSD1)					Source: B3J0357-19					
Mercury	0.465	0.200	mg/kg dry	0.486	0.0244	90.7	70-130	5.44	30	

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URS Corporation 1501 4th Ave, Suite 1400 Seattle, WA/USA 98101-1616	Project: HGP Project Number: 33756194 Project Manager: Gail Gislason	Amended Report Issued: 12/01/03 11:21

Total Metals by EPA 6000/7000 Series Methods - Quality Control

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3J16014: Prepared 10/16/03 Using EPA 7471A										
LCS (3J16014-BS1)										
Mercury	0.528	0.200	mg/kg	0.500		106	80-120			
LCS Dup (3J16014-BSD1)										
Mercury	0.498	0.200	mg/kg	0.500		99.6	80-120	5.85	20	
Matrix Spike (3J16014-MS1)					Source: B3J0357-19					
Mercury	0.491	0.200	mg/kg dry	0.506	0.0244	92.2	70-130			
Matrix Spike Dup (3J16014-MSD1)					Source: B3J0357-19					
Mercury	0.465	0.200	mg/kg dry	0.486	0.0244	90.7	70-130	5.44	30	

North Creek Analytical - Bothell

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Jeff Gerdes

Jeff Gerdes, Project Manager

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URS Corporation	Project: HGP	
1501 4th Ave, Suite 1400	Project Number: 33756194	Amended Report
Seattle, WA/USA 98101-1616	Project Manager: Gail Gislason	Issued: 12/01/03 11:21

Polychlorinated Biphenyls by EPA Method 8082 - Quality Control

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3J16055: Prepared 10/16/03 Using EPA 3550B										
Blank (3J16055-BLK1)										
Aroclor 1016	ND	25.0	ug/kg							
Aroclor 1221	ND	50.0	"							
Aroclor 1232	ND	25.0	"							
Aroclor 1242	ND	25.0	"							
Aroclor 1248	ND	25.0	"							
Aroclor 1254	ND	25.0	"							
Aroclor 1260	ND	25.0	"							
Aroclor 1262	ND	25.0	"							
Aroclor 1268	ND	25.0	"							
Surrogate: TCX	*5.97*		"	*6.67*		*89.5*	*49-124*			
Surrogate: Decachlorobiphenyl	*5.31*		"	*6.67*		*79.6*	*48-150*			
LCS (3J16055-BS1)										
Aroclor 1016	78.9	25.0	ug/kg	83.3		94.7	69-123			
Aroclor 1260	75.8	25.0	"	83.3		91.0	66-140			
Surrogate: TCX	*6.58*		"	*6.67*		*98.7*	*49-124*			
Surrogate: Decachlorobiphenyl	*5.51*		"	*6.67*		*82.6*	*48-150*			
LCS Dup (3J16055-BSD1)										
Aroclor 1016	74.7	25.0	ug/kg	83.3		89.7	69-123	5.47	30	
Aroclor 1260	77.8	25.0	"	83.3		93.4	66-140	2.60	30	
Surrogate: TCX	*6.43*		"	*6.67*		*96.4*	*49-124*			
Surrogate: Decachlorobiphenyl	*5.67*		"	*6.67*		*85.0*	*48-150*			
Matrix Spike (3J16055-MS1)					Source: BJJ0452-06					
Aroclor 1016	99.6	25.0	ug/kg dry	95.2	ND	105	33-159			
Aroclor 1260	99.4	25.0	"	95.2	29.4	73.5	40-158			
Surrogate: TCX	*6.84*		"	*7.61*		*89.9*	*49-124*			
Surrogate: Decachlorobiphenyl	*6.12*		"	*7.61*		*80.4*	*48-150*			

North Creek Analytical - Bothell

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Jeff Gerdes

Jeff Gerdes, Project Manager

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URS Corporation 1501 4th Ave, Suite 1400 Seattle, WA/USA 98101-1616	Project: EGIP Project Number: 33756194 Project Manager: Gail Gislason	Amended Report Issued: 12/01/03 11:21

Polychlorinated Biphenyls by EPA Method 8082 - Quality Control

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3J16055: Prepared 10/16/03 Using EPA 3550B										
Matrix Spike Dup (3J16055-MSD1)					**Source: B3J0452-06**					
Aroclor 1016	99.0	25.0	ug/kg dry	95.2	ND	104	33-159	0.604	35	
Aroclor 1260	102	25.0	"	95.2	29.4	76.3	40-156	2.58	35	
Surrogate: TCX	*6.85*		"	*7.61*		*90.0*	*49-124*			
Surrogate: Decachlorobiphenyl	*6.37*		"	*7.61*		*84.0*	*48-150*			

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URS Corporation	Project: HGP	
1501 4th Ave, Suite 1400	Project Number: 33756194	Amended Report
Seattle, WA/USA 98101-1616	Project Manager: Gail Gislason	Issued: 12/01/03 11:21

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3J16011: Prepared 10/16/03 Using Dry Weight										
Blank (3J16011-BLK1)										
Dry Weight	100	1.00	%							
Batch 3J16013: Prepared 10/16/03 Using Dry Weight										
Blank (3J16013-BLK1)										
Dry Weight	100	1.00	%							
Batch 3J18010: Prepared 10/18/03 Using Dry Weight										
Blank (3J18010-BLK1)										
Dry Weight	100	1.00	%							

North Creek Analytical - Bothell

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Jeff Gerdes

Jeff Gerdes, Project Manager

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URS Corporation	Project: HGP	
1501 4th Ave, Suite 1400	Project Number: 33756194	Amended Report
Seattle, WA/USA 98101-1616	Project Manager: Gail Gielason	Issued: 12/01/03 11:21

Notes and Definitions

D-09	Results in the diesel organics range are primarily due to overlap from a heavy oil range product.
Q-29	This sample was prepared outside of the method established holding time.
S-01	The surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interferences.
S-06	The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interferences.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

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Tacoma, Washington 98445
253-537-5852 Tacoma 253-838-0651 Seattle
Fax 253-531-9548

LETTER OF TRANSMITTAL

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ATTENTION: Dean Montgomery

RE: IFB #C40243

(1) EAW

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WE ARE SENDING YOU ☐ Attached ☐ Under separate cover via ____ the following items:

☐ Shop drawings ☐ Prints ☐ Plans ☐ Samples ☐ Specifications

☐ Copy of letter ☐ Change order ☐ ____

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1	5-6-04		Submittal 02080-1.3 - Confirmatory Sampling Result

THESE ARE TRANSMITTED as checked below:

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☐ FOR BIDS DUE ____ ☐ PRINTS RETURNED AFTER LOAN TO US

REMARKS Post remediation samples for the home Yard and sample results for the office Bldg. cesspool.

COPY TO File

SIGNED: Joan Bate

If enclosures are not as noted, kindly notify us at once.

Table 2
Summary of Post Excavation Soil Analytical Results
Hanford Generating Plant - Turbine Generator Building Demolition Project
Hanford, Washington

SWMU ID (Site Location)	Sample ID[1]	Approximate Sample Depth (feet, bgs)	Petroleum Hydrocarbons (mg/kg)		Lead[2] (mg/kg)
			Diesel-Range[3]	Oil-Range[3]	
SWMU #10 (Disposal "bone" yard)	SWMU 10-6PE1	2	ND	ND	-
	SWMU 10-6PE2	2	ND	ND	-
	SWMU 10-6PE3	2	ND	ND	-
	SWMU 10-7PE1	2	ND	940	ND
	SWMU 10-7PE2	2	ND	ND	3.6
	SWMU 10-7/8PE3*	2	ND	330	ND
	SWMU 10-8PE1	2	ND	640	ND
	SWMU 10-8PE2	2	ND	ND	ND
	SWMU 10-9PE1	2	ND	250	-
	SWMU 10-9PE2	2	ND	ND	-
	SWMU 10-9PE3	2	ND	ND	-
	SWMU 10-13PE1	1.5	-	-	ND
	SWMU 10-13PE2	1.5	-	-	ND
	SWMU 10-13PE3	1.5	-	-	ND
MTCA Method A Soil Cleanup Level			2,000	2,000	250

Notes:
bgs = below ground surface
MTCA = Model Toxics Control Act
mg/kg = milligrams per kilogram (parts per million)
ND = Not detected above the laboratory reporting limits.
"-" = not analyzed
[1] Post excavation soil samples collected on 5/4/04.
[2] Samples analyzed using NWTPH-Dx extended method for diesel- and oil-range hydrocarbons, and mineral oil.
[3] Samples analyzed using EPA Method 7010 for lead.
* Laboratory composite sample

URS CORPORATION

Advanced Analytical Laboratory
(425) 487-0410, fax (425) 487-8099

AAL Job Number: A40505-1
Client: URS Corp.
Project Manager: Thomas Kim
Client Project Name: HGP
Client Project Number: 33758194
Date received: 05/05/04

Analytical Results				PE1	PE2	PE3
NWTPH-Dx, mg/kg		MTH BLK	SWMU-9-4	SWMU-10-8	SWMU-10-6	SWMU-10-9
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	05/05/04	05/05/04	05/05/04	05/05/04	05/05/04
Date analyzed	Limits	05/05/04	05/05/04	05/05/04	05/05/04	05/05/04
Kerosene/Jet fuel	20	nd	nd	nd	nd	nd
Diesel/Fuel oil	20	nd	nd	nd	nd	nd
Heavy oil	50	nd	nd	nd	nd	nd
Surrogate recoveries:						
Fluorobiphenyl		101%	101%	101%	101%	103%
o-Terphenyl		100%	98%	100%	100%	101%

Data Qualifiers and Analytical Comments
nd - not detected at listed reporting limits
na - not analyzed
C - coelution with sample peaks
M - matrix interference
J - estimated value
Results reported on dry-weight basis
Acceptable Recovery limits: 70% TO 130%
Acceptable RPD limit: 30%

URGENT

Post-it® Fax Note 7671	Date 5/6/4 # of pages ▶ 7
To Thomas Kim	From Val Tinnow
Co./Dept. URS	Co. AAL
Phone #	Phone #
Fax #	Fax #

05/06/04 THU 08:44 [TX/RX NO 5634]

Advanced Analytical Laboratory
(425) 497-0110; fax (425) 497-0050

AAL Job Number: A40505-1
Client: URS Corp.
Project Manager: Thomas Kim
Client Project Name: HGP
Client Project Number: 33756134
Date received: 05/05/04

Analytical Results					Composite	
			PE1	PE2	PE3	PE1
NWTPH-Dx, mg/kg		MTH BLK	SWMU-10-7	SWMU-10-7	SWMU-10-7/8	SWMU-10-8
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	05/05/04	05/05/04	05/05/04	05/05/04	05/05/04
Date analyzed	Limits	05/05/04	05/05/04	05/05/04	05/05/04	05/05/04
Kerosene/Jet fuel	20	nd	nd	nd	nd	nd
Diesel/Fuel oil	20	nd	nd	nd	nd	nd
Heavy oil	50	nd	640	nd	330	640
Surrogate recoveries:						
Fluorobiphenyl		101%	102%	103%	99%	101%
o-Terphenyl		100%	101%	101%	98%	100%

Data Qualifiers and Analytical Comments:
nd - not detected at listed reporting limits
na - not analyzed
C - coelution with sample peaks
M - matrix interference
J - estimated value
Results reported on dry-weight basis
Acceptable Recovery limits: 70% TO 130%
Acceptable RPD limit: 30%

05/06/04 THU 08:44 [TX/RX NO 5341]

Advanced Analytical Laboratory
(425) 497-0110, fax (425) 497-8089

AAL Job Number: A40505-1
Client: URS Corp.
Project Manager: Thomas Kim
Client Project Name: HGP
Client Project Number: 37798194
Date received: 05/05/04

Analytical Results			PE2	PE1	PE2	PE3
NWTPH-Dx, mg/kg		MTH BLK	SWMU-10-8	SWMU-10-9	SWMU-10-9	SWMU-10-9
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	05/05/04	05/05/04	05/05/04	05/05/04	05/05/04
Date analyzed	Limits	05/05/04	05/05/04	05/05/04	05/05/04	05/05/04
Kerosene/Jet fuel	20	nd	nd	nd	nd	nd
Diesel/Fuel oil	20	nd	nd	nd	nd	nd
Heavy oil	50	nd	nd	250	nd	nd
Surrogate recoveries:						
Fluorobiphenyl		101%	102%	92%	100%	98%
o-Terphenyl		100%	101%	92%	97%	98%

Data Qualifiers and Analytical Comments
nd - not detected at listed reporting limits
na - not analyzed
C - coelution with sample peaks
M - matrix interference
J - estimated value
Results reported on dry-weight basis
Acceptable Recovery limits: 70% TO 130%
Acceptable RPD limit: 30%

Advanced Analytical Laboratory
(425) 487-0110, fax (425) 487-8089

AAL Job Number:	A40505-1
Client:	URS Corp.
Project Manager:	Thomas Kim
Client Project Name:	HGP
Client Project Number:	33756194
Date received:	05/05/04

Analytical Results						Composite
				PE1	PE2	PE3
Metals (7010), mg/kg		MTH BLK	LCS	SWMU-10-7	SWMU-10-7	SWMU-10-7/8
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	05/05/04	05/05/04	05/05/04	05/05/04	05/05/04
Date analyzed	Limits	05/05/04	05/05/04	05/05/04	05/05/04	05/05/04
Lead (Pb)	1.0	nd	104%	nd	3.6	nd

Data Qualifiers and Analytical Comments
nd - not detected at listed reporting limits
na - not analyzed
Acceptable Recovery limits: 70% TO 130%
Acceptable RPD limit: 30%

URGENT

Post-it® Fax Note 7671	Date 5/6/4 # of pages ▶ 3
To Thomas Kim	From Val Ivanov
Co./Dept. URS	Co. AAL
Phone #	Phone #
Fax #	Fax #

05/06/04 THU 09:36 [TX/RX NO 5837]

Advanced Analytical Laboratory
(425) 497-0110, fax (425) 497-8089

AAL Job Number: A405005-1
Client: URS Corp.
Project Manager: Thomas Kim
Client Project Name: HCP
Client Project Number: 33755194
Date received: 05/05/04

Analytical Results			Dupl Composite PE3	PE1	PE2
Metals (7010), mg/kg		MTH BLK	SWMU-10-7/8	SWMU-10-8	SWMU-10-8
Matrix	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	05/05/04	05/05/04	05/05/04	05/05/04
Date analyzed	Limits	05/05/04	05/05/04	05/05/04	05/05/04
Lead (Pb)	1.0	nd	nd	nd	nd

Data Qualifiers and Analytical Comments
nd - not detected at listed reporting limits
na - not analyzed
Acceptable Recovery limits: 70% TO 130%
Acceptable RPD limit: 30%

Advanced Analytical Laboratory
(425) 497-0110, fax (425) 497-0099

AAL Job Number: A40505-1
Client: URS Corp.
Project Manager: Thomas Kim
Client Project Name: HGP
Client Project Number: 33758194
Date received: 05/05/04

Analytical Results			PE1	PE2	PE3
Metals (7010), mg/kg		MTH BLK	SWMU-10-13	SWMU-10-13	SWMU-10-13
Matrix	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	05/05/04	05/05/04	05/05/04	05/05/04
Date analyzed	Limits	05/05/04	05/05/04	05/05/04	05/05/04
Lead (Pb)	1.0	nd	nd	nd	nd

Data Qualifiers and Analytical Comments
nd - not detected at listed reporting limits
na - not analyzed
Acceptable Recovery limits: 70% TO 130%
Acceptable RPD limit: 30%

Table 1
Summary of Confirmational Soil Analytical Results
Hanford Generating Plant—Turbine Generator Building Demolition Project
Hanford, Washington

SWMU ID (Site Location)	Sample ID	Sample Date	Petroleum Hydrocarbons (mg/kg)			BTEX[2] (µg/kg)	PCBs[3] (Aroclor 1242) (µg/kg)	RCRA Metals[4] (mg/kg)								TCLP (Lead)[5] (mg/L)	EOX[6] (µg/kg)	Cobalt 60	Radio nuclides
			Diesel-Range[7]	Oil-Range[7]	Mineral Oil[8]			Arsenic	Barium	Cadmium	Chromium	Mercury	Lead	Selenium	Silver				
SWMU 8 Former Maintenance Garage	SWMU 8-1	02/05/04	ND	261	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	SWMU 8-2	02/05/04	994	4,160	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	SWMU 8-3	02/05/04	1,840	7,120	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	SWMU 8-4	04/15/04	ND	270	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SWMU 9 Former Guard Shack	SWMU 9-1	02/05/04	ND	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	SWMU 9-2	02/05/04	ND	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	SWMU 9-3	04/15/04	ND	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SWMU 10 (Disposal "burn" pit)	SWMU 10-1	10/09/03	11 *	187	-	-	-	2.23	69.4	ND	11.2	ND	11.8	ND	ND	-	-	-	-
	SWMU 10-2	10/09/03	ND	ND	-	-	-	1.02	43.3	ND	9.30	ND	23.3	ND	ND	-	-	-	-
	SWMU 10-3	10/09/03	ND	37.4	-	-	-	1.70	67.5	ND	9.72	ND	9.54	ND	ND	-	-	-	-
	SWMU 10-4	10/09/03	11 *	119	-	-	-	1.77	70.6	ND	10.3	ND	14.1	ND	ND	-	-	-	-
	SWMU 10-5	10/09/03	99.3 *	407	-	-	-	1.70	95.5	ND	9.33	ND	13.8	ND	ND	-	-	-	-
	SWMU 10-6	10/09/03	440 *	3,000	-	-	-	2.37	100	ND	12.1	ND	9.84	ND	ND	-	-	-	-
	SWMU 10-7	10/09/03	5,130 *	34,100	-	-	-	3.98	349	1.44	32.8	ND	649	ND	1.49	-	-	-	-
	SWMU 10-7B	04/15/04	- -	-	-	ND	-	-	-	-	-	-	-	-	-	-	ND	-	-
	SWMU 10-8	10/09/03	4,510 *	34,400	-	-	-	2.40	300	0.94	12.9	ND	686	0.904	ND	-	-	-	-
	SWMU 10-8B	04/15/04	-	-	-	ND	-	-	-	-	-	-	-	-	-	-	ND	-	-
	SWMU 10-9	10/09/03	4,300 *	33,300	-	-	-	2.29	371	0.723	31.2	ND	222	ND	0.609	-	-	-	-
	SWMU-10-13-2	02/05/04	-	-	-	-	-	-	-	-	-	-	362	-	-	-	-	-	-
	SWMU-10-13B	04/15/04	-	-	-	ND	-	-	-	-	-	-	-	-	-	ND	ND	-	-
MTCA Method A or B Soil Cleanup Level			2,000 (A)	2,000 (A)	2,000 (A)	-	1,000 (A)	20 (A)	5,600 (B)	2 (A)	2,000 (A)[9]	2 (A)	250 (A)	400 (B)	400 (B)	-	-	1.4 pCi/g (EPA MCL)	23.5 pCi/g (EPA MCL)

Notes:
MTCA = Model Toxics Control Act (A) = Method A residential (B) = Method B
mg/kg = milligram per kilogram (parts per million)
µg/kg = microgram per kilogram (parts per billion)
pCi/g = pico-curies per gram (EPA Maximum Contaminant Level for Cobalt 60)
J = estimated value
ND = Not detected above the laboratory reporting limits.
"-" = not analyzed
Numbers in bold font indicate that the result reported exceeds the MTCA cleanup level.

[1] Samples analyzed using NWTPH-Dx extended method for diesel- and oil-range hydrocarbons, and mineral oil.
[2] BTEX = benzene, toluene, ethylbenzene, and xylenes (samples analyzed using EPA Method 8021B).
[3] Samples analyzed using EPA Method 8082.
Aroclorlisting PCB (Aroclor) compounds were analyzed and were below the laboratory reporting limits.
[4] Samples analyzed using EPA Method 6000/7000 series.
[5] TCLP = Toxicity Characteristic Leachate Procedure (samples analyzed using EPA Method 6010B for lead).
[6] EOX = Extractable Organics (samples analyzed using EPA Method 9023).
[7] MTCA Method A cleanup level for total chromium.
[8] Sample results associated with overlaps from heavy oil range product.

North Creek Analytical

CHAIN OF CUSTODY RECORD

Page 1 of 1

Special Handling:
- ☒ Standard TAT - 7 to 10 business days
- ☐ Rush TAT - Date Needed: _____
- All TATs subject to laboratory approval.
- Min. 24-hour notification needed for rushes
- All samples are disposed of after 60 days unless otherwise instructed.

Report To: Gail Gislason
URS Corporation
1501 Fourth Ave. Ste 1900
Seattle, WA 98101
Project Mgr.: Gail Gislason

Invoice To: Same
P.O. No.: project # RQN: _____

Project No.: 23756199.00006
Site Name: Hanford Generation Plant
Location: Hanford State: WA
Sampler(s): Gail Gislason

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid
7=CH_3OH 8=$NaHSO_4$ 9=_____ 10=_____

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW=Surface Water SO=Soil SL=Sludge A=Air
X1=_____ X2=_____ X3=_____

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Preservative	# of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	Analyzed and Held						Notes:
AD	SWMU 8-1-2	2/6/04	14:00	SO		1			1		X						B4B011S - 01
AD	SWMU 9-1		16:00	SO		1			1								02
AD	SWMU 9-2		16:15	SO		1			1								03
AD	SWMU 8-1		17:00	SO		1			1								04
AD	SWMU 8-2		17:15	SO		1			1								05
AD	SWMU 8-3		17:30	SO		1			1								06
AD																	
AD																	
AD																	
AD																	

hold, will call Jeff Geerdes to discuss which VOCs

☒ Fax results when available to (Dale) 495-5288
☐ E-mail results when available to _____
Condition upon Receipt: ☐ Iced ☐ Ambient ☐ ____°C

Relinquished by:	Received by:	Date:	Time:
[signature]	[signature]	2/4/04	1220

15.9 w/c

[redacted] Chicopee, Massachusetts 01001 • 413-[redacted] • Fax 413-[redacted] • www.spectrum-[redacted].com

E-5646

DOE/RL-2008-46-ADD5, REV. 0

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9405 SW Nimbus Ave, Beaverton, OR 97008-7132 503-906-9200 FAX 906-9210
20332 Empire Ave Suite F-1, Bend, OR 97701-5711 541-383-9310 FAX 382-7588
3209 Denali St, Anchorage, AK 99503-4030 907-334-9200 FAX 334-9210

CHAIN OF CUSTODY REPORT

Work Order #: B3J0357

CLIENT: URS Corp.
REPORT TO: Gail Gibson
ADDRESS: 1501 - 4th Ave, Suite 1900, Seattle, WA 98101
PHONE: 206-438-2700 FAX: 866-495-5285
PROJECT NAME: HGP
PROJECT NUMBER: 3756694
SAMPLED BY: Thomas Kim

INVOICE TO: Gail_Gibson@urscorp.com
P.O. NUMBER:

TURNAROUND REQUEST
In Business Days *
Organic & Inorganic Analyses: 10 STD, 7, 5, 4, 3, 2, 1, <1
Petroleum Hydrocarbon Analyses: 5 STD, 4, 3, 2, 1, <1
OTHER Specify:
* Turnaround requests less than standard may incur Rush Charges

PRESERVATIVE
REQUESTED ANALYSES

CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	PCBs	Metals (Total)	Metals (Dissolved)	MATRIX (W, S, O)	# OF CONT.	LOCATION / COMMENTS	NCA WO ID
1 SWMU1-5-1	10/9/03 12:30	X			S	1		01
2 SWMU1-5-2	12:32	X						02
3 SWMU1-5-3	12:34	X						03
4 SWMU1-3-1	12:42	X						04
5 SWMU1-3-2	12:48	X						05
6 SWMU1-3-3	12:50	X						06
7 SWMU1-9-3	13:18	X						07
8 SWMU1-9-1	13:08	X						08
9 SWMU1-9-2	13:12	X						09
10 SWMU5-1	13:40		X	X				10

RELEASED BY: [signature] PRINT NAME: Thomas Kim FIRM: URS DATE: 10/13/03 TIME: 11:20 Am
RECEIVED BY: [signature] PRINT NAME: Don Hollen FIRM: NCA DATE: 10/13/03 TIME: 11:20
RELEASED BY: [signature] PRINT NAME: Don Hollen FIRM: NCA DATE: 10/13/03 TIME: 1350
RECEIVED BY: [signature] PRINT NAME: Denise Hartman FIRM: NCA DATE: 10/13/03 TIME: 1350
ADDITIONAL REMARKS:
WYD
TEMP: 2.0

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11115 E Montgomery Suite B, Spokane, WA 99206-4776 509-924-9200 FAX 924-9290
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3109 Denali St, Anchorage, AK 99503-4030 907-334-9200 FAX 334-9210

CHAIN OF CUSTODY REPORT

Work Order #: B3J0357

CLIENT: UES Corp
REPORT TO: Gail Gibson
ADDRESS:
PHONE: 206-488-7700 FAX:
PROJECT NAME: 4SAP (Cont'd)
PROJECT NUMBER: 35756194
SAMPLED BY: Tom Hallin

INVOICE TO: GAIL G.
P.O. NUMBER:

PRESERVATIVE: EPA Methods (Bottle)

REQUESTED ANALYSES: NWTPH-Dx, PCBs (8082), Dissolved Cadmium (6010), NWTPH-Gx

TURNAROUND REQUEST (In Business Days *)
Organic & Inorganic Analyses: 10 (STD) | 7 | 5 | 4 | 3 | 2 | 1 | <1
Petroleum Hydrocarbon Analyses: 5 (STD) | 4 | 3 | 2 | 1 | <1
OTHER Specify:
* Turnaround Requests less than standard may have Rush Charges.

CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	NWTPH-Dx	PCBs (8082)	Dissolved Cadmium (6010)	NWTPH-Gx	MATRIX (W, S, O)	# OF CONT.	LOCATION / COMMENTS	NCA WO ID
1 SWMU5-2	10/9/03 13:48			X	X	S	1		11
2 SWMU5-3	13:55			X	X				12
3 SWMU5-4	14:00			X	X				13
4 SWMU6-1	14:57			X	X				14
5 SWMU6-2	15:02			X	X				15
6 SWMU6-3	15:05			X	X				16
7 SWMU6-4	15:10			X	X				17
8 SWMU6-5	15:17			X	X				18
9 SWMU6-6	15:20			X	X				19
10 SWMU6-7	15:25			X	X				20

RELEASED BY: Tom Hallin — PRINT NAME: Tom Hallin — FIRM: UES — DATE: 10/13/03 — TIME: 11:20 AM
RECEIVED BY: Don Hallin — PRINT NAME: Don Hallin — FIRM: NCA — DATE: 10/13/03 — TIME: 1120
RELEASED BY: Don Hallin — PRINT NAME: Don Hallin — FIRM: NCA — DATE: 10/13/03 — TIME: 1350
RECEIVED BY: [illegible] — PRINT NAME: Jenn Hudson — FIRM: NCA — DATE: 10/13/03 — TIME: 13:50
ADDITIONAL REMARKS:
W/U
TEMP: 6.0
PAGE 2 OF

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11115 E Montgomery Suite B, Spokane, WA 99206-4776 509-924-9200 FAX 924-9290
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3209 Denali St, Anchorage, AK 99503-4050 907-334-9200 FAX 334-9210

CHAIN OF CUSTODY REPORT

Work Order #: B3J0357

CLIENT: UES Corp.
REPORT TO: Gail G.
ADDRESS:
PHONE: 206 498-7700 FAX.
PROJECT NAME: HGF (cont'd)
PROJECT NUMBER: 3375694
SAMPLED BY: Tom Fuller

INVOICE TO: Gail G.
P.O. NUMBER:

PRESERVATIVE

REQUESTED ANALYSES

TURNAROUND REQUEST
in Business Days *
Organic & Inorganic Analyses: 10 (Std.) | 7 | 5 | 4 | 3 | 2 | 1 | <1
Petroleum Hydrocarbon Analyses: 5 (Std.) | 4 | 3 | 2 | 1 | <1
OTHER Specify:
* Turnaround requests less than standard may incur Rush Charges.

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	Metals (Total)	Cyanide (Total)	Phenols (Total)		MATRIX (W, S, O)	# OF CONT.	LOCATION / COMMENTS	NCA WO ID
1	SWMU6-8	10/9/03 1530	X	X	2		S	1		21
2	SWMU 5-5	1620	X	X	2					22
3	SWMU 5-6	1625	X	X	2					23
4	SWMU5-7	1630	X	X	2					24
5	SWMU 5-8	1635	X	X	2					25
6	SWMU10-1	1647	X	X						26
7	SWMU10-2	1650	X	X						27
8	SWMU 10-3	1655	X	X						28
9	SWMU10-4	1700	X	X						29
10	SWMU 10-5	1703	X	X						30

RELEASED BY: Tom Fuller	DATE: 10/10/03	RECEIVED BY: Tom Fuller	DATE: 10/13/03
PRINT NAME: Tom Fuller FIRM: UES	TIME: 11:20 am	PRINT NAME: Jon Holers FIRM: NCA	TIME: 1120
RELEASED BY: Jon Holers FIRM: NCA	DATE: 10/13/03	RECEIVED BY: [illegible]	DATE: 10-13-03
PRINT NAME: Jon Holers	TIME: 1350	PRINT NAME: Bonn Hardman FIRM: NCA	TIME: 13:50

ADDITIONAL REMARKS: W/O 10-0 back 3 or

nca

Revised Chain of Custody

11720 North Creek Pkwy N Suite 400, Bothell, WA 98011-8508 425-420-9200 FAX 420-9210
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3209 Denali St, Anchorage, AK 99503-4090 907-334-9200 FAX 334-9210

CHAIN OF CUSTODY REPORT

Work Order #: B3J0357

CLIENT: URS Corp.
REPORT TO: Gail L.
ADDRESS:
PHONE: 376-4587200 FAX:
INVOICE TO: Gail G.
P.O. NUMBER:
PROJECT NAME: HGP (cont'd)
PROJECT NUMBER: 33756094
SAMPLED BY: Tommy Kim

TURNAROUND REQUEST (In Business Days *)
Organic & Inorganic Analyses: 10 (STD) | 7 | 5 | 4 | 3 | 2 | 1 | <1
Petroleum Hydrocarbon Analyses: 5 (STD) | 4 | 3 | 2 | 1 | <1
OTHER Specify:
* Turnaround Requests less than standard may incur Rush Charges.

PRESERVATIVE
REQUESTED ANALYSIS

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	Metals (Dissolved)	Metals (Total)	Metals (Total) Hg	MATRIX (W, S, O)	# OF CONT.	LOCATION / COMMENTS	NCA WO ID
1	SWMU10-6	10/9/03 1706	X	X		S	1		31
2	SWMU10-7	1710	X	X					32
3	SWMU10-8	1713	X	X					33
4	SWMU10-9	1716	X	X					34
5	SWMU10-10	1720	X	X					35
6	SWMU 6-2(DUP)	10/9/03 15:00				S	1		36
7									
8									
9									
10									

CW

RELEASED BY: Tommy Kim — PRINT NAME: Tommy Kim — FIRM: URS — DATE: 10/9/03 — TIME: 1120
RECEIVED BY: Jon Holden — PRINT NAME: Jon Holden — FIRM: NCA — DATE: 10/9/03 — TIME: 1120
RELEASED BY: Jon Holden — PRINT NAME: Jon Holden — FIRM: NCA — DATE: 10/13/03 — TIME: 1350
RECEIVED BY: [illegible] — PRINT NAME: Denn Hardman — FIRM: NCA — DATE: 10-13-03 — TIME: 13:50
ADDITIONAL REMARKS:
COC REV 1/03
WJ 10-0 — PAGE 1 OF 1

www.ncalabs.com

Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244
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509.924.9200 fax 509.924.9290
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132
503.906.9200 fax 503.906.9210
Bend 30332 Empire Avenue, Suite F-1, Bend, OR 97701-5711
541.383.9310 fax 541.382.7588
Anchorage 2000 W International Airport Road, Suite A-10, Anchorage, AK 99502-1119
907.561.9200 fax 907.562-9210

01 December 2003

Gail Gislason
URS Corporation
1501 4th Ave, Suite 1400
Seattle, WA/USA 98101-1616

RE: HGP

Enclosed are amended results of analyses for samples received by the laboratory on 10/13/03 13:50. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jeff Gerdes

Jeff Gerdes
Project Manager

nca™
www.ncalabs.com

Seattle 13720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244
425.420.9200 fax 425.420.9210
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503.906.9200 fax 503.906.9210
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711
541.383.9310 fax 541.382.7588
Anchorage 7000 W International Airport Road, Suite A-10, Anchorage, AK 99502-1119
907.563.9200 fax 907.563.9515

URS Corporation	Project: HGP	
1501 4th Ave, Suite 1400	Project Number: 35756194	**Amended Report**
Seattle, WA/USA 98101-1616	Project Manager: Gail Gislason	Issued: 12/01/03 11:21

ANALYTICAL REPORT FOR SAMPLES - Amended

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SWMV 1-5-1	B3J0357-01	Soil	10/09/03 12:30	10/13/03 13:50
SWMV 1-5-2	B3J0357-02	Soil	10/09/03 12:32	10/13/03 13:50
SWMV 1-5-3	B3J0357-03	Soil	10/09/03 12:34	10/13/03 13:50
SWMV 1-3-1	B3J0357-04	Soil	10/09/03 12:42	10/13/03 13:50
SWMV 1-3-2	B3J0357-05	Soil	10/09/03 12:48	10/13/03 13:50
SWMV 1-3-3	B3J0357-06	Soil	10/09/03 12:50	10/13/03 13:50
SWMV 1-9-3	B3J0357-07	Soil	10/09/03 13:18	10/13/03 13:50
SWMV 1-9-1	B3J0357-08	Soil	10/09/03 13:08	10/13/03 13:50
SWMV 1-9-2	B3J0357-09	Soil	10/09/03 13:12	10/13/03 13:50
SWMV 5-1	B3J0357-10	Soil	10/09/03 13:40	10/13/03 13:50
SWMV 5-2	B3J0357-11	Soil	10/09/03 13:48	10/13/03 13:50
SWMV 5-3	B3J0357-12	Soil	10/09/03 13:55	10/13/03 13:50
SWMV 5-4	B3J0357-13	Soil	10/09/03 14:00	10/13/03 13:50
SWMV 6-1	B3J0357-14	Soil	10/09/03 14:57	10/13/03 13:50
SWMV 6-2	B3J0357-15	Soil	10/09/03 15:02	10/13/03 13:50
SWMV 6-3	B3J0357-16	Soil	10/09/03 15:05	10/13/03 13:50
SWMV 6-4	B3J0357-17	Soil	10/09/03 15:10	10/13/03 13:50
SWMV 6-5	B3J0357-18	Soil	10/09/03 15:17	10/13/03 13:50
SWMV 6-6	B3J0357-19	Soil	10/09/03 15:20	10/13/03 13:50
SWMV 6-7	B3J0357-20	Soil	10/09/03 15:25	10/13/03 13:50
SWMV 6-8	B3J0357-21	Soil	10/09/03 15:30	10/13/03 13:50
SWMV 5-5	B3J0357-22	Soil	10/09/03 16:20	10/13/03 13:50
SWMV 5-6	B3J0357-23	Soil	10/09/03 16:25	10/13/03 13:50
SWMV 5-7	B3J0357-24	Soil	10/09/03 16:30	10/13/03 13:50
SWMV 5-8	B3J0357-25	Soil	10/09/03 16:35	10/13/03 13:50
SWMV 10-1	B3J0357-26	Soil	10/09/03 16:47	10/13/03 13:50
SWMV 10-2	B3J0357-27	Soil	10/09/03 16:50	10/13/03 13:50
SWMV 10-3	B3J0357-28	Soil	10/09/03 16:55	10/13/03 13:50
SWMV 10-4	B3J0357-29	Soil	10/09/03 17:00	10/13/03 13:50

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URS Corporation	Project: HGP	
1501 4th Ave, Suite 1400	Project Number: 33756194	Amended Report
Seattle, WA/USA 98101-1616	Project Manager: Gail Gislason	Issued: 12/01/03 11:21

ANALYTICAL REPORT FOR SAMPLES - Amended

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SWMV 10-5	B310357-30	Soil	10/09/03 17:00	10/13/03 13:50
SWMV 10-6	B310357-31	Soil	10/09/03 17:06	10/13/03 13:50
SWMV 10-7	B310357-32	Soil	10/09/03 17:10	10/13/03 13:50
SWMV 10-8	B310357-33	Soil	10/09/03 17:13	10/13/03 13:50
SWMV 10-9	B310357-34	Soil	10/09/03 17:16	10/13/03 13:50

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URS Corporation	Project: HGP	
1501 4th Ave, Suite 1400	Project Number: 33756194	Amended Report
Seattle, WA/USA 98101-1616	Project Manager: Gail Gislason	Issued: 12/01/03 11:21

Semivolatile Petroleum Products by NWTPH-Dx (w/o Acid/Silica Gel Clean-up)

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SWMV 5-1 (B3J0357-10) Soil Sampled: 10/09/03 13:40 Received: 10/13/03 13:50									
Diesel Range Hydrocarbons	ND	10.0	mg/kg dry	1	3J16027	10/16/03	10/17/03	NWTPH-Dx	
Lube Oil Range Hydrocarbons	ND	25.0	"	"	"	"	"	"	
Surrogate: 2-FBP	*99.1 %*	*50-150*			"	"	"	"	
Surrogate: Octacosane	*114 %*	*57-120*			"	"	"	"	
SWMV 5-2 (B3J0357-11) Soil Sampled: 10/09/03 13:48 Received: 10/13/03 13:50									
Diesel Range Hydrocarbons	ND	10.0	mg/kg dry	1	3J16027	10/16/03	10/17/03	NWTPH-Dx	
Lube Oil Range Hydrocarbons	ND	25.0	"	"	"	"	"	"	
Surrogate: 2-FBP	*88.4 %*	*50-150*			"	"	"	"	
Surrogate: Octacosane	*103 %*	*57-120*			"	"	"	"	
SWMV 5-3 (B3J0357-12) Soil Sampled: 10/09/03 13:55 Received: 10/13/03 13:50									
Diesel Range Hydrocarbons	ND	10.0	mg/kg dry	1	3J16027	10/16/03	10/17/03	NWTPH-Dx	
Lube Oil Range Hydrocarbons	ND	25.0	"	"	"	"	"	"	
Surrogate: 2-FBP	*93.9 %*	*50-150*			"	"	"	"	
Surrogate: Octacosane	*104 %*	*57-120*			"	"	"	"	
SWMV 5-4 (B3J0357-13) Soil Sampled: 10/09/03 14:00 Received: 10/13/03 13:50									
Diesel Range Hydrocarbons	ND	10.0	mg/kg dry	1	3J16027	10/16/03	10/17/03	NWTPH-Dx	
Lube Oil Range Hydrocarbons	ND	25.0	"	"	"	"	"	"	
Surrogate: 2-FBP	*84.6 %*	*50-150*			"	"	"	"	
Surrogate: Octacosane	*107 %*	*57-120*			"	"	"	"	
SWMV 6-1 (B3J0357-14) Soil Sampled: 10/09/03 14:57 Received: 10/13/03 13:50									
Diesel Range Hydrocarbons	ND	10.0	mg/kg dry	1	3J16027	10/16/03	10/17/03	NWTPH-Dx	
Lube Oil Range Hydrocarbons	ND	25.0	"	"	"	"	"	"	
Surrogate: 2-FBP	*92.7 %*	*50-150*			"	"	"	"	
Surrogate: Octacosane	*110 %*	*57-120*			"	"	"	"	

North Creek Analytical - Bothell

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URS Corporation 1501 4th Ave, Suite 1400 Seattle, WA/USA 98101-1616	Project: HGP Project Number: 37736194 Project Manager: Gail Gislason	Amended Report Issued: 12/01/03 11:21

Semivolatile Petroleum Products by NWTPH-Dx (w/o Acid/Silica Gel Clean-up)

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SWMV 6-2 (B3J0357-15) Soil Sampled: 10/09/03 15:02 Received: 10/13/03 13:50									
Diesel Range Hydrocarbons	ND	10.0	mg/kg dry	1	3J16027	10/16/03	10/17/03	NWTPH-Dx	
Lube Oil Range Hydrocarbons	ND	25.0	"	"	"	"	"	"	
Surrogate: 2-FBP	*93.6 %*	*50-150*			"	"	"	"	
Surrogate: Octacosane	*112 %*	*57-120*			"	"	"	"	
SWMV 6-3 (B3J0357-16) Soil Sampled: 10/09/03 15:05 Received: 10/13/03 13:50									
Diesel Range Hydrocarbons	ND	10.0	mg/kg dry	1	3J16027	10/16/03	10/17/03	NWTPH-Dx	
Lube Oil Range Hydrocarbons	ND	25.0	"	"	"	"	"	"	
Surrogate: 2-FBP	*93.5 %*	*50-150*			"	"	"	"	
Surrogate: Octacosane	*115 %*	*57-120*			"	"	"	"	
SWMV 6-4 (B3J0357-17) Soil Sampled: 10/09/03 15:10 Received: 10/13/03 13:50									
Diesel Range Hydrocarbons	ND	10.0	mg/kg dry	1	3J16027	10/16/03	10/17/03	NWTPH-Dx	
Lube Oil Range Hydrocarbons	ND	25.0	"	"	"	"	"	"	
Surrogate: 2-FBP	*95.4 %*	*50-150*			"	"	"	"	
Surrogate: Octacosane	*112 %*	*57-120*			"	"	"	"	
SWMV 6-5 (B3J0357-18) Soil Sampled: 10/09/03 15:17 Received: 10/13/03 13:50									
Diesel Range Hydrocarbons	ND	10.0	mg/kg dry	1	3J16027	10/16/03	10/17/03	NWTPH-Dx	
Lube Oil Range Hydrocarbons	ND	25.0	"	"	"	"	"	"	
Surrogate: 2-FBP	*96.3 %*	*50-150*			"	"	"	"	
Surrogate: Octacosane	*110 %*	*57-120*			"	"	"	"	
SWMV 6-6 (B3J0357-19) Soil Sampled: 10/09/03 15:20 Received: 10/13/03 13:50									
Diesel Range Hydrocarbons	10.0	10.0	mg/kg dry	1	3J16027	10/16/03	10/17/03	NWTPH-Dx	
Lube Oil Range Hydrocarbons	ND	25.0	"	"	"	"	"	"	
Surrogate: 2-FBP	*91.9 %*	*50-150*			"	"	"	"	
Surrogate: Octacosane	*107 %*	*57-120*			"	"	"	"	

North Creek Analytical - Bothell

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URS Corporation	Project: HRP	
1501 4th Ave, Suite 1400	Project Number: 33756194	**Amended Report**
Seattle, WA/USA 98101-1616	Project Manager: Gail Gielstom	Issued: 12/01/03 11:21

Semivolatile Petroleum Products by NWTPH-Dx (w/o Acid/Silica Gel Clean-up)

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SWMV 6-7 (B3J0357-20) Soil Sampled: 10/09/03 15:25 Received: 10/13/03 13:50									
Diesel Range Hydrocarbons	ND	10.0	mg/kg dry	1	3J16027	10/16/03	10/17/03	NWTPH-Dx	
Lube Oil Range Hydrocarbons	28.7	25.0	"	"	"	"	"	"	
Surrogate: 2-FBP	*98.2 %*	*50-150*			"	"	"	"	
Surrogate: Octacosane	*112 %*	*57-120*			"	"	"	"	
SWMV 6-8 (B3J0357-21) Soil Sampled: 10/09/03 15:30 Received: 10/13/03 13:50									
Diesel Range Hydrocarbons	ND	10.0	mg/kg dry	1	3J16027	10/16/03	10/17/03	NWTPH-Dx	
Lube Oil Range Hydrocarbons	ND	25.0	"	"	"	"	"	"	
Surrogate: 2-FBP	*90.6 %*	*50-150*			"	"	"	"	
Surrogate: Octacosane	*108 %*	*57-120*			"	"	"	"	
SWMV 5-5 (B3J0357-22) Soil Sampled: 10/09/03 16:20 Received: 10/13/03 13:50									
Diesel Range Hydrocarbons	ND	10.0	mg/kg dry	1	3J16027	10/16/03	10/17/03	NWTPH-Dx	
Lube Oil Range Hydrocarbons	ND	25.0	"	"	"	"	"	"	
Surrogate: 2-FBP	*104 %*	*50-150*			"	"	"	"	
Surrogate: Octacosane	*115 %*	*57-120*			"	"	"	"	
SWMV 5-6 (B3J0357-23) Soil Sampled: 10/09/03 16:25 Received: 10/13/03 13:50									
Diesel Range Hydrocarbons	ND	10.0	mg/kg dry	1	3J16027	10/16/03	10/17/03	NWTPH-Dx	
Lube Oil Range Hydrocarbons	ND	25.0	"	"	"	"	"	"	
Surrogate: 2-FBP	*84.3 %*	*50-150*			"	"	"	"	
Surrogate: Octacosane	*100 %*	*57-120*			"	"	"	"	
SWMV 5-7 (B3J0357-24) Soil Sampled: 10/09/03 16:30 Received: 10/13/03 13:50									
Diesel Range Hydrocarbons	ND	10.0	mg/kg dry	1	3J16027	10/16/03	10/17/03	NWTPH-Dx	
Lube Oil Range Hydrocarbons	ND	25.0	"	"	"	"	"	"	
Surrogate: 2-FBP	*97.2 %*	*50-150*			"	"	"	"	
Surrogate: Octacosane	*117 %*	*57-120*			"	"	"	"	

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URS Corporation 1501 4th Ave, Suite 1400 Seattle, WA/USA 98101-1616	Project: IHGP Project Number: 33756194 Project Manager: Gail Gislason	Amended Report Issued: 12/01/03 11:21

Semivolatile Petroleum Products by NWTPH-Dx (w/o Acid/Silica Gel Clean-up)

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SWMV 5-8 (B3J0357-25) Soil Sampled: 10/09/03 16:35 Received: 10/13/03 13:50									
Diesel Range Hydrocarbons	ND	10.0	mg/kg dry	1	3316027	10/16/03	10/17/03	NWTPH-Dx	
Lube Oil Range Hydrocarbons	25.4	25.0	"	"	"	"	"	"	
Surrogate: 2-FBP	*92.4 %*	*50-150*			"	"	"	"	
Surrogate: Octacosane	*103 %*	*57-120*			"	"	"	"	
SWMV 10-1 (B3J0357-26) Soil Sampled: 10/09/03 16:47 Received: 10/13/03 13:50									
Diesel Range Hydrocarbons	18.0	10.0	mg/kg dry	1	3316027	10/16/03	10/17/03	NWTPH-Dx	D-09
Lube Oil Range Hydrocarbons	167	25.0	"	"	"	"	"	"	
Surrogate: 2-FBP	*89.7 %*	*50-150*			"	"	"	"	
Surrogate: Octacosane	*110 %*	*57-120*			"	"	"	"	
SWMV 10-2 (B3J0357-27) Soil Sampled: 10/09/03 16:50 Received: 10/13/03 13:50									
Diesel Range Hydrocarbons	ND	10.0	mg/kg dry	1	3316027	10/16/03	10/17/03	NWTPH-Dx	
Lube Oil Range Hydrocarbons	ND	25.0	"	"	"	"	"	"	
Surrogate: 2-FBP	*84.4 %*	*50-150*			"	"	"	"	
Surrogate: Octacosane	*105 %*	*57-120*			"	"	"	"	
SWMV 10-3 (B3J0357-28) Soil Sampled: 10/09/03 16:55 Received: 10/13/03 13:50									
Diesel Range Hydrocarbons	ND	10.0	mg/kg dry	1	3316027	10/16/03	10/17/03	NWTPH-Dx	
Lube Oil Range Hydrocarbons	37.6	25.0	"	"	"	"	"	"	
Surrogate: 2-FBP	*94.5 %*	*50-150*			"	"	"	"	
Surrogate: Octacosane	*116 %*	*57-120*			"	"	"	"	
SWMV 10-4 (B3J0357-29) Soil Sampled: 10/09/03 17:00 Received: 10/13/03 13:50									
Diesel Range Hydrocarbons	11.0	10.0	mg/kg dry	1	3316027	10/16/03	10/17/03	NWTPH-Dx	D-09
Lube Oil Range Hydrocarbons	119	25.0	"	"	"	"	"	"	
Surrogate: 2-FBP	*80.3 %*	*50-150*			"	"	"	"	
Surrogate: Octacosane	*103 %*	*57-120*			"	"	"	"	

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URS Corporation	Project: HGP	
1501 4th Ave, Suite 1400	Project Number: 53756194	Amended Report
Seattle, WA/USA 98101-1616	Project Manager: Gail Gislason	Issued: 12/01/03 11:21

Semivolatile Petroleum Products by NWTPH-Dx (w/o Acid/Silica Gel Clean-up)

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SWMV 10-5 (B3J0357-30) Soil Sampled: 10/09/03 17:03 Received: 10/13/03 13:50									
Diesel Range Hydrocarbons	59.2	20.0	mg/kg dry	2	3J16028	10/16/03	10/17/03	NWTPH-Dx	D-09
Lube Oil Range Hydrocarbons	407	50.0	"	"	"	"	"	"	
Surrogate: 2-FBP	*83.4 %*	*50-150*			"	"	"	"	
Surrogate: Octacosane	*116 %*	*57-120*			"	"	"	"	
SWMV 10-6 (B3J0357-31) Soil Sampled: 10/09/03 17:06 Received: 10/13/03 13:50									
Diesel Range Hydrocarbons	440	400	mg/kg dry	40	3J16028	10/16/03	10/16/03	NWTPH-Dx	D-09
Lube Oil Range Hydrocarbons	3050	1000	"	"	"	"	"	"	
Surrogate: 2-FBP	*%*	*50-150*			"	"	"	"	*S-01*
Surrogate: Octacosane	*%*	*57-120*			"	"	"	"	*S-01*
SWMV 10-7 (B3J0357-32) Soil Sampled: 10/09/03 17:10 Received: 10/13/03 13:50									
Diesel Range Hydrocarbons	5120	1010	mg/kg dry	40	3J16028	10/16/03	10/17/03	NWTPH-Dx	D-09
Lube Oil Range Hydrocarbons	34100	6290	"	100	"	"	10/17/03	"	
Surrogate: 2-FBP	*%*	*50-150*			"	"	*10/17/03*	"	*S-01*
Surrogate: Octacosane	*%*	*57-120*			"	"	*10/17/03*	"	*S-01*
SWMV 10-8 (B3J0357-33) Soil Sampled: 10/09/03 17:13 Received: 10/13/03 13:50									
Diesel Range Hydrocarbons	4510	1010	mg/kg dry	40	3J16028	10/16/03	10/17/03	NWTPH-Dx	D-09
Lube Oil Range Hydrocarbons	24400	2530	"	"	"	"	"	"	
Surrogate: 2-FBP	*%*	*50-150*			"	"	"	"	*S-01*
Surrogate: Octacosane	*%*	*57-120*			"	"	"	"	*S-01*
SWMV 10-9 (B3J0357-34) Soil Sampled: 10/09/03 17:16 Received: 10/13/03 13:50									
Diesel Range Hydrocarbons	4320	1010	mg/kg dry	40	3J16028	10/16/03	10/17/03	NWTPH-Dx	D-09
Lube Oil Range Hydrocarbons	23900	2530	"	"	"	"	"	"	
Surrogate: 2-FBP	*%*	*50-150*			"	"	"	"	*S-01*
Surrogate: Octacosane	*%*	*57-120*			"	"	"	"	*S-01*

North Creek Analytical - Bothell

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URS Corporation 1501 4th Ave, Suite 1400 Seattle, WA/USA 98101-1616	Project: HGP Project Number: 33756194 Project Manager: Gail Gislason	Amended Report Issued: 12/01/03 11:21

Identified Semivolatile Petroleum Products by NWTPH-Dx (w/o Acid/Silica Gel Clean-up)

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SWMV 1-5-1 (B3J0357-01) Soil Sampled: 10/09/03 12:30 Received: 10/13/03 13:50									Q-29
Mineral Oil Range Hydrocarbons	ND	25.0	mg/kg dry	1	3K25023	11/25/03	11/27/03	NWTPH-Dx	
Surrogate: 2-FBP	80.4 %	50-150			"	"	"	"	
Surrogate: Octacosane	95.9 %	57-120			"	"	"	"	
SWMV 1-5-2 (B3J0357-02) Soil Sampled: 10/09/03 12:32 Received: 10/13/03 13:50									Q-29
Mineral Oil Range Hydrocarbons	ND	25.0	mg/kg dry	1	3K25023	11/25/03	11/27/03	NWTPH-Dx	
Surrogate: 2-FBP	73.0 %	50-150			"	"	"	"	
Surrogate: Octacosane	97.3 %	57-120			"	"	"	"	
SWMV 1-5-3 (B3J0357-03) Soil Sampled: 10/09/03 12:34 Received: 10/13/03 13:50									Q-29
Mineral Oil Range Hydrocarbons	ND	25.0	mg/kg dry	1	3K25023	11/25/03	11/27/03	NWTPH-Dx	
Surrogate: 2-FBP	77.4 %	50-150			"	"	"	"	
Surrogate: Octacosane	107 %	57-120			"	"	"	"	
SWMV 1-3-1 (B3J0357-04) Soil Sampled: 10/09/03 12:42 Received: 10/13/03 13:50									Q-29
Mineral Oil Range Hydrocarbons	ND	25.0	mg/kg dry	1	3K25023	11/25/03	11/27/03	NWTPH-Dx	
Surrogate: 2-FBP	80.0 %	50-150			"	"	"	"	
Surrogate: Octacosane	104 %	57-120			"	"	"	"	
SWMV 1-3-2 (B3J0357-05) Soil Sampled: 10/09/03 12:48 Received: 10/13/03 13:50									Q-29
Mineral Oil Range Hydrocarbons	779	250	mg/kg dry	10	3K25023	11/25/03	11/29/03	NWTPH-Dx	D-09
Surrogate: 2-FBP	177 %	50-150			"	"	"	"	S-06
Surrogate: Octacosane	911 %	57-120			"	"	"	"	S-06
SWMV 1-3-3 (B3J0357-06) Soil Sampled: 10/09/03 12:50 Received: 10/13/03 13:50									Q-29
Mineral Oil Range Hydrocarbons	71.9	25.0	mg/kg dry	1	3K25023	11/25/03	11/29/03	NWTPH-Dx	D-09
Surrogate: 2-FBP	80.0 %	50-150			"	"	"	"	
Surrogate: Octacosane	102 %	57-120			"	"	11/27/03	"	

North Creek Analytical - Bothell

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URS Corporation	Project: TKGP	
1501 4th Ave, Suite 1400	Project Number: 33756194	Amended Report
Seattle, WA/USA 98101-1616	Project Manager: Gail Gislason	Issued: 12/01/03 11:21

Identified Semivolatile Petroleum Products by NWTPH-Dx (w/o Acid/Silica Gel Clean-up)

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SWMV 1-9-3 (B3J0357-07) Soil Sampled: 10/09/03 13:18 Received: 10/13/03 13:50									Q-29
Mineral Oil Range Hydrocarbons	62.2	25.0	mg/kg dry	1	3K25023	11/25/03	11/29/03	NWTPH-Dx	D-09
Surrogate: 2-FBP	*81.0 %*	*50-150*			"	"	"	"	
Surrogate: Octacosane	*114 %*	*57-120*			"	"	*11/27/03*	"	
SWMV 1-9-1 (B3J0357-08) Soil Sampled: 10/09/03 13:08 Received: 10/13/03 13:50									Q-29
Mineral Oil Range Hydrocarbons	59.1	25.0	mg/kg dry	1	3K25023	11/25/03	11/29/03	NWTPH-Dx	D-09
Surrogate: 2-FBP	*78.1 %*	*50-150*			"	"	"	"	
Surrogate: Octacosane	*103 %*	*57-120*			"	"	*11/27/03*	"	
SWMV 1-9-2 (B3J0357-09) Soil Sampled: 10/09/03 13:12 Received: 10/13/03 13:50									Q-29
Mineral Oil Range Hydrocarbons	ND	25.0	mg/kg dry	1	3K25023	11/25/03	11/29/03	NWTPH-Dx	D-09
Surrogate: 2-FBP	*78.1 %*	*50-150*			"	"	"	"	
Surrogate: Octacosane	*102 %*	*57-120*				"	"	"	

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URS Corporation 1501 4th Ave, Suite 1400 Seattle, WA/USA 98101-1616	Project: HGP Project Number: 33756194 Project Manager: Gail Gislason	**Amended Report** Issued: 12/01/03 11:21

Total Metals by EPA 6000/7000 Series Methods

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SWMV 5-1 (B3J0357-10) Soil Sampled: 10/09/03 13:40 Received: 10/13/03 13:50									
Silver	ND	0.500	mg/kg dry	1	3J14054	10/14/03	10/16/03	EPA 6020	
Arsenic	1.91	0.500	"	"	"	"	10/15/03	"	
Barium	59.8	5.00	"	"	"	"	"	"	
Cadmium	ND	0.500	"	"	"	"	10/16/03	"	
Chromium	9.44	0.500	"	"	"	"	10/15/03	"	
Mercury	ND	0.200	"	"	3J15034	10/15/03	10/15/03	EPA 7471A	
Lead	6.99	0.500	"	"	3J14054	10/14/03	10/15/03	EPA 6020	
Selenium	ND	0.500	"	"	"	"	"	"	
SWMV 5-2 (B3J0357-11) Soil Sampled: 10/09/03 13:48 Received: 10/13/03 13:50									
Silver	ND	0.641	mg/kg dry	1	3J14054	10/14/03	10/15/03	EPA 6020	
Arsenic	1.86	0.641	"	"	"	"	"	"	
Barium	63.7	6.41	"	"	"	"	"	"	
Cadmium	ND	0.641	"	"	"	"	"	"	
Chromium	9.13	0.641	"	"	"	"	"	"	
Mercury	ND	0.200	"	"	3J15034	10/15/03	10/15/03	EPA 7471A	
Lead	7.63	0.641	"	"	3J14054	10/14/03	10/15/03	EPA 6020	
Selenium	ND	0.641	"	"	"	"	"	"	
SWMV 5-3 (B3J0357-12) Soil Sampled: 10/09/03 13:55 Received: 10/13/03 13:50									
Silver	ND	0.500	mg/kg dry	1	3J14054	10/14/03	10/15/03	EPA 6020	
Arsenic	1.99	0.500	"	"	"	"	"	"	
Barium	62.0	5.00	"	"	"	"	"	"	
Cadmium	ND	0.500	"	"	"	"	"	"	
Chromium	10.9	0.500	"	"	"	"	"	"	
Mercury	ND	0.200	"	"	3J15034	10/15/03	10/15/03	EPA 7471A	
Lead	15.3	0.500	"	"	3J14054	10/14/03	10/15/03	EPA 6020	
Selenium	ND	0.500	"	"	"	"	"	"	

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URS Corporation	Project: HGP	
1501 4th Ave, Suite 1400	Project Number: 33756194	Amended Report
Seattle, WA/USA 98101-1616	Project Manager: Gail Cristiano	Issued: 12/01/03 11:21

Total Metals by EPA 6000/7000 Series Methods

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SWMV 5-4 (B3J0357-13) Soil Sampled: 10/09/03 14:00 Received: 10/13/03 13:50									
Silver	ND	0.625	mg/kg dry	1	3J14054	10/14/03	10/15/03	EPA 6020	
Arsenic	1.72	0.625	"	"	"	"	"	"	
Barium	86.4	6.25	"	"	"	"	"	"	
Cadmium	ND	0.625	"	"	"	"	"	"	
Chromium	8.43	0.625	"	"	"	"	"	"	
Mercury	ND	0.200	"	"	3J15034	10/15/03	10/15/03	EPA 7471A	
Lead	9.88	0.625	"	"	3J14054	10/14/03	10/15/03	EPA 6020	
Selenium	ND	0.625	"	"	"	"	"	"	
SWMV 6-1 (B3J0357-14) Soil Sampled: 10/09/03 14:57 Received: 10/13/03 13:50									
Silver	ND	0.500	mg/kg dry	1	3J14054	10/14/03	10/16/03	EPA 6020	
Arsenic	0.770	0.500	"	"	"	"	10/15/03	"	
Barium	53.8	5.00	"	"	"	"	"	"	
Cadmium	ND	0.500	"	"	"	"	10/16/03	"	
Chromium	13.9	0.500	"	"	"	"	10/15/03	"	
Mercury	ND	0.200	"	"	3J15034	10/15/03	10/15/03	EPA 7471A	
Lead	4.19	0.500	"	"	3J14054	10/14/03	10/15/03	EPA 6020	
Selenium	ND	0.500	"	"	"	"	"	"	
SWMV 6-2 (B3J0357-15) Soil Sampled: 10/09/03 15:02 Received: 10/13/03 13:50									
Silver	ND	0.633	mg/kg dry	1	3J14054	10/14/03	10/16/03	EPA 6020	
Arsenic	0.909	0.633	"	"	"	"	10/15/03	"	
Barium	41.6	6.33	"	"	"	"	"	"	
Cadmium	ND	0.633	"	"	"	"	10/16/03	"	
Chromium	9.62	0.633	"	"	"	"	10/15/03	"	
Mercury	ND	0.200	"	"	3J15034	10/15/03	10/15/03	EPA 7471A	
Lead	4.26	0.633	"	"	3J14054	10/14/03	10/15/03	EPA 6020	
Selenium	ND	0.633	"	"	"	"	"	"	

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URS Corporation	Project: HGP	
1501 4th Ave, Suite 1400	Project Number: 33756194	Amended Report
Seattle, WA/USA 98101-1616	Project Manager: Gail Gislason	Issued: 12/01/03 11:21

Total Metals by EPA 6000/7000 Series Methods
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SWMV 6-3 (B3J0357-16) Soil Sampled: 10/09/03 15:05 Received: 10/13/03 13:50									
Silver	ND	0.500	mg/kg dry	1	3J14054	10/14/03	10/16/03	EPA 6020	
Arsenic	2.58	0.500	"	"	"	"	"	"	
Barium	72.4	5.00	"	"	"	"	"	"	
Cadmium	ND	0.500	"	"	"	"	"	"	
Chromium	9.59	0.500	"	"	"	"	"	"	
Mercury	ND	0.200	"	"	3J15034	10/15/03	10/15/03	EPA 7471A	
Lead	6.71	0.500	"	"	3J14054	10/14/03	10/16/03	EPA 6020	
Selenium	0.736	0.500	"	"	"	"	"	"	
SWMV 6-4 (B3J0357-17) Soil Sampled: 10/09/03 15:10 Received: 10/13/03 13:50									
Silver	ND	0.500	mg/kg dry	1	3J14054	10/14/03	10/15/03	EPA 6020	
Arsenic	1.75	0.500	"	"	"	"	"	"	
Barium	59.6	5.00	"	"	"	"	"	"	
Cadmium	ND	0.500	"	"	"	"	"	"	
Chromium	9.08	0.500	"	"	"	"	"	"	
Mercury	ND	0.200	"	"	3J15034	10/15/03	10/15/03	EPA 7471A	
Lead	6.22	0.500	"	"	3J14054	10/14/03	10/15/03	EPA 6020	
Selenium	0.531	0.500	"	"	"	"	"	"	
SWMV 6-5 (B3J0357-18) Soil Sampled: 10/09/03 15:17 Received: 10/13/03 13:50									
Silver	ND	0.649	mg/kg dry	1	3J14054	10/14/03	10/16/03	EPA 6020	
Arsenic	2.36	0.649	"	"	"	"	10/15/03	"	
Barium	90.2	6.49	"	"	"	"	"	"	
Cadmium	ND	0.649	"	"	"	"	10/16/03	"	
Chromium	13.3	0.649	"	"	"	"	10/15/03	"	
Mercury	ND	0.200	"	"	3J15034	10/15/03	10/15/03	EPA 7471A	
Lead	8.47	0.649	"	"	3J14054	10/14/03	10/15/03	EPA 6020	
Selenium	ND	0.649	"	"	"	"	"	"	

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URS Corporation	Project: IOGP	
1501 4th Ave, Suite 1400	Project Number: 33756194	Amended Report
Seattle, WA/USA 98101-1616	Project Manager: Gail Gislason	Issued: 12/01/03 11:21

Total Metals by EPA 6000/7000 Series Methods

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SWMV 6-6 (B3J0357-19) Soil Sampled: 10/09/03 15:20 Received: 10/13/03 13:50									
Silver	ND	0.704	mg/kg dry	1	3J14054	10/14/03	10/15/03	EPA 6020	
Arsenic	2.52	0.704	"	"	"	"	"	"	
Barium	78.9	7.04	"	"	"	"	"	"	
Cadmium	ND	0.704	"	"	"	"	"	"	
Chromium	16.0	0.704	"	"	"	"	"	"	
Mercury	ND	0.200	"	"	3J16014	10/16/03	10/16/03	EPA 7471A	
Lead	14.8	0.704	"	"	3J14054	10/14/03	10/15/03	EPA 6020	
Selenium	ND	0.704	"	"	"	"	"	"	
SWMV 6-7 (B3J0357-20) Soil Sampled: 10/09/03 15:25 Received: 10/13/03 13:50									
Silver	ND	0.746	mg/kg dry	1	3J14054	10/14/03	10/15/03	EPA 6020	
Arsenic	3.24	0.746	"	"	"	"	"	"	
Barium	122	7.46	"	"	"	"	"	"	
Cadmium	ND	0.746	"	"	"	"	"	"	
Chromium	18.5	0.746	"	"	"	"	"	"	
Mercury	ND	0.200	"	"	3J16014	10/16/03	10/16/03	EPA 7471A	
Lead	29.9	0.746	"	"	3J14054	10/14/03	10/15/03	EPA 6020	
Selenium	0.798	0.746	"	"	"	"	"	"	
SWMV 6-8 (B3J0357-21) Soil Sampled: 10/09/03 15:30 Received: 10/13/03 13:50									
Silver	ND	0.667	mg/kg dry	1	3J14054	10/14/03	10/15/03	EPA 6020	
Arsenic	2.04	0.667	"	"	"	"	"	"	
Barium	79.8	6.67	"	"	"	"	"	"	
Cadmium	ND	0.667	"	"	"	"	"	"	
Chromium	12.3	0.667	"	"	"	"	"	"	
Mercury	ND	0.200	"	"	3J16014	10/16/03	10/16/03	EPA 7471A	
Lead	10.2	0.667	"	"	3J14054	10/14/03	10/15/03	EPA 6020	
Selenium	ND	0.667	"	"	"	"	"	"	

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URS Corporation	Project: IHGP	
1501 4th Ave, Suite 1400	Project Number: 33756194	**Amended Report**
Seattle, WA/USA 98101-1616	Project Manager: Gail Gielanoo	Issued: 12/01/03 11:21

Total Metals by EPA 6000/7000 Series Methods

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SWMV 5-5 (B3J0357-22) Soil Sampled: 10/09/03 16:20 Received: 10/13/03 13:50									
Silver	ND	0.667	mg/kg dry	1	3J14054	10/14/03	10/15/03	EPA 6020	
Arsenic	1.83	0.667	"	"	"	"	"	"	
Barium	60.5	6.67	"	"	"	"	"	"	
Cadmium	ND	0.667	"	"	"	"	"	"	
Chromium	9.97	0.667	"	"	"	"	"	"	
Mercury	ND	0.200	"	"	3J15014	10/16/03	10/16/03	EPA 7471A	
Lead	11.1	0.667	"	"	3J14054	10/14/03	10/15/03	EPA 6020	
Selenium	ND	0.667	"	"	"	"	"	"	
SWMV 5-6 (B3J0357-23) Soil Sampled: 10/09/03 16:25 Received: 10/13/03 13:50									
Silver	ND	0.500	mg/kg dry	1	3J15023	10/15/03	10/16/03	EPA 6020	
Arsenic	1.04	0.500	"	"	"	"	10/17/03	"	
Barium	66.8	5.00	"	"	"	"	10/16/03	"	
Cadmium	ND	0.500	"	"	"	"	"	"	
Chromium	9.62	0.500	"	"	"	"	"	"	
Mercury	ND	0.200	"	"	3J16014	10/16/03	10/16/03	EPA 7471A	
Lead	6.77	0.500	"	"	3J15023	10/15/03	10/17/03	EPA 6020	
Selenium	ND	0.500	"	"	"	"	10/16/03	"	
SWMV 5-7 (B3J0357-24) Soil Sampled: 10/09/03 16:30 Received: 10/13/03 13:50									
Silver	ND	0.500	mg/kg dry	1	3J15023	10/15/03	10/16/03	EPA 6020	
Arsenic	1.87	0.500	"	"	"	"	10/17/03	"	
Barium	65.6	5.00	"	"	"	"	10/16/03	"	
Cadmium	ND	0.500	"	"	"	"	"	"	
Chromium	10.9	0.500	"	"	"	"	"	"	
Mercury	ND	0.200	"	"	3J16014	10/16/03	10/16/03	EPA 7471A	
Lead	4.47	0.500	"	"	3J15023	10/15/03	10/17/03	EPA 6020	
Selenium	ND	0.500	"	"	"	"	10/16/03	"	

North Creek Analytical - Bothell

Jeff Gerdes

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URS Corporation 1501 4th Ave, Suite 1400 Seattle, WA/USA 98101-1616	Project: HGP Project Number: 33756194 Project Manager: Gail Gislason	Amended Report Issued: 12/01/03 13:21

Total Metals by EPA 6000/7000 Series Methods

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SWMV 5-8 (B3J0357-25) Soil Sampled: 10/09/03 16:35 Received: 10/13/03 13:50									
Silver	ND	0.500	mg/kg dry	1	3J15023	10/15/03	10/16/03	EPA 6020	
Arsenic	2.33	0.500	"	"	"	"	10/17/03	"	
Barium	76.5	5.00	"	"	"	"	10/16/03	"	
Cadmium	ND	0.500	"	"	"	"	"	"	
Chromium	11.2	0.500	"	"	"	"	"	"	
Mercury	ND	0.200	"	"	3J16014	10/16/03	10/16/03	EPA 7471A	
Lead	7.59	0.500	"	"	3J15023	10/15/03	10/17/03	EPA 6020	
Selenium	ND	0.500	"	"	"	"	10/16/03	"	
SWMV 10-1 (B3J0357-26) Soil Sampled: 10/09/03 16:47 Received: 10/13/03 13:50									
Silver	ND	0.500	mg/kg dry	1	3J15023	10/15/03	10/16/03	EPA 6020	
Arsenic	2.22	0.500	"	"	"	"	10/17/03	"	
Barium	69.4	5.00	"	"	"	"	10/16/03	"	
Cadmium	ND	0.500	"	"	"	"	"	"	
Chromium	11.2	0.500	"	"	"	"	"	"	
Mercury	ND	0.200	"	"	3J16014	10/16/03	10/16/03	EPA 7471A	
Lead	11.8	0.500	"	"	3J15023	10/15/03	10/17/03	EPA 6020	
Selenium	ND	0.500	"	"	"	"	10/16/03	"	
SWMV 10-2 (B3J0357-27) Soil Sampled: 10/09/03 16:50 Received: 10/13/03 13:50									
Silver	ND	0.556	mg/kg dry	1	3J15023	10/15/03	10/16/03	EPA 6020	
Arsenic	1.82	0.556	"	"	"	"	10/17/03	"	
Barium	65.2	5.56	"	"	"	"	10/16/03	"	
Cadmium	ND	0.556	"	"	"	"	"	"	
Chromium	9.58	0.556	"	"	"	"	"	"	
Mercury	ND	0.200	"	"	3J16014	10/16/03	10/16/03	EPA 7471A	
Lead	23.3	0.556	"	"	3J15023	10/15/03	10/17/03	EPA 6020	
Selenium	ND	0.556	"	"	"	"	10/16/03	"	

North Creek Analytical - Bothell

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URS Corporation	Project: HGP	
1501 4th Ave, Suite 1400	Project Number: 33756194	Amended Report
Seattle, WA/USA 98101-1616	Project Manager: Gail Gisleson	Issued: 12/01/03 11:21

Total Metals by EPA 6000/7000 Series Methods

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SW3MV 10-3 (B3J0357-28) Soil Sampled: 10/09/03 16:55 Received: 10/13/03 13:50									
Silver	ND	0.500	mg/kg dry	1	3J15023	10/15/03	10/16/03	EPA 6020	
Arsenic	1.78	0.500	"	"	"	"	10/17/03	"	
Barium	67.5	5.00	"	"	"	"	10/16/03	"	
Cadmium	ND	0.500	"	"	"	"	"	"	
Chromium	9.72	0.500	"	"	"	"	"	"	
Mercury	ND	0.200	"	"	3J16014	10/16/03	10/16/03	EPA 7471A	
Lead	9.24	0.500	"	"	3J15023	10/15/03	10/17/03	EPA 6020	
Selenium	ND	0.500	"	"	"	"	10/16/03	"	
SW3MV 10-4 (B3J0357-29) Soil Sampled: 10/09/03 17:00 Received: 10/13/03 13:50									
Silver	ND	0.500	mg/kg dry	1	3J15023	10/15/03	10/16/03	EPA 6020	
Arsenic	1.77	0.500	"	"	"	"	10/17/03	"	
Barium	70.6	5.00	"	"	"	"	10/16/03	"	
Cadmium	ND	0.500	"	"	"	"	"	"	
Chromium	10.3	0.500	"	"	"	"	"	"	
Mercury	ND	0.200	"	"	3J16014	10/16/03	10/16/03	EPA 7471A	
Lead	14.1	0.500	"	"	3J15023	10/15/03	10/17/03	EPA 6020	
Selenium	ND	0.500	"	"	"	"	10/16/03	"	
SW3MV 10-5 (B3J0357-30) Soil Sampled: 10/09/03 17:03 Received: 10/13/03 13:50									
Silver	ND	0.500	mg/kg dry	1	3J15023	10/15/03	10/16/03	EPA 6020	
Arsenic	1.70	0.500	"	"	"	"	10/17/03	"	
Barium	93.5	5.00	"	"	"	"	10/16/03	"	
Cadmium	ND	0.500	"	"	"	"	"	"	
Chromium	9.32	0.500	"	"	"	"	"	"	
Mercury	ND	0.200	"	"	3J16014	10/16/03	10/16/03	EPA 7471A	
Lead	13.8	0.500	"	"	3J15023	10/15/03	10/17/03	EPA 6020	
Selenium	ND	0.500	"	"	"	"	10/16/03	"	

North Creek Analytical - Bothell

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URS Corporation	Project: HGP	
1501 4th Ave, Suite 1400	Project Number: 33756194	**Amended Report**
Seattle, WA/USA 98101-1616	Project Manager: Gail Gislason	Issued: 12/01/03 11:21

Total Metals by EPA 6000/7000 Series Methods
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SWMV 10-6 (B3J0357-31) Soil Sampled: 10/09/03 17:06 Received: 10/13/03 13:50									
Silver	ND	0.500	mg/kg dry	1	3J15023	10/15/03	10/16/03	EPA 6020	
Arsenic	2.37	0.500	"	"	"	"	10/17/03	"	
Barium	100	5.00	"	"	"	"	10/16/03	"	
Cadmium	ND	0.500	"	"	"	"	"	"	
Chromium	12.3	0.500	"	"	"	"	"	"	
Mercury	ND	0.200	"	"	3J16014	10/16/03	10/16/03	EPA 7471A	
Lead	9.84	0.500	"	"	3J15023	10/15/03	10/17/03	EPA 6020	
Selenium	ND	0.500	"	"	"	"	10/16/03	"	
SWMV 10-7 (B3J0357-32) Soil Sampled: 10/09/03 17:10 Received: 10/13/03 13:50									
Silver	1.69	0.500	mg/kg dry	1	3J15023	10/15/03	10/16/03	EPA 6020	
Arsenic	2.98	0.500	"	"	"	"	10/17/03	"	
Barium	349	50.0	"	10	"	"	10/17/03	"	
Cadmium	1.46	0.500	"	1	"	"	10/16/03	"	
Chromium	32.8	0.500	"	"	"	"	"	"	
Mercury	ND	0.200	"	"	3J16014	10/16/03	10/16/03	EPA 7471A	
Lead	669	5.00	"	10	3J15023	10/15/03	10/17/03	EPA 6020	
Selenium	ND	0.500	"	1	"	"	10/16/03	"	
SWMV 10-8 (B3J0357-33) Soil Sampled: 10/09/03 17:13 Received: 10/13/03 13:50									
Silver	ND	0.500	mg/kg dry	1	3J15023	10/15/03	10/16/03	EPA 6020	
Arsenic	2.40	0.500	"	"	"	"	10/17/03	"	
Barium	280	5.00	"	"	"	"	10/16/03	"	
Cadmium	0.860	0.500	"	"	"	"	"	"	
Chromium	12.0	0.500	"	"	"	"	"	"	
Mercury	ND	0.200	"	"	3J16014	10/16/03	10/16/03	EPA 7471A	
Lead	606	5.00	"	10	3J15023	10/15/03	10/17/03	EPA 6020	
Selenium	0.584	0.500	"	1	"	"	10/16/03	"	

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URS Corporation	Project: HGP	
1501 4th Ave, Suite 1400	Project Number: 33756194	**Amended Report**
Seattle, WA/USA 98101-1616	Project Manager: Gail Gisleson	Reported: 12/01/03 11:21

Total Metals by EPA 6000/7000 Series Methods

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SWMV 18-9 (B3J0357-34) Soil Sampled: 10/08/03 17:16 Received: 10/13/03 13:50									
Silver	0.609	0.500	mg/kg dry	1	3J15023	10/15/03	10/16/03	EPA 6020	
Arsenic	2.29	0.500	"	"	"	"	10/17/03	"	
Barium	175	3.00	"	"	"	"	10/16/03	"	
Cadmium	0.522	0.500	"	"	"	"	"	"	
Chromium	21.2	0.500	"	"	"	"	"	"	
Mercury	ND	0.200	"	"	3J16014	10/16/03	10/16/03	EPA 7471A	
Lead	222	1.00	"	2	3J15023	10/15/03	10/17/03	EPA 6020	
Selenium	ND	0.500	"	1	"	"	10/16/03	"	

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CRS Corporation 1501 4th Ave, Suite 1400 Seattle, WA/USA 98101-1616	Project: HGP Project Number: 33756194 Project Manager: Gail Gislason	Amended Report Issued: 12/01/03 11:21

Polychlorinated Biphenyls by EPA Method 8082

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SWMV 1-S-1 (B330357-01) Soil Sampled: 10/09/03 12:38 Received: 10/13/03 13:50									
Aroclor 1016	ND	25.0	ug/kg dry	1	3016055	10/16/03	10/21/03	EPA 8082	
Aroclor 1221	ND	50.0	"	"	"	"	"	"	
Aroclor 1232	ND	25.0	"	"	"	"	"	"	
Aroclor 1242	ND	25.0	"	"	"	"	"	"	
Aroclor 1248	ND	25.0	"	"	"	"	"	"	
Aroclor 1254	ND	25.0	"	"	"	"	"	"	
Aroclor 1260	ND	25.0	"	"	"	"	"	"	
Aroclor 1262	ND	25.0	"	"	"	"	"	"	
Aroclor 1268	ND	25.0	"	"	"	"	"	"	
Surrogate: TCX	*96.3 %*	*49-124*			"	"	"	"	
Surrogate: Decachlorobiphenyl	*98.0 %*	*48-150*			"	"	"	"	
SWMV 1-S-2 (B330357-02) Soil Sampled: 10/09/03 12:32 Received: 10/13/03 13:50									
Aroclor 1016	ND	25.0	ug/kg dry	1	3016055	10/16/03	10/22/03	EPA 8082	
Aroclor 1221	ND	50.0	"	"	"	"	"	"	
Aroclor 1232	ND	25.0	"	"	"	"	"	"	
Aroclor 1242	ND	25.0	"	"	"	"	"	"	
Aroclor 1248	ND	25.0	"	"	"	"	"	"	
Aroclor 1254	ND	25.0	"	"	"	"	"	"	
Aroclor 1260	ND	25.0	"	"	"	"	"	"	
Aroclor 1262	ND	25.0	"	"	"	"	"	"	
Aroclor 1268	ND	25.0	"	"	"	"	"	"	
Surrogate: TCX	*92.2 %*	*49-124*			"	"	"	"	
Surrogate: Decachlorobiphenyl	*89.9 %*	*48-150*			"	"	"	"	

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URS Corporation 1501 4th Ave, Suite 1400 Seattle, WA/USA 98101-1616	Project: HGP Project Number: 33756194 Project Manager: Gail Gislason	Amended Report Issued: 12/01/03 11:21

Polychlorinated Biphenyls by EPA Method 8082

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SWMV 1-5-J (B3J0357-03) Soil Sampled: 10/09/03 12:34 Received: 10/13/03 13:50									
Aroclor 1016	ND	25.0	ug/kg dry	1	3J16055	10/16/03	10/22/03	EPA 8082	
Aroclor 1221	ND	50.0	"	"	"	"	"	"	
Aroclor 1232	ND	25.0	"	"	"	"	"	"	
Aroclor 1242	ND	25.0	"	"	"	"	"	"	
Aroclor 1248	ND	25.0	"	"	"	"	"	"	
Aroclor 1254	ND	25.0	"	"	"	"	"	"	
Aroclor 1260	ND	25.0	"	"	"	"	"	"	
Aroclor 1262	ND	25.0	"	"	"	"	"	"	
Aroclor 1268	ND	25.0	"	"	"	"	"	"	
Surrogate: TCX	*89.0 %*	*49-124*			"	"	"	"	
Surrogate: Decachlorobiphenyl	*90.9 %*	*48-150*			"	"	"	"	
SWMV 1-3-J (B3J0357-04) Soil Sampled: 10/09/03 12:42 Received: 10/13/03 13:50									
Aroclor 1016	ND	25.0	ug/kg dry	1	3J16055	10/16/03	10/23/03	EPA 8082	
Aroclor 1221	ND	50.0	"	"	"	"	"	"	
Aroclor 1232	ND	25.0	"	"	"	"	"	"	
Aroclor 1242	ND	25.0	"	"	"	"	"	"	
Aroclor 1248	ND	25.0	"	"	"	"	"	"	
Aroclor 1254	ND	25.0	"	"	"	"	"	"	
Aroclor 1260	ND	25.0	"	"	"	"	"	"	
Aroclor 1262	ND	25.0	"	"	"	"	"	"	
Aroclor 1268	ND	25.0	"	"	"	"	"	"	
Surrogate: TCX	*91.7 %*	*49-124*			"	"	"	"	
Surrogate: Decachlorobiphenyl	*96.7 %*	*48-150*			"	"	"	"	

North Creek Analytical - Bothell

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URS Corporation 1501 4th Ave, Suite 1400 Seattle, WA/USA 98101-1616	Project: HGP Project Number: 33756194 Project Manager: Gail Ginlason	**Amended Report** Issued: 12/01/03 11:21

Polychlorinated Biphenyls by EPA Method 8082

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SWMV 1-3-2 (R3J0357-05) Soil Sampled: 10/09/03 12:48 Received: 10/13/03 13:50									
Aroclor 1016	ND	25.0	ug/kg dry	1	3116055	10/16/03	10/21/03	EPA 8082	
Aroclor 1221	ND	50.0	"	"	"	"	"	"	
Aroclor 1232	ND	25.0	"	"	"	"	"	"	
Aroclor 1242	ND	25.0	"	"	"	"	"	"	
Aroclor 1248	ND	25.0	"	"	"	"	"	"	
Aroclor 1254	ND	25.0	"	"	"	"	"	"	
Aroclor 1260	ND	25.0	"	"	"	"	"	"	
Aroclor 1262	ND	25.0	"	"	"	"	"	"	
Aroclor 1268	ND	25.0	"	"	"	"	"	"	
Surrogate: TCX	*85.5 %*	*49-124*			"	"	"	"	
Surrogate: Decachlorobiphenyl	*88.4 %*	*48-150*			"	"	"	"	
SWMV 1-3-3 (R3J0357-06) Soil Sampled: 10/09/03 12:50 Received: 10/13/03 13:50									
Aroclor 1016	ND	25.0	ug/kg dry	1	3116055	10/16/03	10/21/03	EPA 8082	
Aroclor 1221	ND	50.0	"	"	"	"	"	"	
Aroclor 1232	ND	25.0	"	"	"	"	"	"	
Aroclor 1242	ND	25.0	"	"	"	"	"	"	
Aroclor 1248	ND	25.0	"	"	"	"	"	"	
Aroclor 1254	ND	25.0	"	"	"	"	"	"	
Aroclor 1260	ND	25.0	"	"	"	"	"	"	
Aroclor 1262	ND	25.0	"	"	"	"	"	"	
Aroclor 1268	ND	25.0	"	"	"	"	"	"	
Surrogate: TCX	*91.1 %*	*49-124*			"	"	"	"	
Surrogate: Decachlorobiphenyl	*91.9 %*	*48-150*			"	"	"	"	

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Polychlorinated Biphenyls by EPA Method 8082

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SWMV 1-9-3 (B3J0357-07) Soil Sampled: 10/09/03 13:18 Received: 10/13/03 13:50									
Aroclor 1016	ND	25.0	ug/kg dry	1	3J16055	10/16/03	10/21/03	EPA 8082	
Aroclor 1221	ND	50.0	"	"	"	"	"	"	
Aroclor 1232	ND	25.0	"	"	"	"	"	"	
Aroclor 1242	ND	25.0	"	"	"	"	"	"	
Aroclor 1248	ND	25.0	"	"	"	"	"	"	
Aroclor 1254	ND	25.0	"	"	"	"	"	"	
Aroclor 1260	ND	25.0	"	"	"	"	"	"	
Aroclor 1262	ND	25.0	"	"	"	"	"	"	
Aroclor 1268	ND	25.0	"	"	"	"	"	"	
Surrogate: TCX	*90.7 %*	*49-124*			"	"	"	"	
Surrogate: Decachlorobiphenyl	*92.3 %*	*48-150*			"	"	"	"	
SWMV 1-9-1 (B3J0357-08) Soil Sampled: 10/09/03 13:08 Received: 10/13/03 13:50									
Aroclor 1016	ND	25.0	ug/kg dry	1	3J16055	10/16/03	10/21/03	EPA 8082	
Aroclor 1221	ND	50.0	"	"	"	"	"	"	
Aroclor 1232	ND	25.0	"	"	"	"	"	"	
Aroclor 1242	ND	25.0	"	"	"	"	"	"	
Aroclor 1248	ND	25.0	"	"	"	"	"	"	
Aroclor 1254	ND	25.0	"	"	"	"	"	"	
Aroclor 1260	ND	25.0	"	"	"	"	"	"	
Aroclor 1262	ND	25.0	"	"	"	"	"	"	
Aroclor 1268	ND	25.0	"	"	"	"	"	"	
Surrogate: TCX	*89.7 %*	*49-124*			"	"	"	"	
Surrogate: Decachlorobiphenyl	*133 %*	*48-150*			"	"	"	"	

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URS Corporation 1501 4th Ave, Suite 1400 Seattle, WA/USA 98101-1616	Project: HGF Project Number: 33756194 Project Manager: Gail Gislason	Amended Report Issued: 12/01/03 11:21

Polychlorinated Biphenyls by EPA Method 8082

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SWMV 1-9-2 (B3J0357-09) Soil Sampled: 10/09/03 13:12 Received: 10/13/03 13:50									
Aroclor 1016	ND	25.0	ug/kg dry	1	3J16055	10/16/03	10/21/03	EPA 8082	
Aroclor 1221	ND	50.0	"	"	"	"	"	"	
Aroclor 1232	ND	25.0	"	"	"	"	"	"	
Aroclor 1242	ND	25.0	"	"	"	"	"	"	
Aroclor 1248	ND	25.0	"	"	"	"	"	"	
Aroclor 1254	ND	25.0	"	"	"	"	"	"	
Aroclor 1260	ND	25.0	"	"	"	"	"	"	
Aroclor 1262	25.6	25.0	"	"	"	"	"	"	
Aroclor 1268	ND	25.0	"	"	"	"	"	"	
Surrogate: TCX	*71.0 %*	*49-124*			"	"	"	"	
Surrogate: Decachlorobiphenyl	*137 %*	*48-150*			"	"	"	"	

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URS Corporation 1501 4th Ave, Suite 1400 Seattle, WA/USA 98101-1616	Project: HGP Project Number: 33756194 Project Manager: Gail Gislason	Amended Report Issued: 12/01/03 11:21

Physical Parameters by APHA/ASTM/EPA Methods
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SWMV 1-5-1 (B3J0357-01) Soil Sampled: 10/09/03 12:30 Received: 10/13/03 13:50									
Dry Weight	95.8	1.00	%	1	3J18010	10/18/03	10/20/03	BSOPSPL003R08	
SWMV 1-5-2 (B3J0357-02) Soil Sampled: 10/09/03 12:32 Received: 10/13/03 13:50									
Dry Weight	94.4	1.00	%	1	3J18010	10/18/03	10/20/03	BSOPSPL003R08	
SWMV 1-5-3 (B3J0357-03) Soil Sampled: 10/09/03 12:34 Received: 10/13/03 13:50									
Dry Weight	99.0	1.00	%	1	3J18010	10/18/03	10/20/03	BSOPSPL003R08	
SWMV 1-3-1 (B3J0357-04) Soil Sampled: 10/09/03 12:42 Received: 10/13/03 13:50									
Dry Weight	97.6	1.00	%	1	3J18010	10/18/03	10/20/03	BSOPSPL003R08	
SWMV 1-3-2 (B3J0357-05) Soil Sampled: 10/09/03 12:48 Received: 10/13/03 13:50									
Dry Weight	97.8	1.00	%	1	3J18010	10/18/03	10/20/03	BSOPSPL003R08	
SWMV 1-3-3 (B3J0357-06) Soil Sampled: 10/09/03 12:50 Received: 10/13/03 13:50									
Dry Weight	96.6	1.00	%	1	3J18010	10/18/03	10/20/03	BSOPSPL003R08	
SWMV 1-9-3 (B3J0357-07) Soil Sampled: 10/09/03 13:18 Received: 10/13/03 13:50									
Dry Weight	96.6	1.00	%	1	3J18010	10/18/03	10/20/03	BSOPSPL003R08	
SWMV 1-9-1 (B3J0357-08) Soil Sampled: 10/09/03 13:08 Received: 10/13/03 13:50									
Dry Weight	91.5	1.00	%	1	3J18010	10/18/03	10/20/03	BSOPSPL003R08	
SWMV 1-9-2 (B3J0357-09) Soil Sampled: 10/09/03 13:12 Received: 10/13/03 13:50									
Dry Weight	94.9	1.00	%	1	3J18010	10/18/03	10/20/03	BSOPSPL003R08	

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URS Corporation
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Project: HGP
Project Number: 33756194
Project Manager: Gail Cislmon

Amended Report
Issued: 12/01/03 11:21

Physical Parameters by APHA/ASTM/EPA Methods

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Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SWMV 5-1 (B3J0357-10) Soil Sampled: 10/09/03 13:40 Received: 10/13/03 13:50									
Dry Weight	95.8	1.00	%	1	3016011	10/16/03	10/17/03	BSOPSPL003R04	
SWMV 5-2 (B3J0357-11) Soil Sampled: 10/09/03 13:48 Received: 10/13/03 13:50									
Dry Weight	95.4	1.00	%	1	3016011	10/16/03	10/17/03	BSOPSPL003R04	
SWMV 5-3 (B3J0357-12) Soil Sampled: 10/09/03 13:55 Received: 10/13/03 13:50									
Dry Weight	95.4	1.00	%	1	3016011	10/16/03	10/17/03	BSOPSPL003R04	
SWMV 5-4 (B3J0357-13) Soil Sampled: 10/09/03 14:00 Received: 10/13/03 13:50									
Dry Weight	99.0	1.00	%	1	3016011	10/16/03	10/17/03	BSOPSPL003R04	
SWMV 6-1 (B3J0357-14) Soil Sampled: 10/09/03 14:57 Received: 10/13/03 13:50									
Dry Weight	96.7	1.00	%	1	3016011	10/16/03	10/17/03	BSOPSPL003R04	
SWMV 6-2 (B3J0357-15) Soil Sampled: 10/09/03 15:02 Received: 10/13/03 13:50									
Dry Weight	98.8	1.00	%	1	3016011	10/16/03	10/17/03	BSOPSPL003R04	
SWMV 6-3 (B3J0357-16) Soil Sampled: 10/09/03 15:05 Received: 10/13/03 13:50									
Dry Weight	98.6	1.00	%	1	3016011	10/16/03	10/17/03	BSOPSPL003R04	
SWMV 6-4 (B3J0357-17) Soil Sampled: 10/09/03 15:10 Received: 10/13/03 13:50									
Dry Weight	98.9	1.00	%	1	3016011	10/16/03	10/17/03	BSOPSPL003R04	
SWMV 6-5 (B3J0357-18) Soil Sampled: 10/09/03 15:17 Received: 10/13/03 13:50									
Dry Weight	99.4	1.00	%	1	3016011	10/16/03	10/17/03	BSOPSPL003R04	

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URS Corporation 1501 4th Ave, Suite 1400 Seattle, WA/USA 98101-1616	Project: EIGP Project Number: 33756194 Project Manager: Gail Gislason	Amended Report Issued: 12/01/03 11:21

Physical Parameters by APHA/ASTM/EPA Methods
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SWMV 6-6 (B3J0357-19) Soil Sampled: 10/09/03 15:20 Received: 10/13/03 13:50									
Dry Weight	98.9	1.00	%	1	3116011	10/16/03	10/17/03	BSOPSPL003R08	
SWMV 6-7 (B3J0357-20) Soil Sampled: 10/09/03 15:25 Received: 10/13/03 13:50									
Dry Weight	98.3	1.00	%	1	3116011	10/16/03	10/17/03	BSOPSPL003R08	
SWMV 6-8 (B3J0357-21) Soil Sampled: 10/09/03 15:30 Received: 10/13/03 13:50									
Dry Weight	99.4	1.00	%	1	3116011	10/16/03	10/17/03	BSOPSPL003R08	
SWMV 5-5 (B3J0357-22) Soil Sampled: 10/09/03 16:20 Received: 10/13/03 13:50									
Dry Weight	98.9	1.00	%	1	3116011	10/16/03	10/17/03	BSOPSPL003R08	
SWMV 5-6 (B3J0357-23) Soil Sampled: 10/09/03 16:25 Received: 10/13/03 13:50									
Dry Weight	99.3	1.00	%	1	3116011	10/16/03	10/17/03	BSOPSPL003R08	
SWMV 5-7 (B3J0357-24) Soil Sampled: 10/09/03 16:30 Received: 10/13/03 13:50									
Dry Weight	99.6	1.00	%	1	3116011	10/16/03	10/17/03	BSOPSPL003R08	
SWMV 5-8 (B3J0357-25) Soil Sampled: 10/09/03 16:35 Received: 10/13/03 13:50									
Dry Weight	99.4	1.00	%	1	3116011	10/16/03	10/17/03	BSOPSPL003R08	
SWMV 10-1 (B3J0357-26) Soil Sampled: 10/09/03 16:47 Received: 10/13/03 13:50									
Dry Weight	99.2	1.00	%	1	3116011	10/16/03	10/17/03	BSOPSPL003R08	
SWMV 10-2 (B3J0357-27) Soil Sampled: 10/09/03 16:50 Received: 10/13/03 13:50									
Dry Weight	99.5	1.00	%	1	3116011	10/16/03	10/17/03	BSOPSPL003R08	

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Project: ITGP
Project Number: 33756194
Project Manager: Gail Gislason

Amended Report
Issued: 12/01/03 11:21

Physical Parameters by APHA/ASTM/EPA Methods
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SWMV 10-3 (B3J0357-28) Soil Sampled: 10/09/03 16:55 Received: 10/13/03 13:50									
Dry Weight	98.9	1.00	%	1	3J16011	10/16/03	10/17/03	BSOPSPL003R08	
SWMV 10-4 (B3J0357-29) Soil Sampled: 10/09/03 17:00 Received: 10/13/03 13:50									
Dry Weight	99.2	1.00	%	1	3J16011	10/16/03	10/17/03	BSOPSPL003R08	
SWMV 10-5 (B3J0357-30) Soil Sampled: 10/09/03 17:03 Received: 10/13/03 13:50									
Dry Weight	96.8	1.00	%	1	3J16013	10/16/03	10/17/03	BSOPSPL003R08	
SWMV 10-6 (B3J0357-31) Soil Sampled: 10/09/03 17:06 Received: 10/13/03 13:50									
Dry Weight	99.4	1.00	%	1	3J16013	10/16/03	10/17/03	BSOPSPL003R08	
SWMV 10-7 (B3J0357-32) Soil Sampled: 10/09/03 17:10 Received: 10/13/03 13:50									
Dry Weight	98.4	1.00	%	1	3J16013	10/16/03	10/17/03	BSOPSPL003R08	
SWMV 10-8 (B3J0357-33) Soil Sampled: 10/09/03 17:13 Received: 10/13/03 13:50									
Dry Weight	99.3	1.00	%	1	3J16013	10/16/03	10/17/03	BSOPSPL003R08	
SWMV 10-9 (B3J0357-34) Soil Sampled: 10/09/03 17:16 Received: 10/13/03 13:50									
Dry Weight	98.8	1.00	%	1	3J16013	10/16/03	10/17/03	BSOPSPL003R08	

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URS Corporation 1501 4th Ave, Suite 1400 Seattle, WA/USA 98101-1616	Project: IHGP Project Number: 33756194 Project Manager: Gail Gislason	Amended Report Issued: 12/01/03 11:21

Semivolatile Petroleum Products by NWTPH-Dx (w/o Acid/Silica Gel Clean-up) - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3J16027: Prepared 10/16/03 Using EPA 3550B										
Blank (3J16027-BLK1)										
Diesel Range Hydrocarbons	ND	10.0	mg/kg							
Lube Oil Range Hydrocarbons	ND	25.0	"							
Surrogate: 2-FBP	9.47		"	*10.7*		*88.5*	*50-150*			
Surrogate: Octacosane	5.09		"	*5.33*		*95.5*	*57-120*			
LCS (3J16027-BS1)										
Diesel Range Hydrocarbons	60.9	10.0	mg/kg	66.7		91.3	70-130			
Surrogate: 2-FBP	10.8		"	*10.7*		*101*	*50-150*			
LCS Dup (3J16027-BSD1)										
Diesel Range Hydrocarbons	61.6	10.0	mg/kg	66.7		92.4	70-130	1.14	40	
Surrogate: 2-FBP	10.9		"	*10.7*		*102*	*50-150*			
Duplicate (3J16027-DUP1)					Source: B3J0357-10					
Diesel Range Hydrocarbons	ND	10.0	mg/kg dry		4.47			25.2	40	
Lube Oil Range Hydrocarbons	ND	25.0	"		ND			NA	40	
Surrogate: 2-FBP	10.2		"	*11.1*		*91.9*	*50-150*			
Surrogate: Octacosane	6.07		"	*5.32*		*114*	*57-120*			
Batch 3J16028: Prepared 10/16/03 Using EPA 3550B										
Blank (3J16028-BLK1)										
Diesel Range Hydrocarbons	ND	10.0	mg/kg							
Lube Oil Range Hydrocarbons	ND	25.0	"							
Surrogate: 2-FBP	9.69		"	*10.7*		*90.6*	*50-150*			
Surrogate: Octacosane	5.49		"	*5.33*		*103*	*57-120*			

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URS Corporation 1501 4th Ave, Suite 1400 Seattle, WA/USA 98101-1616	Project: HCP Project Number: 37756194 Project Manager: Gail Gislason	Amended Report Issued: 12/01/03 11:21

Semivolatile Petroleum Products by NWTPH-Dx (w/o Acid/Silica Gel Clean-up) - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3J16025: Prepared 10/16/03 Using EPA 3550B										
LCS (3J16025-BS1)										
Diesel Range Hydrocarbons	57.3	10.0	mg/kg	66.7		85.9	70-130			
Surrogate: 2-FBP	*9.64*		"	*10.7*		*90.1*	*50-150*			
LCS Dup (3J16025-BSD1)										
Diesel Range Hydrocarbons	56.6	10.0	mg/kg	66.7		84.9	70-130	1.21	40	
Surrogate: 2-FBP	*11.3*		"	*10.7*		*106*	*50-150*			
Duplicate (3J16025-DUP1)					Source: B3J0357-30					
Diesel Range Hydrocarbons	58.7	23.0	mg/kg dry		59.2			0.848	40	
Lube Oil Range Hydrocarbons	432	50.0	"		407			5.96	40	
Surrogate: 2-FBP	*9.20*		"	*10.9*		*84.4*	*50-150*			
Surrogate: Octacosane	*5.62*		"	*5.46*		*103*	*57-129*			

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URS Corporation 1501 4th Ave, Suite 1400 Seattle, WA/USA 98101-1616	Project: HGP Project Number: 13756194 Project Manager: Gail Gislason	Amended Report Issued: 12/01/03 11:21

Identified Semivolatile Petroleum Products by NWTPH-Dx (w/o Acid/Silica Gel Clean-up) - Quality Control

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3K25023: Prepared 11/25/03 Using EPA 3550B										
Blank (3K25023-BLK1)										
Mineral Oil Range Hydrocarbons	ND	25.0	mg/kg							
Surrogate: 2-FBP	*8.64*		"	*10.7*		*80.7*	*50-150*			
Surrogate: Octacosane	*5.21*		"	*5.33*		*97.7*	*57-120*			
LCS (3K25023-BS1)										
Diesel Range Hydrocarbons	59.1	10.0	mg/kg	66.7		88.9	70-130			
Surrogate: 2-FBP	*9.68*		"	*10.7*		*90.5*	*50-150*			
LCS Dup (3K25023-BSD1)										
Diesel Range Hydrocarbons	57.7	10.0	mg/kg	66.7		86.5	70-130	0.696	40	
Surrogate: 2-FBP	*9.78*		"	*10.7*		*91.4*	*50-150*			
Duplicate (3K25023-DUP1)					Source: B3J0357-01					
Mineral Oil Range Hydrocarbons	ND	25.0	mg/kg dry		ND			NA	40	
Surrogate: 2-FBP	*8.09*		"	*11.1*		*78.3*	*50-150*			
Surrogate: Octacosane	*5.26*		"	*5.57*		*94.4*	*57-120*			

North Creek Analytical - Bothell

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Jeff Geedes

Jeff Geedes, Project Manager

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URS Corporation 1501 4th Ave, Suite 1400 Seattle, WA/USA 98101-1616	Project: HGP Project Number: 33756194 Project Manager: Gail Gislason	Amended Report Issued: 12/01/03 11:21

Total Metals by EPA 6000/7000 Series Methods - Quality Control

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3J14054: Prepared 10/14/03 Using EPA 3050B										
Blank (3J14054-BLK1)										
Arsenic	ND	0.500	mg/kg							
Barium	ND	5.00	"							
Cadmium	ND	0.500	"							
Chromium	ND	0.500	"							
Lead	ND	0.500	"							
Selenium	ND	0.500	"							
Silver	ND	0.500	"							
LCS (3J14054-BS1)										
Arsenic	42.1	0.500	mg/kg	40.0		105	80-120			
Barium	42.5	5.00	"	40.0		106	80-120			
Cadmium	42.1	0.500	"	40.0		105	80-120			
Chromium	41.7	0.500	"	40.0		104	80-120			
Lead	41.1	0.500	"	40.0		103	80-120			
Selenium	42.2	0.500	"	40.0		106	80-120			
Silver	42.8	0.500	"	40.0		107	80-120			
LCS Dup (3J14054-BSD1)										
Arsenic	40.1	0.500	mg/kg	40.0		100	80-120	4.87	20	
Barium	40.6	5.00	"	40.0		102	80-120	4.57	20	
Cadmium	39.5	0.500	"	40.0		98.2	80-120	6.88	20	
Chromium	39.6	0.500	"	40.0		99.0	80-120	5.17	20	
Lead	39.0	0.500	"	40.0		97.5	80-120	6.21	20	
Selenium	40.9	0.500	"	40.0		102	80-120	3.13	20	
Silver	38.5	0.500	"	40.0		96.2	80-120	10.6	20	
Matrix Spike (3J14054-MS1)					Source: B3J0357-1D					
Arsenic	40.9	0.500	mg/kg dry	41.8	1.72	93.3	72-130			
Barium	106	5.00	"	41.8	59.8	111	53-147			
Cadmium	40.6	0.500	"	41.8	0.235	96.6	70-130			
Chromium	49.7	0.500	"	41.8	9.44	96.3	53-147			
Lead	47.3	0.500	"	41.8	6.99	96.4	52-137			
Selenium	40.3	0.500	"	41.8	0.355	95.6	70-139			
Silver	37.7	0.500	"	41.8	0.157	89.8	63-125			

North Creek Analytical - Bothell

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URS Corporation	Project: BGP	
1501 4th Ave, Suite 1400	Project Number: 33756194	Amended Report
Seattle, WA/USA 98101-1616	Project Manager: Gail Gislason	Issued: 12/01/03 11:21

Total Metals by EPA 6000/7000 Series Methods - Quality Control

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3J14054: Prepared 10/14/03 Using EPA 3050B										
Matrix Spike Dup (3J14054-MSD1)					Source: B3J0357-10					
Arsenic	40.2	0.500	mg/kg dry	41.8	1.91	91.6	72-136	1.73	30	
Barium	103	5.00	"	41.8	59.8	105	53-147	2.87	30	
Cadmium	39.8	0.500	"	41.8	0.235	94.7	70-130	1.99	30	
Chromium	48.3	0.500	"	41.8	9.44	93.0	53-147	2.86	30	
Lead	66.5	0.500	"	41.8	6.99	94.5	62-137	1.71	30	
Selenium	39.1	0.500	"	41.8	0.355	92.7	70-130	1.02	30	
Silver	37.5	0.500	"	41.8	0.157	89.3	63-125	0.532	30	
Post Spike (3J14054-PS1)					Source: B3J0357-10					
Arsenic	0.202		mg/kg dry	0.100	0.00366	98.3	75-125			
Barium	0.215		"	0.100	0.125	100	75-125			
Cadmium	0.0980		"	0.100	0.000450	97.6	75-125			
Chromium	0.115		"	0.100	0.0141	96.9	75-125			
Lead	0.111		"	0.100	0.0134	97.6	75-125			
Selenium	0.102		"	0.100	0.000660	101	75-125			
Silver	0.0970		"	0.100	0.000038	96.7	75-125			
Batch 3J15023: Prepared 10/15/03 Using EPA 3050B										
Blank (3J15023-BLK1)										
Arsenic	ND	0.500	mg/kg							
Barium	ND	5.00	"							
Cadmium	ND	0.500	"							
Chromium	ND	0.500	"							
Lead	ND	0.500	"							
Selenium	ND	0.500	"							
Silver	ND	0.500	"							

North Creek Analytical - Bothell

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Jeff Gerdes

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URS Corporation 1501 4th Ave, Suite 1400 Seattle, WA/USA 98101-1616	Project: HGP Project Number: 35756194 Project Manager: Gail Gislason	Amended Report Issued: 12/01/03 11:21

Total Metals by EPA 6000/7000 Series Methods - Quality Control

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3J15023: Prepared 10/15/03 Using EPA 3050B										
LCS (3J15023-BS1)										
Arsenic	40.5	0.500	mg/kg	40.4		100	80-120			
Barium	41.3	5.00	"	40.4		102	80-120			
Cadmium	40.6	0.500	"	40.4		100	80-120			
Chromium	40.0	0.500	"	40.4		99.0	80-120			
Lead	39.9	0.500	"	40.4		98.8	80-120			
Selenium	41.0	0.500	"	40.4		101	80-120			
Silver	35.2	0.500	"	40.4		86.9	80-120			
LCS Dup (3J15023-BSD1)										
Arsenic	40.8	0.500	mg/kg	40.0		102	80-120	0.738	20	
Barium	41.3	5.00	"	40.0		103	80-120	0.00	20	
Cadmium	40.9	0.500	"	40.0		102	80-120	0.736	20	
Chromium	40.3	0.500	"	40.0		101	80-120	0.747	20	
Lead	40.4	0.500	"	40.0		101	80-120	1.25	20	
Selenium	40.9	0.500	"	40.0		102	80-120	0.244	20	
Silver	41.0	0.500	"	40.0		101	80-120	15.5	20	
Matrix Spike (3J15023-MS1)					Source: BJJ0357-23					
Arsenic	34.5	0.556	mg/kg dry	44.8	2.04	72.5	72-130			
Barium	90.8	5.56	"	44.8	66.8	53.6	53-147			
Cadmium	35.0	0.556	"	44.8	0.165	77.8	70-130			
Chromium	42.0	0.556	"	44.8	9.62	72.3	53-147			
Lead	40.5	0.556	"	44.8	6.77	75.3	62-137			
Selenium	33.5	0.556	"	44.8	0.311	74.1	70-130			
Silver	33.8	0.556	"	44.8	ND	75.4	63-125			
Matrix Spike Dup (3J15023-MSD1)					Source: BJJ0357-23					
Arsenic	34.3	0.500	mg/kg dry	39.1	2.04	92.7	72-130	10.4	30	
Barium	108	5.00	"	39.1	66.8	105	53-147	17.3	30	
Cadmium	38.0	0.500	"	39.1	0.163	96.8	70-130	8.22	30	
Chromium	46.7	0.500	"	39.1	9.62	94.8	53-147	10.6	30	
Lead	45.9	0.500	"	39.1	6.77	100	62-137	12.5	30	
Selenium	36.4	0.500	"	39.1	0.311	92.3	70-130	6.30	30	
Silver	37.1	0.500	"	39.1	ND	94.9	63-125	9.31	50	

North Creek Analytical - Bothell

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Jeff Gerdes

Jeff Gerdes, Project Manager

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URS Corporation 1501 4th Ave, Suite 1400 Seattle, WA/USA 98101-1616	Project: HGP Project Number: 33756194 Project Manager: Gail Gidason	**Amended Report** Issued: 12/01/03 11:21

Total Metals by EPA 6000/7000 Series Methods - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3J15023: Prepared 10/15/03 Using EPA 3050B										
Post Spike (3J15023-PS1)					Source: B3J0357-23					
Arsenic	53.6	0.500	mg/kg dry	49.4	2.04	104	75-125			
Barium	120	5.00	"	49.4	66.8	108	75-125			
Cadmium	51.5	0.500	"	49.4	0.263	104	75-125			
Chromium	60.7	0.500	"	49.4	9.62	103	75-125			
Lead	58.4	0.500	"	49.4	6.77	105	75-125			
Selenium	51.9	0.500	"	49.4	0.311	104	75-125			
Silver	52.0	0.500	"	49.4	ND	105	75-125			
Batch 3J15034: Prepared 10/15/03 Using EPA 7471A										
Blank (3J15034-BLK1)										
Mercury	ND	0.200	mg/kg							
LCS (3J15034-BS1)										
Mercury	0.450	0.200	mg/kg	0.481		93.6	80-120			
LCS Dup (3J15034-BSD1)										
Mercury	0.483	0.200	mg/kg	0.500		96.6	80-120	7.07	20	
Matrix Spike (3J15034-MS1)					Source: B3J0357-10					
Mercury	0.500	0.200	mg/kg dry	0.522	0.0228	91.4	70-130			
Matrix Spike Dup (3J15034-MSD1)					Source: B3J0357-10					
Mercury	0.504	0.200	mg/kg dry	0.522	0.0228	92.2	70-130	0.797	30	
Batch 3J16014: Prepared 10/16/03 Using EPA 7471A										
Blank (3J16014-BLK1)										
Mercury	ND	0.200	mg/kg							

North Creek Analytical - Bothell

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URS Corporation	Project: ILCE	
1501 4th Ave, Suite 1400	Project Number: 33756194	Amended Report
Seattle, WA/USA 98101-1616	Project Manager: Gail Gislason	Issued: 12/01/03 11:21

Total Metals by EPA 6000/7000 Series Methods - Quality Control

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3J16014: Prepared 10/16/03 Using EPA 7471A										
LCS (3J16014-BS1)										
Mercury	0.521	0.200	mg/kg	0.500		104	85-120			
LCS Dup (3J16014-BSD1)										
Mercury	0.498	0.200	mg/kg	0.500		99.6	80-120	5.15	20	
Matrix Spike (3J16014-MS1)					Source: B3J0357-19					
Mercury	0.491	0.200	mg/kg dry	0.506	0.0244	92.2	70-130			
Matrix Spike Dup (3J16014-MSD1)					Source: B3J0357-19					
Mercury	0.463	0.200	mg/kg dry	0.486	0.0244	90.7	70-130	5.44	30	

North Creek Analytical - Bothell

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URS Corporation 1501 4th Ave, Suite 1400 Seattle, WA/USA 98101-1616	Project: HGP Project Number: 33756194 Project Manager: Gail Gislason	Amended Report Issued: 12/01/03 11:21

Total Metals by EPA 6000/7000 Series Methods - Quality Control

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3J16014: Prepared 10/16/03 Using EPA 7471A										
LCS (3J16014-BS1)										
Mercury	0.528	0.200	mg/kg	0.500		106	80-120			
LCS Dup (3J16014-BSD1)										
Mercury	0.498	0.200	mg/kg	0.500		99.6	80-120	5.85	20	
Matrix Spike (3J16014-MS1)					Source: B3J0357-19					
Mercury	0.491	0.200	mg/kg dry	0.506	0.0244	92.2	70-130			
Matrix Spike Dup (3J16014-MSD1)					Source: B3J0357-19					
Mercury	0.465	0.200	mg/kg dry	0.486	0.0244	90.7	70-130	5.44	30	

North Creek Analytical - Bothell

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URS Corporation	Project: HGP	
1501 4th Ave, Suite 1400	Project Number: 33756194	Amended Report
Seattle, WA/USA 98101-1616	Project Manager: Gail Gislason	Issued: 12/01/03 11:21

Polychlorinated Biphenyls by EPA Method 8082 - Quality Control
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch JJ16055: Prepared 10/16/03 Using EPA 3550B										
Blank (JJ16055-BLK1)										
Aroclor 1016	ND	25.0	ug/kg							
Aroclor 1221	ND	50.0	"							
Aroclor 1232	ND	25.0	"							
Aroclor 1242	ND	25.0	"							
Aroclor 1248	ND	25.0	"							
Aroclor 1254	ND	25.0	"							
Aroclor 1260	ND	25.0	"							
Aroclor 1262	ND	25.0	"							
Aroclor 1268	ND	25.0	"							
Surrogate: TCX	5.97		"	6.67		89.5	49-124			
Surrogate: Decachlorobiphenyl	5.31		"	6.67		79.6	48-150			
LCS (JJ16055-BS1)										
Aroclor 1016	78.9	25.0	ug/kg	83.3		94.7	69-123			
Aroclor 1260	75.8	25.0	"	83.3		91.0	66-140			
Surrogate: TCX	6.58		"	6.67		98.7	49-124			
Surrogate: Decachlorobiphenyl	5.51		"	6.67		82.6	48-150			
LCS Dup (JJ16055-BSD1)										
Aroclor 1016	74.7	25.0	ug/kg	83.3		89.7	69-123	5.47	30	
Aroclor 1260	77.8	25.0	"	83.3		93.4	66-140	2.60	30	
Surrogate: TCX	6.43		"	6.67		96.4	49-124			
Surrogate: Decachlorobiphenyl	5.67		"	6.67		85.0	48-150			
Matrix Spike (JJ16055-MS1)					Source: BJJ0452-06					
Aroclor 1016	99.6	25.0	ug/kg dry	95.2	ND	105	33-159			
Aroclor 1260	99.4	25.0	"	95.2	29.4	73.5	40-158			
Surrogate: TCX	6.84		"	7.61		89.9	49-124			
Surrogate: Decachlorobiphenyl	6.12		"	7.61		80.4	48-150			

North Creek Analytical - Bothell

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URS Corporation 1501 8th Ave, Suite 1400 Seattle, WA/USA 98101-1616	Project: EEGP Project Number: 33756194 Project Manager: Gail Gidgeon	Amended Report Issued: 12/01/03 11:21

Polychlorinated Biphenyls by EPA Method 8082 - Quality Control

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3J16055: Prepared 10/16/03 Using EPA 3550B										
Matrix Spike Dup (3J16055-MSD1)					**Source: B3J0452-06**					
Aroclor 1016	99.0	25.0	ug/kg dry	95.2	ND	104	33-159	0.604	35	
Aroclor 1260	102	25.0	"	95.2	29.4	76.1	40-156	2.58	35	
Surrogate: TCX	*6.85*		"	*7.61*		*90.0*	*49-124*			
Surrogate: Decachlorobiphenyl	*6.37*		"	*7.61*		*84.0*	*48-150*			

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URS Corporation	Project: HGP	
1501 4th Ave, Suite 1400	Project Number: 33756194	Amended Report
Seattle, WA/USA 98101-1616	Project Manager: Gail Gislason	Issued: 12/01/03 11:21

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3J16011: Prepared 10/16/03 Using Dry Weight										
Blank (3J16011-BLK1)										
Dry Weight	100	1.00	%							
Batch 3J16013: Prepared 10/16/03 Using Dry Weight										
Blank (3J16013-BLK1)										
Dry Weight	100	1.00	%							
Batch 3J18010: Prepared 10/18/03 Using Dry Weight										
Blank (3J18010-BLK1)										
Dry Weight	100	1.00	%							

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Jeff Gerdes

Jeff Gerdes, Project Manager

www.nwlabs.com

Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244
425.420.9200 fax 425.420.9210
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776
509.924.9200 fax 509.924.9290
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132
503.906.9200 fax 503.906.9210
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711
541.383.9110 fax 541.382.7588
Anchorage 2000 W International Airport Road, Suite A-10, Anchorage, AK 99502-1119
907.563.9200 fax 907.563.9210

URS Corporation	Project: HGP	
1501 4th Ave, Suite 1400	Project Number: 33756194	Amended Report
Seattle, WA/USA 98101-1616	Project Manager: Gail Gislason	Issued: 12/01/03 11:21

Notes and Definitions

D-09	Results in the diesel organics range are primarily due to overlap from a heavy oil range product.
Q-29	This sample was prepared outside of the method established holding time.
S-01	The surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interferences.
S-06	The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interferences.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

R.W. RHINE, INC.
1124 112th Street East
Tacoma, Washington 98445
253-537-5852 Tacoma 253-838-0651 Seattle
Fax 253-531-9548

LETTER OF TRANSMITTAL

DATE: 5-6-04 JOB NO. #2865

ATTENTION: Dean Montgomery

RE: IFB #C-40243

(1) ENW

"Hand Delivered"

WE ARE SENDING YOU ☐ Attached ☐ Under separate cover via ____ the following items:

☐ Shop drawings ☐ Prints ☐ Plans ☐ Samples ☐ Specifications

☐ Copy of letter ☐ Change order ☐ ____

COPIES	DATE	NO.	DESCRIPTION
1	5-6-04		Submittal 02080-1.3 - Confirmatory Sampling Result

THESE ARE TRANSMITTED as checked below:

☐ For approval ☒ Approved as submitted ☐ Resubmit ____ copies for approval

☒ For your use ☐ Approved as noted ☐ Submit ____ copies for distribution

☒ As requested ☐ Returned for corrections ☐ Return ____ corrected prints

☐ For review and comment ☐ ____

☐ FOR BIDS DUE ____ ☐ PRINTS RETURNED AFTER LOAN TO US

REMARKS: Post remediation samples for the home yard and sample results for the office bldg. crawl.

COPY TO: File

SIGNED: Joan Bate

If enclosures are not as noted, kindly notify us at once.

Table 2
Summary of Post Excavation Soil Analytical Results
Hanford Generating Plant - Turbine Generator Building Demolition Project
Hanford, Washington

SWMU ID (Site Location)	Sample ID[1]	Approximate Sample Depth (feet, bgs)	Petroleum Hydrocarbons (mg/kg)		Lead[3] (mg/kg)
			Diesel-Range[2]	Oil-Range[2]	
SWMU #10 (Disposal "bone" yard)	SWMU 10-6PE1	2	ND	ND	-
	SWMU 10-6PE2	2	ND	ND	-
	SWMU 10-6PE3	2	ND	ND	-
	SWMU 10-7PE1	2	ND	940	ND
	SWMU 10-7PE2	2	ND	ND	3.6
	SWMU 10-7PE3*	2	ND	330	ND
	SWMU 10-8PE1	2	ND	640	ND
	SWMU 10-8PE2	2	ND	ND	ND
	SWMU 10-9PE1	2	ND	250	-
	SWMU 10-9PE2	2	ND	ND	-
	SWMU 10-9PE3	2	ND	ND	-
	SWMU 10-13PE1	1.5	-	-	ND
	SWMU 10-13PE2	1.5	-	-	ND
	SWMU 10-13PE3	1.5	-	-	ND
MTCA Method A Soil Cleanup Level			2,000	2,000	250

Notes:
bgs = below ground surface
MTCA = Model Toxics Control Act
mg/kg = milligrams per kilogram (parts per million)
ND = Not detected above the laboratory reporting limits.
"-" = not analyzed

[1] Post excavation soil samples collected on 5/4/04.
[2] Samples analyzed using NWTPH-Dx extended method for diesel- and oil-range hydrocarbons, and mineral oil.
[3] Samples analyzed using EPA Method 7010 for lead.
* Laboratory composite sample

URS CORPORATION

Advanced Analytical Laboratory
(425) 487-0410, fax (425) 487-8089

AAL Job Number: A40505-1
Client: URS Corp.
Project Manager: Thomas Kim
Client Project Name: HGP
Client Project Number: 33758194
Date received: 05/05/04

Analytical Results				PE1	PE2	PE3
NWTPH-Dx, mg/kg		MTH BLK	SWMU-9-4	SWMU-10-5	SWMU-10-6	SWMU-10-9
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	05/05/04	05/05/04	05/05/04	05/05/04	05/05/04
Date analyzed	Limits	05/05/04	05/05/04	05/05/04	05/05/04	05/05/04
Kerosene/Jet fuel	20	nd	nd	nd	nd	nd
Diesel/Fuel oil	20	nd	nd	nd	nd	nd
Heavy oil	50	nd	nd	nd	nd	nd
Surrogate recoveries:						
Fluorobiphenyl		101%	101%	101%	101%	103%
o-Terphenyl		100%	88%	100%	100%	101%

Data Qualifiers and Analytical Comments
nd - not detected at listed reporting limits
na - not analyzed
C - coelution with sample peaks
M - matrix interference
J - estimated value
Results reported on dry-weight basis
Acceptable Recovery limits: 70% TO 130%
Acceptable RPD limit: 30%

URGENT

Post-it® Fax Note 7671	Date 5/6/4 # of pages ▶ 7
To Thomas Kim	From Val Ivanov
Co./Dept. URS	Co. AAL
Phone #	Phone #
Fax #	Fax #

05/06/04 THU 08:44 [TX/RX NO 5534]

Advanced Analytical Laboratory
(425) 497-0110; fax (425) 497-6089

AAL Job Number: A40505-1
Client: URS Corp.
Project Manager: Thomas Kim
Client Project Name: HGP
Client Project Number: 38756194
Date received: 05/05/04

Analytical Results					Composite	
			PE1	PE2	PE3	PE1
NWTPH-Dx, mg/kg		MTH BLK	SWMU-10-7	SWMU-10-7	SWMU-10-7/8	SWMU-10-8
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	05/05/04	05/05/04	05/05/04	05/05/04	05/05/04
Date analyzed	Limits	05/05/04	05/05/04	05/05/04	05/05/04	05/05/04
Kerosene (Jet fuel	20	nd	nd	nd	nd	nd
Diesel (fuel oil	20	nd	nd	nd	nd	nd
Heavy oil	50	nd	640	nd	330	640
Surrogate recoveries:						
Fluorobiphenyl		101%	102%	103%	99%	101%
o-Terphenyl		100%	101%	101%	98%	100%

Data Qualifiers and Analytical Comments
nd - not detected at listed reporting limits
na - not analyzed
C - coelution with sample peaks
M - matrix interference
J - estimated value
Results reported on dry-weight basis
Acceptable Recovery limits: 70% TO 130%
Acceptable RPD limit: 30%

05/06/04 THU 08:44 [TX/RX NO 5836]

Advanced Analytical Laboratory
(425) 497-0110, fax (425) 497-8089

AAL Job Number: A40505-1
Client: URS Corp.
Project Manager: Thomas Kim
Client Project Name: HGP
Client Project Number: 33758194
Date received: 05/05/04

Analytical Results			PE2	PE1	PE2	PE3
NWTPH-Dx, mg/kg		MTH BLK	SWMU-10-8	SWMU-10-9	SWMU-10-9	SWMU-10-9
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	05/05/04	05/05/04	05/05/04	05/05/04	05/05/04
Date analyzed	Limits	05/05/04	05/05/04	05/05/04	05/05/04	05/05/04
Kerosene/Jet fuel	20	nd	nd	nd	nd	nd
Diesel/Fuel oil	20	nd	nd	nd	nd	nd
Heavy oil	50	nd	nd	250	nd	nd
Surrogate recoveries:						
Fluorobiphenyl		101%	102%	92%	100%	99%
o-Terphenyl		100%	101%	92%	97%	98%

Data Qualifiers and Analytical Comments
nd - not detected at listed reporting limits
na - not analyzed
C - coelution with sample peaks
M - matrix interference
J - estimated value
Results reported on dry-weight basis
Acceptable Recovery limits: 70% TO 130%
Acceptable RPD limit: 30%

Advanced Analytical Laboratory
(425) 497-0110, fax (425) 497-6089

AAL Job Number:	A40505-1
Client:	URS Corp.
Project Manager:	Thomas Kim
Client Project Name:	HGP
Client Project Number:	33756194
Date received:	05/05/04

Analytical Results						Composite
				PE1	PE2	PE3
Metals (7010), mg/kg		MTH BLK	LCS	SWMU-10-7	SWMU-10-7	SWMU-10-7/8
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	05/05/04	05/05/04	05/05/04	05/05/04	05/05/04
Date analyzed	Limits	05/05/04	05/05/04	05/05/04	05/05/04	05/05/04
Lead (Pb)	1.0	nd	104%	nd	3.6	nd

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits

na - not analyzed

Acceptable Recovery limits: 70% TO 130%

Acceptable RPD limit: 30%

URGENT

Post-it® Fax Note 7671	Date 5/6/4 # of pages ▶ 3
To Thomas Kim	From Val Ivanov
Co./Dept. URS	Co. AAL
Phone #	Phone #
Fax #	Fax #

05/06/04 THU 09:36 [TX/RX NO 5837]

Advanced Analytical Laboratory
(425) 497-0110, fax (425) 497-8089

AAL Job Number: A405005-1
Client: URS Corp.
Project Manager: Thomas Kim
Client Project Name: HCP
Client Project Number: 33795194
Date received: 05/05/04

Analytical Results			Dupl Composite PE3	PE1	PE2
Metals (7010), mg/kg		MTH BLK	SWMU-10-7/8	SWMU-10-8	SWMU-10-8
Matrix	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	05/05/04	05/05/04	05/05/04	05/05/04
Date analyzed	Limits	05/05/04	05/05/04	05/05/04	05/05/04
Lead (Pb)	1.0	nd	nd	nd	nd

Data Qualifiers and Analytical Comments
nd - not detected at listed reporting limits
na - not analyzed
Acceptable Recovery limits: 70% TO 130%
Acceptable RPD limit: 30%

05/06/04 THU 09:58 [TX/RX NO 5837]

Advanced Analytical Laboratory
(425) 497-0110, fax (425) 497-8089

AAL Job Number: A40505-1
Client: URS Corp.
Project Manager: Thomas Kim
Client Project Name: HGP
Client Project Number: 33758194
Date received: 05/05/04

Analytical Results			PE1	PE2	PE3
Metals (7010), mg/kg		MTH BLK	SWMU-10-13	SWMU-10-13	SWMU-10-13
Matrix	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	05/05/04	05/05/04	05/05/04	05/05/04
Date analyzed	Limits	05/05/04	05/05/04	05/05/04	05/05/04
Lead (Pb)	1.0	nd	nd	nd	nd

Data Qualifiers and Analytical Comments
nd - not detected at listed reporting limits
na - not analyzed
Acceptable Recovery limits: 70% TO 130%
Acceptable RPD limit: 30%

ADVANCED ANALYTICAL

Chain of Custody Record

Page (1) of 2

Laboratory Job #:

2821 152 Avenue NE
Redmond, WA 98052
(425) 497-0110 fax (425) 497-8089
aachemlab@yahoo.com

Client: URS Corp

Project Manager: Tim Ashkins / Gail Gibson

Address: 1501 4th Ave Bldg Suite 1600 Seattle WA 98101

Phone: 206 438-2100 Fax:

Project Name: HMP

Project Number: 55756194 ~~[illegible]~~

Collector: Tim Ashkins

Date of collection: 5/6/04

	Sample ID	Time	Matrix	Container type	8240 Volatiles	8021B Volatiles	BTEX	BTEX/MVTPH-Gx	NWTPH-Gx	NWTPH-Dx	NWTPH-HCID	8270 Semivolatiles	8270 PAH	8082 PCBs	8081 Pesticides	RCRA 8 Metals	Lead				Notes, comments	# of containers
1	Swan-10-7 PE1	1350	(S)	4oz						X							X					(1)
2	Swan-10-7 PE2	1:54								X							X					
3	Swan-10-7 PE3	1:52								X							X		X		Composite	
4	Swan-10-8 PE3	1:55								X							X		X		Swan-10-7 PE3	
5	Swan-10-8 PE2	1:54								X							X					
6	Swan-10-8 PE1	1:50								X							X					
7	Swan-10-4 PE1	1:4[illegible]								X												
8	Swan-10-4 PE2	1:41								X												
9	Swan-10-4 PE3	1342								X												
10	Swan-10-PE1	1512															X					
11	Swan-10-PE2	1516															X					
12	Swan-10-PE3	1517															X					7

Relinquished by:	Date/Time	Received by:	Date/Time
Tim Ashkins	1515	[illegible]	5/7/04
Relinquished by:	Date/Time	Received by:	Date/Time

Sample receipt info:

Total # of containers:

Condition (temp, °C)

Seals (intact?, Y/N)

Comments:

Turnaround time:

Same day O

24 hr X

48 hr O

Standard O

ADVANCED ANALYTICAL

Chain of Custody Record

Page 2 of 2

Laboratory Job #:

2821 152 Avenue NE
Redmond, WA 98052
(425) 497-0110 fax (425) 497-8089
aachevista@yahoo.com

Client: [illegible]

Project Manager: [illegible]

Address: [illegible]

Phone: [illegible] Fax:

Project Name: [illegible]

Project Number: [illegible]

Collector: [illegible]

Date of collection: 5/4/04

	Sample ID	Time	Matrix	Container type	8260 Volatiles	8021B Volatiles	BTEX	BTEX/NWTPH-Gx	NWTPH-Gx	NWTPH-Dx	NWTPH-HCID	8270 Semi-volatiles	8270 PAH	8082 PCBs	8081 Pesticides	RCRA 8 Metals	Lead				Notes, comments	# of containers
1	[illegible]	[illegible]	S	[illegible]						X												1
2	[illegible]	[illegible]								X												
3	[illegible]	[illegible]								X												
4	~~[illegible]~~ [illegible]	[illegible]								X												
5																						
6																						
7																						
8																						
9																						
10																						
11																						
12																						

Relinquished by:	Date/Time	Received by:	Date/Time
[illegible]	5/4 [illegible]	[illegible]	5/4/04
Relinquished by:	Date/Time	Received by:	Date/Time

Sample receipt info:

Total # of containers:

Condition (temp, °C)

Seals (intact?, Y/N)

Comments:

Turnaround time:

Same day ○

24 hr ○

48 hr ○

Standard ○

DOE/RL-2008-46-ADD5, REV. 0

E-5701

Energy Northwest
Hanford Generating Plant (HGP)
Seal Well Characterization Analysis

1. On October 10 and 11th, In-Situ Gamma Spectroscopy was performed on the interior walls of the seal well. The area of interest was 4 feet above the water level. Scaling of the concrete surface was visible.

2. Ten individual In-Situ Gamma Spectroscopy shots were performed. Locations were determined as outlined in the Hanford Generating Plant Sampling and Analysis Plan, Part I. Direct radiological surveys, using hand held instrumentation, was also performed on the concrete surface, as well as the stop logs.

3. The ***Hanford Generating Plant Sampling and Analysis Plan Part I*** identified 8 locations for sludge samples to be taken. Sludge was retrieved from two of the identified locations (the northeastern section). The remaining six locations have no sludge present. Attempts to retrieve sludge from alternate locations also revealed no sludge present.

4. A composite water sample was collected from the seal well. Analysis was performed at the Waste Sampling Characterization Facility (WSCF) located in the 200W Area of the Hanford Nuclear reservation. Results are attached.

Overview of Results

The results of the In-Situ Gamma Spectroscopy performed on the Seal Well Inner Wall indicate no presence of the contaminants of concern: Cobalt 60 and Cesium 137. Gamma Spectroscopy was performed on the sludge samples. Results indicate the Co-60 activity to be at 5.57E-05 µCi/g, with a Minimum Detectable Concentration (MDC) of 1.20E-04 µCi/g.

Direct radiological surveys indicate no detectable surface contamination on the Seal Well inner surface areas. The radiological portions of the analysis performed by the WSCF laboratory indicate no presence of any beta or alpha emitting radionuclides.

FAX COVER SHEET

Date: April 1, 2002

Page 1 of 6 Pages (Coversheet included)

Fax Number To:	Fax Number From:
373-4145	372-2089
Name: Cheri Sanders	**Name:** Mark W. Bowman
Phone Number/Location: 377-1033	**Phone Number / Location:** 373-9379 / 2025FA/C1
Organization: Energy NW	**Organization:** LWPF Technical Process Group

Message

Here are the results you asked for.

pH = 8.02

Gross Alpha = < -.24

Gross Beta = < -1.7

WSCF
ANALYTICAL LABORATORY REPORT

SAF L100168

HGP

for

Liquid Effluent Facility
Post Office Box 1970 T7-39
MSIN:S6-72
Richland WA 99352

Attention; MANDY GRIFFIN S6-72

Report#: 20001569
Report Date: 23 oct 2000
Report W004/ver. 3.1
Liquid Effluent Facility

DOE/RL-2008-46-ADD5, REV. 0

E-5704

WSCF
ANALYTICAL LABORATORY REPORT

Attention: MANDY GRIFFIN S6-72 Group #: 20001569
Project Number ETF :EFFLUENT TREATMENT FACILITY

Sample #	Client ID		Test Performed	Matrix	Method	RQ	Result	Units	MDL	Analyzed	Sampled	Received
W00000620	L05328	100 N	Total Dissolved Solids 180C Dry	WATER	EPA 160.1		71	mg/L	1.00	10/04/00	10/03/00	10/03/00
W00000620	L05328	100 N	Total Organic Carbon	WATER	EPA 9060		1.220	mg/L	0.30	10/06/00	10/03/00	10/03/00
W00000620	L05328	100 N	Total Suspended Solids	WATER	EPA 160.2		4	mg/L	0.20	10/04/00	10/03/00	10/03/00
W00000620	L05328	100 N	pH Direct Measurement	WATER	EPA 150.1		8.02	pH	0.01	10/04/00	10/03/00	10/03/00
W00000620	L05328	100 N	Bromide (Br) by IC	WATER	EPA 300.0	U	< 1.000e-01	mg/L	0.10	10/05/00	10/03/00	10/03/00
W00000620	L05328	100 N	Chloride (Cl) by IC	WATER	EPA 300.0		8.810e-01	mg/L	0.03	10/05/00	10/03/00	10/03/00
W00000620	L05328	100 N	Fluoride (F) by IC	WATER	EPA 300.0		8.200e-02	mg/L	7.00e-000	10/05/00	10/03/00	10/03/00
W00000620	L05328	100 N	Nitrate (N) by IC	WATER	EPA 300.0		2.960e-01	mg/L	0.04	10/05/00	10/03/00	10/03/00
W00000620	L05328	100 N	Nitrite (N) by IC	WATER	EPA 300.0	U	< 2.000e-02	mg/L	0.02	10/05/00	10/03/00	10/03/00
W00000620	L05328	100 N	Phosphate (P) by IC	WATER	EPA 300.0	U	< 6.000e-02	mg/L	0.06	10/05/00	10/03/00	10/03/00
W00000620	L05328	100 N	Sulfate (SO4) by IC	WATER	EPA 300.0		1.685e+01	mg/L	0.40	10/05/00	10/03/00	10/03/00
W00000620	L05328	100 N	Ce-144 Rel.% Count Error (GEA)	WATER	LA-508-462		167.	%	0.00	10/20/00	10/03/00	10/03/00
W00000620	L05328	100 N	Ce-144 by GEA	WATER	LA-508-462	U	1.85e+01	pCi/L	62.80	10/20/00	10/03/00	10/03/00
W00000620	L05328	100 N	CePr-144 Rel.% Count Error	WATER	LA-508-462		167.	%	0.00	10/20/00	10/03/00	10/03/00
W00000620	L05328	100 N	CePr-144 by GEA	WATER	LA-508-462	U	3.70e+01	pCi/L	1.00e+002	10/20/00	10/03/00	10/03/00
W00000620	L05328	100 N	Cs-137 Rel.% Count Error (GEA)	WATER	LA-508-462		4.5.	%	0.00	10/20/00	10/03/00	10/03/00
W00000620	L05328	100 N	Co-60 by GEA	WATER	LA-508-462	U	9.88e-01	pCi/L	7.67	10/20/00	10/03/00	10/03/00
W00000620	L05328	100 N	Cr-51 Rel.% Count Error (GEA)	WATER	LA-508-462		1000	%	0.00	10/20/00	10/03/00	10/03/00
W00000620	L05328	100 N	Cr-134 by GEA	WATER	LA-508-462	U	3.77e-01	pCi/L	7.40	10/20/00	10/03/00	10/03/00
W00000620	L05328	100 N	Cs-137 Rel.% Count Error (GEA)	WATER	LA-508-462		108	%	0.00	10/20/00	10/03/00	10/03/00
W00000620	L05328	100 N	Cs-137 by GEA	WATER	LA-508-462	U	4.66e+00	pCi/L	8.00	10/20/00	10/03/00	10/03/00
W00000620	L05328	100 N	Eu-152 Rel.% Count Error (GEA)	WATER	LA-508-462		1000	%	0.00	10/20/00	10/03/00	10/03/00
W00000620	L05328	100 N	Eu-152 by GEA	WATER	LA-508-462	U	7.23e-01	pCi/L	23.20	10/20/00	10/03/00	10/03/00
W00000620	L05328	100 N	Eu-154 Rel.% Count Error (GEA)	WATER	LA-508-462		1000	%	0.00	10/20/00	10/03/00	10/03/00
W00000620	L05328	100 N	Eu-154 by GEA	WATER	LA-508-462	U	8.01e-02	pCi/L	20.50	10/20/00	10/03/00	10/03/00
W00000620	L05328	100 N	Eu-155 Rel.% Count Error (GEA)	WATER	LA-508-462		209.	%	0.00	10/20/00	10/03/00	10/03/00

MDL=Minimum Detection Limit
RQ=Result Qualifier

B - The analyte was detected in the sample and method blank.
E - Compound concentration exceeded calibration range.
N - Identification is based on a mass spectral library search.
D - Compound concentration resulted from a dilution.
J - Estimated value. Z - See Comments.
U - The analyte was analyzed for but not detected.

* - Indicates results that have NOT been validated.

WSCF
ANALYTICAL LABORATORY REPORT

Attention: MANDY GRIFFIN S6-72 **Group #:** 20001569
Project Number ETF :EFFLUENT TREATMENT FACILITY

Sample #	Client ID		Test Performed	Matrix	Method	RQ	Result	Units	MDL	Analyzed	Sampled	Received
W0000000670	105328	100 N	Co-144 by GEA	WATER	EA-600-402	U	5.00e+00	pCi/L	21.80	10/20/00	10/03/00	10/03/00
W0000000670	105328	100 N	Nb-94 Rel.% Count Error (GEA)	WATER	EA-600-402		647.	%	0.00	10/20/00	10/03/00	10/03/00
W0000000670	105328	100 N	Nb-94 by GEA	WATER	EA-600-402	U	9.04e-01	pCi/L	7.07	10/20/00	10/03/00	10/03/00
W0000000670	105328	100 N	Ru-106 Rel.% Count Error (GEA)	WATER	EA-600-402		100.	%	0.00	10/20/00	10/03/00	10/03/00
W0000000670	105328	100 N	Ru-106 by GEA	WATER	EA-600-402	U	-2.79e+00	pCi/L	6.63	10/20/00	10/03/00	10/03/00
W0000000670	105328	100 N	Sb-125 Rel.% Count Error (GEA)	WATER	EA-600-402		1000	%	0.00	10/20/00	10/03/00	10/03/00
W0000000670	105328	100 N	Sb-125 by GEA	WATER	EA-600-402	U	3.21e+02	pCi/L	68.80	10/20/00	10/03/00	10/03/00
W0000000670	105328	100 N	Sb-125m Rel.% Count Error (GEA)	WATER	EA-600-402		290.	%	0.00	10/20/00	10/03/00	10/03/00
W0000000670	105328	100 N	Sb-126 by GEA	WATER	EA-600-402	U	-4.65e+00	pCi/L	20.10	10/20/00	10/03/00	10/03/00
W0000000670	105328	100 N	Sn-113 Rel.% Count Error (GEA)	WATER	EA-600-402		705.	%	0.00	10/20/00	10/03/00	10/03/00
W0000000670	105328	100 N	Sn-113 by GEA	WATER	EA-600-402	U	2.96e+00	pCi/L	10.70	10/20/00	10/03/00	10/03/00
W0000000670	105328	100 N	Zn-65 Rel.% Count Error (GEA)	WATER	EA-600-402		168.	%	0.00	10/20/00	10/03/00	10/03/00
W0000000670	105328	100 N	Zn-65 by GEA	WATER	EA-600-402	U	6.60e+00	pCi/L	15.20	10/20/00	10/03/00	10/03/00
W0000000670	105328	100 N	Gross Beta	WATER	EA-600-410	U	-1.7	pCi/L	1.00	10/06/00	10/03/00	10/03/00
W0000000670	105328	100 N	Gross Beta % Method Error	WATER	EA-600-410		100	%	0.00	10/06/00	10/03/00	10/03/00
W0000000670	105328	100 N	Total Alpha	WATER	EA-600-410	U	-2.4e-01	pCi/L	1.40	10/06/00	10/03/00	10/03/00
W0000000670	105328	100 N	Total Alpha % Method Error	WATER	EA-600-410		300	%	0.00	10/06/00	10/03/00	10/03/00
W0000000670	105328	100 N	Aluminum by ICP	WATER	EPA 6010A		4.80e+01	ug/L	25.63	10/12/00	10/03/00	10/03/00
W0000000670	105328	100 N	Antimony by ICP	WATER	EPA 6010A	U <	6.77e+01	ug/L	67.71	10/12/00	10/03/00	10/03/00
W0000000670	105328	100 N	Barium by ICP	WATER	EPA 6010A		2.76e+01	ug/L	0.66	10/12/00	10/03/00	10/03/00
W0000000670	105328	100 N	Beryllium by ICP	WATER	EPA 6010A	U <	4.44e+00	ug/L	4.44	10/12/00	10/03/00	10/03/00
W0000000670	105328	100 N	Calcium by ICP	WATER	EPA 6010A		3.92e+04	ug/L	21.00	10/12/00	10/03/00	10/03/00
W0000000670	105328	100 N	Cobalt by ICP	WATER	EPA 6010A	U <	6.00e+00	ug/L	6.00	10/12/00	10/03/00	10/03/00
W0000000670	105328	100 N	Iron by ICP	WATER	EPA 6010A		6.60e+01	ug/L	28.64	10/12/00	10/03/00	10/03/00
W0000000670	105328	100 N	Magnesium by ICP	WATER	EPA 6010A		4.80e+03	ug/L	90.00	10/12/00	10/03/00	10/03/00
W0000000670	105328	100 N	Manganese by ICP	WATER	EPA 6010A	U <	7.77e+00	ug/L	7.77	10/12/00	10/03/00	10/03/00

MDL=Minimum Detection Limit
RQ=Result Qualifier

B - The analyte was detected in the associated method blank.
E - Compound concentration exceeded calibration range.
K - Identification is based on a mass spectral library search.
O - Compound concentration resulted from a dilution.
J - Estimated value.
Z - See Comments.
U - The analyte was analyzed for but not detected.

* - Indicates results that have NOT been validated.

Report WD04ver. 3.1
Liquid Effluent Facility

WSCF
ANALYTICAL LABORATORY REPORT

Attention: MANDY GRIFFIN S6-72 **Group #:** 20001569
Project Number EIF :EFFLUENT TREATMENT FACILITY

Sample #	Client ID		Test Performed	Matrix	Method	RQ		Result	Units	MDL	Analyzed	Sampled	Received
W00C000620	L05329	100 N	Nickel by ICP	WATER	EPA 6010A	U	<	2.220e+01	ug/L	22.10	10/11/00	10/03/00	10/03/00
W00C000620	L05326	100 N	Potassium by ICP	WATER	EPA 6010A			1.190e+03	ug/L	9.00e+002	10/12/00	10/03/00	10/03/00
W00C000620	L05326	100 N	Silver by ICP	WATER	EPA 6010A	U	<	6.660e+00	ug/L	6.66	10/12/00	10/03/00	10/03/00
W00C000620	L05326	100 N	Sodium by ICP	WATER	EPA 6010A			5.440e+03	ug/L	26.47	10/12/00	10/03/00	10/03/00
W00C000620	L05326	100 N	Thallium by ICP	WATER	EPA 6010A	U	<	9.210e+01	ug/L	92.13	10/12/00	10/03/00	10/03/00
W00C000620	L05326	100 N	Titanium by ICP	WATER	EPA 6010A	U	<	5.550e+00	ug/L	5.55	10/12/00	10/03/00	10/03/00
W00C000620	L05326	100 N	Vanadium by ICP	WATER	EPA 6010A	U	<	1.110e+01	ug/L	11.10	10/12/00	10/03/00	10/03/00
W00C000620	L05326	100 N	Zinc by ICP	WATER	EPA 6010A			2.240e+01	ug/L	2.22	10/12/00	10/03/00	10/03/00
W00C000620	L05329	100 N	Arsenic by ICP-MS	WATER	EPA 200.8			1.02e+00	ug/L	0.26	10/10/00	10/03/00	10/03/00
W00C000620	L05329	100 N	Cadmium by ICP-MS	WATER	EPA 200.8	U	<	3.50e+01	ug/L	0.26	10/10/00	10/03/00	10/03/00
W00C000620	L05329	100 N	Chromium by ICP-MS	WATER	EPA 200.8	U	<	1.50e+00	ug/L	1.50	10/10/00	10/03/00	10/03/00
W00C000620	L05329	100 N	Copper by ICP-MS	WATER	EPA 200.8			3.30e+00	ug/L	1.00	10/10/00	10/03/00	10/03/00
W00C000620	L05329	100 N	Lead by ICP-MS	WATER	EPA 200.8	U	<	1.60e+00	ug/L	1.60	10/10/00	10/03/00	10/03/00
W00C000620	L05329	100 N	Mercury by ICP-MS	WATER	EPA 200.8	U	<	1.25e+01	ug/L	0.13	10/10/00	10/03/00	10/03/00
W00C000620	L05329	100 N	Selenium by ICP-MS	WATER	EPA 200.8	B		1.27e+00	ug/L	0.38	10/10/00	10/03/00	10/03/00
W00C000620	L05329	100 N	Uranium by ICP-MS	WATER	EPA 200.8			6.41e+01	ug/L	0.17	10/10/00	10/03/00	10/03/00
W00C000620	L05329	100 N	H-3 Std. % Count Error	WATER	EPA 906.0 M			nc	%	0.00	10/25/00	10/03/00	10/03/00
W00C000620	L05329	100 N	H-3 by Liquid Scint.	WATER	EPA 906.0 M			1.8E+02	pCi/l	1.90e+002	10/25/00	10/03/00	10/03/00

MDL=Minimum Detection Limit
RQ=Result Qualifier

B - The analyte was detected in the associated method blank
E - Compound concentration exceeded calibration range.
N - Identification is based on a mass spectral library search.
U - Compound concentration analyzed from a dilution.
J - Estimated value.
Z - See Comments.
U - The analyte was analyzed for but not detected.

* - Indicated results that have not been validated

Report W00Aver. 3.1
Liquid Effluent Facility

WSCF
ANALYTICAL COMMENT REPORT

Attention: MANDY GRIFFIN S6-72 **Group #:** 20001569
Project Number ETF

Sample #	Client ID	Lab Area	Test	Comment
		VALGROUP		TSS. Sample was not homogeneous. Solid particles found in sample.
				1,2,MS: Reported Hg levels represent inorganic mercury.
				This recovery of organic mercury compounds may be incomplete using this digestion method.
				The preparation Blank contains 0.58 ug/L (ppb) mercury.

Lab Areas: VALGROUP - Group Validation; LOGSAMP - Login for Sample; VALTEST - Test Validation; LOGTEST - Login for Tests; TESTDATA - Test Data Entry

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ENERGY NORTHWEST

Environmental Services

Analytical Laboratory

Client ID	Site	Date	Lab ID	Analyte	Method	Result Units
Seal Well Sludge #2	Seal Well	10/10/00	7218	Specialty	External Lab	See Attached
Seal Well Sludge #1	Seal Well	10/10/00	7219	Specialty	External Lab	See Attached

NA - Not Analyzed

Project Manager _____ 12/18/00

Anatek Labs, Inc.

1282 Alturas Drive • Moscow, ID 83843 • (208) 883-2839 • Fax (208) 882-9246 • email moscow@anatek-labs.com
504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-5999 • Fax (509) 838-4433 • email spokane@anatek-labs.com

ENERGY NORTHWEST ENVIRONMENTAL SERVICES
C.WELCH/R.CASTILLO
PO BOX 968 MD 1025
RICHLAND WA 99352

PROJECT: HGP

Certificate of Analysis

TCLP Metals - Method EPA 1311, 6020,7470A

Sample Name:	7219 SEAL WELL SLUDGE #2	Analyte	Result	Units	PQL	EPA MCL
Sample Location:		TCLP Cadmium	ND	ppm	0.05	1.0
Sampling Date:	10/10/2000	TCLP Chromium	ND	ppm	0.05	5.0
Sampling Time:	1000	TCLP Mercury	ND	ppm	0.01	0.2
Date Received:	11/16/2000	TCLP Lead	0.13	ppm	0.05	5.0
Lab #:	29816-01					
Matrix:	SLUDGE					
Analysis Date:	11/20/2000					

Sample Name:	7219 SEAL WELL SLUDGE #1	Analyte	Result	Units	PQL	EPA MCL
Sample Location:		TCLP Cadmium	ND	ppm	0.05	1.0
Sampling Date:	10/10/2000	TCLP Chromium	ND	ppm	0.05	5.0
Sampling Time:		TCLP Mercury	ND	ppm	0.01	0.2
Date Received:	11/16/2000	TCLP Lead	0.05	ppm	0.05	5.0
Lab #:	29816-02					
Matrix:	SLUDGE					
Analysis Date:	11/20/2000					

Lab Supervisor:

Report Date: 30 Nov-00

ND Not Detected PQL Practical Quantitation Limit
MCL Maximum Contaminant Level

TCLP Metals Report Page 1 of 1

Anatek Labs, Inc.

1282 Alturas Drive • Moscow, ID 83843 • (208) 883 2839 • Fax (208) 882-9246 • email moscow@anatek-labs.com
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ENERGY NORTHWEST ENVIRONMENTAL SERVICES
C.WELCH/R.CASTILLO
PO BOX 968 M/D 1025
RICHLAND WA 99352

PROJECT: HGP

Certificate of Analysis

Petroleum -NWTPH-HCID by GC/FID (8015 modified)

Sample Name:	7219 SEAL WELL SLUDGE #2	**Analyte**	**Result**	**Estimated Amount**
Sample Location:		Gasoline	< 25 mg/Kg by HCID	
Sampling Date:	10/10/2000	Diesel	< 50 mg/Kg by HCID	
Sampling Time:	10:00	Lube Oil	< 100 mg/Kg by HCID	
Date Received:	11/16/2000	*NWTPH-HCID Surrogate (Hexacosane) Percent Recovery*		82.0
Lab #:	29816-01	*Surrogate Acceptance Range: 50 - 150 %*		
Matrix:	SLUDGE			
Analysis Date:	11/16/2000	Comments:		

Sample Name:	7219 SEAL WELL SLUDGE #1	**Analyte**	**Result**	**Estimated Amount**
Sample Location:		Gasoline	< 25 mg/Kg by HCID	
Sampling Date:	10/10/2000	Diesel	< 50 mg/Kg by HCID	
Sampling Time:		Lube Oil	< 100 mg/Kg by HCID	
Date Received:	11/16/2000	*NWTPH-HCID Surrogate (Hexacosane) Percent Recovery*		70.5
Lab #:	29816-02	*Surrogate Acceptance Range: 50 - 150 %*		
Matrix:	SLUDGE			
Analysis Date:	11/16/2000	Comments:		

Lab Supervisor: _____

Report Date: 29-Nov-00

ND Not Detected PQL Practical Quantitation Limit

NWTPH-HCID Report Page 1 of 1

29816 WPPS **Due: 11/30/20**

SMPLD: 10/10/2000 CHUCK: 11/01/2000 RECVD: 11/16/20

ENERGY NORTHWEST *Environmental Services* *Analytical Laboratory*

Ship to: Environmental Sol
Columbia General
North Power Plant
Richland, WA 99352
Phone: 509-377-8068

Project 2121 HGP 100N AREA HANFORD RESERVATION SubLab #:7218

Richland, WA 99352
FAX: 509-377-8530

Customer contact: C. Welch / R. Castillo
Business name:
Address: H.G.P. (100N area Hanford Reservation)
Phone: (509) 373-2959 FAX: (509) 373-~~8659~~ 1351

Project ID: HGP

Order ID: 2121

Regulatory Authority: NPDES: ☐ Drinking water: ☐ Solid waste: ☐ Other: ☐

Requested Tests

Lab Use Only	Customer Sample ID (Unique identifier or code)	Collection Date	Collection Time	Matrix	Number of bottles	TCLP	Cd, Cr, Pb, Hg	8015 Petroleum Products	Comments
7218	Seal well sludge #2	10-10-00	1000	Sludge	1	X	X		Rich out of town
7219	Seal well sludge #1	10-10-00		Sludge	1	X	X		Spoke to Carol 11/6/00
									Says that in all
									thing had do that
									we can do.

	Signature	Date/Time		Signature
Collected/Relinquished by:	Chris Welch	11-14-00 / 1300	Received by:	[illegible]
Relinquished by:	Suzanne Parsons	11/15/00 1500	Received by:	
Relinquished by:	Margaret Hence			Signature
Laboratory receipt:	[illegible]	11/16/00 11am	Pre-log storage:	Date/Time

Sample Conditions at receipt:
Temperature (circle): Ambient Cool Frozen
Containers intact/lids tight: ☒
VOC vials without headspace: ☐
Labels match custody: ☒

Rev 10-05-00

Page 1 of 1

Distribution: Original with samples; customer receiving copy

E-5712

DOE/RL-2008-46-ADD5, REV. 0

CON_LONG_NAME	SAMP_NUM	OWNER_ID	WELL_NAME
Cyanide	B085H5	HEISPROD	199-N-86
Mercury	B085H5	HEISPROD	199-N-86
Lead	B085H5	HEISPROD	199-N-86
Thallium	B085H5	HEISPROD	199-N-86
Arsenic	B085H5	HEISPROD	199-N-86
Selenium	B085H5	HEISPROD	199-N-86
Aluminum	B085H5	HEISPROD	199-N-86
Iron	B085H5	HEISPROD	199-N-86
Magnesium	B085H5	HEISPROD	199-N-86
Manganese	B085H5	HEISPROD	199-N-86
Nickel	B085H5	HEISPROD	199-N-86
Potassium	B085H5	HEISPROD	199-N-86
Silver	B085H5	HEISPROD	199-N-86
Sodium	B085H5	HEISPROD	199-N-86
Antimony	B085H5	HEISPROD	199-N-86
Barium	B085H5	HEISPROD	199-N-86
Beryllium	B085H5	HEISPROD	199-N-86
Cadmium	B085H5	HEISPROD	199-N-86
Chromium	B085H5	HEISPROD	199-N-86
Cobalt	B085H5	HEISPROD	199-N-86
Copper	B085H5	HEISPROD	199-N-86
Vanadium	B085H5	HEISPROD	199-N-86
Zinc	B085H5	HEISPROD	199-N-86
Calcium	B085H5	HEISPROD	199-N-86
Heptachlor epoxide	B085H5	HEISPROD	199-N-86
Endosulfan sulfate	B085H5	HEISPROD	199-N-86
Aroclor-1260	B085H5	HEISPROD	199-N-86
Aroclor-1254	B085H5	HEISPROD	199-N-86
Aroclor-1221	B085H5	HEISPROD	199-N-86
Aroclor-1232	B085H5	HEISPROD	199-N-86
Aroclor-1248	B085H5	HEISPROD	199-N-86
Aroclor-1016	B085H5	HEISPROD	199-N-86
Aldrin	B085H5	HEISPROD	199-N-86
Alpha-BHC	B085H5	HEISPROD	199-N-86
beta-1,2,3,4,5,6-Hexachlorocyclohexane	B085H5	HEISPROD	199-N-86
Delta-BHC	B085H5	HEISPROD	199-N-86
Endosulfan II	B085H5	HEISPROD	199-N-86
Dichlorodiphenyltrichloroethane	B085H5	HEISPROD	199-N-86
alpha-Chlordane	B085H5	HEISPROD	199-N-86
gamma-Chlordane	B085H5	HEISPROD	199-N-86
Aroclor-1242	B085H5	HEISPROD	199-N-86
Endrin ketone	B085H5	HEISPROD	199-N-86
Gamma-BHC (Lindane)	B085H5	HEISPROD	199-N-86
Dieldrin	B085H5	HEISPROD	199-N-86
Endrin	B085H5	HEISPROD	199-N-86
Methoxychlor	B085H5	HEISPROD	199-N-86
Dichlorodiphenyldichloroethane	B085H5	HEISPROD	199-N-86
Dichlorodiphenyldichloroethylene	B085H5	HEISPROD	199-N-86
Endrin aldehyde	B085H5	HEISPROD	199-N-86
Heptachlor	B085H5	HEISPROD	199-N-86
Toxaphene	B085H5	HEISPROD	199-N-86

Endosulfan I	B085H5	HEISPROD	199-N-86
4-Nitroaniline	B085H5	HEISPROD	199-N-86
4-Nitrophenol	B085H5	HEISPROD	199-N-86
4-Bromophenylphenyl ether	B085H5	HEISPROD	199-N-86
2,4-Dimethylphenol	B085H5	HEISPROD	199-N-86
4-Methylphenol (cresol, p-)	B085H5	HEISPROD	199-N-86
1,4-Dichlorobenzene	B085H5	HEISPROD	199-N-86
4-Chloroaniline	B085H5	HEISPROD	199-N-86
Bis(2-chloro-1-methylethyl)ether	B085H5	HEISPROD	199-N-86
Phenol	B085H5	HEISPROD	199-N-86
Bis(2-chloroethyl) ether	B085H5	HEISPROD	199-N-86
Bis(2-Chloroethoxy)methane	B085H5	HEISPROD	199-N-86
Bis(2-ethylhexyl) phthalate	B085H5	HEISPROD	199-N-86
Di-n-octylphthalate	B085H5	HEISPROD	199-N-86
Hexachlorobenzene	B085H5	HEISPROD	199-N-86
Anthracene	B085H5	HEISPROD	199-N-86
1,2,4-Trichlorobenzene	B085H5	HEISPROD	199-N-86
2,4-Dichlorophenol	B085H5	HEISPROD	199-N-86
2,4-Dinitrotoluene	B085H5	HEISPROD	199-N-86
Pyrene	B085H5	HEISPROD	199-N-86
Dimethyl phthalate	B085H5	HEISPROD	199-N-86
Dibenzofuran	B085H5	HEISPROD	199-N-86
Benzo(ghi)perylene	B085H5	HEISPROD	199-N-86
Indeno(1,2,3-cd)pyrene	B085H5	HEISPROD	199-N-86
Benzo(b)fluoranthene	B085H5	HEISPROD	199-N-86
Fluoranthene	B085H5	HEISPROD	199-N-86
Benzo(k)fluoranthene	B085H5	HEISPROD	199-N-86
Acenaphthylene	B085H5	HEISPROD	199-N-86
Chrysene	B085H5	HEISPROD	199-N-86
Benzo(a)pyrene	B085H5	HEISPROD	199-N-86
2,4-Dinitrophenol	B085H5	HEISPROD	199-N-86
Dibenz[a,h]anthracene	B085H5	HEISPROD	199-N-86
4,6-Dinitro-2-methylphenol	B085H5	HEISPROD	199-N-86
1,3-Dichlorobenzene	B085H5	HEISPROD	199-N-86
Benzo(a)anthracene	B085H5	HEISPROD	199-N-86
4-Chloro-3-methylphenol	B085H5	HEISPROD	199-N-86
2,6-Dinitrotoluene	B085H5	HEISPROD	199-N-86
N-Nitroso-di-n-dipropylamine	B085H5	HEISPROD	199-N-86
Hexachloroethane	B085H5	HEISPROD	199-N-86
4-Chlorophenylphenyl ether	B085H5	HEISPROD	199-N-86
Hexachlorocyclopentadiene	B085H5	HEISPROD	199-N-86
Isophorone	B085H5	HEISPROD	199-N-86
Acenaphthene	B085H5	HEISPROD	199-N-86
Diethyl phthalate	B085H5	HEISPROD	199-N-86
Di-n-butylphthalate	B085H5	HEISPROD	199-N-86
Phenanthrene	B085H5	HEISPROD	199-N-86
Butylbenzylphthalate	B085H5	HEISPROD	199-N-86
N-Nitrosodiphenylamine	B085H5	HEISPROD	199-N-86
Fluorene	B085H5	HEISPROD	199-N-86
Carbazole	B085H5	HEISPROD	199-N-86
Hexachlorobutadiene	B085H5	HEISPROD	199-N-86
Pentachlorophenol	B085H5	HEISPROD	199-N-86

2,4,6-Trichlorophenol	B085H5	HEISPROD	199-N-86
2-Nitroaniline	B085H5	HEISPROD	199-N-86
2-Nitrophenol	B085H5	HEISPROD	199-N-86
Naphthalene	B085H5	HEISPROD	199-N-86
2-Methylnaphthalene	B085H5	HEISPROD	199-N-86
2-Chloronaphthalene	B085H5	HEISPROD	199-N-86
3,3'-Dichlorobenzidine	B085H5	HEISPROD	199-N-86
2-Methylphenol (cresol, o-)	B085H5	HEISPROD	199-N-86
1,2-Dichlorobenzene	B085H5	HEISPROD	199-N-86
2-Chlorophenol	B085H5	HEISPROD	199-N-86
2,4,5-Trichlorophenol	B085H5	HEISPROD	199-N-86
Nitrobenzene	B085H5	HEISPROD	199-N-86
3-Nitroaniline	B085H5	HEISPROD	199-N-86
Cesium-137	B085H5	HEISPROD	199-N-86
Cobalt-60	B085H5	HEISPROD	199-N-86
Potassium-40	B085H5	HEISPROD	199-N-86
Ruthenium-106	B085H5	HEISPROD	199-N-86
Cesium-134	B085H5	HEISPROD	199-N-86
Zinc-65	B085H5	HEISPROD	199-N-86
Radium-226	B085H5	HEISPROD	199-N-86
Thorium-228	B085H5	HEISPROD	199-N-86
Chromium-51	B085H5	HEISPROD	199-N-86
Iron-59	B085H5	HEISPROD	199-N-86
Europium-152	B085H5	HEISPROD	199-N-86
Cerium-144	B085H5	HEISPROD	199-N-86
Europium-154	B085H5	HEISPROD	199-N-86
Thorium-232	B085H5	HEISPROD	199-N-86
Strontium-90	B085H5	HEISPROD	199-N-86
Gross alpha	B085H5	HEISPROD	199-N-86
Gross beta	B085H5	HEISPROD	199-N-86
Plutonium-238	B085H5	HEISPROD	199-N-86
Americium-241	B085H5	HEISPROD	199-N-86
Carbon-14	B085H5	HEISPROD	199-N-86
Uranium-235	B085H5	HEISPROD	199-N-86
Plutonium-239/240	B085H5	HEISPROD	199-N-86
Uranium-233/234	B085H5	HEISPROD	199-N-86
Uranium-238	B085H5	HEISPROD	199-N-86
Cyanide	B085H6	HEISPROD	199-N-86
Mercury	B085H6	HEISPROD	199-N-86
Lead	B085H6	HEISPROD	199-N-86
Thallium	B085H6	HEISPROD	199-N-86
Arsenic	B085H6	HEISPROD	199-N-86
Selenium	B085H6	HEISPROD	199-N-86
Aluminum	B085H6	HEISPROD	199-N-86
Iron	B085H6	HEISPROD	199-N-86
Magnesium	B085H6	HEISPROD	199-N-86
Manganese	B085H6	HEISPROD	199-N-86
Nickel	B085H6	HEISPROD	199-N-86
Potassium	B085H6	HEISPROD	199-N-86
Silver	B085H6	HEISPROD	199-N-86
Sodium	B085H6	HEISPROD	199-N-86
Antimony	B085H6	HEISPROD	199-N-86

Barium	B085H6	HEISPROD	199-N-86
Beryllium	B085H6	HEISPROD	199-N-86
Cadmium	B085H6	HEISPROD	199-N-86
Chromium	B085H6	HEISPROD	199-N-86
Cobalt	B085H6	HEISPROD	199-N-86
Copper	B085H6	HEISPROD	199-N-86
Vanadium	B085H6	HEISPROD	199-N-86
Zinc	B085H6	HEISPROD	199-N-86
Calcium	B085H6	HEISPROD	199-N-86
Heptachlor epoxide	B085H6	HEISPROD	199-N-86
Endosulfan sulfate	B085H6	HEISPROD	199-N-86
Aroclor-1260	B085H6	HEISPROD	199-N-86
Aroclor-1254	B085H6	HEISPROD	199-N-86
Aroclor-1221	B085H6	HEISPROD	199-N-86
Aroclor-1232	B085H6	HEISPROD	199-N-86
Aroclor-1248	B085H6	HEISPROD	199-N-86
Aroclor-1016	B085H6	HEISPROD	199-N-86
Aldrin	B085H6	HEISPROD	199-N-86
Alpha-BHC	B085H6	HEISPROD	199-N-86
beta-1,2,3,4,5,6-Hexachlorocyclohexane	B085H6	HEISPROD	199-N-86
Delta-BHC	B085H6	HEISPROD	199-N-86
Endosulfan II	B085H6	HEISPROD	199-N-86
Dichlorodiphenyltrichloroethane	B085H6	HEISPROD	199-N-86
alpha-Chlordane	B085H6	HEISPROD	199-N-86
gamma-Chlordane	B085H6	HEISPROD	199-N-86
Aroclor-1242	B085H6	HEISPROD	199-N-86
Endrin ketone	B085H6	HEISPROD	199-N-86
Gamma-BHC (Lindane)	B085H6	HEISPROD	199-N-86
Dieldrin	B085H6	HEISPROD	199-N-86
Endrin	B085H6	HEISPROD	199-N-86
Methoxychlor	B085H6	HEISPROD	199-N-86
Dichlorodiphenyldichloroethane	B085H6	HEISPROD	199-N-86
Dichlorodiphenyldichloroethylene	B085H6	HEISPROD	199-N-86
Endrin aldehyde	B085H6	HEISPROD	199-N-86
Heptachlor	B085H6	HEISPROD	199-N-86
Toxaphene	B085H6	HEISPROD	199-N-86
Endosulfan I	B085H6	HEISPROD	199-N-86
4-Nitroaniline	B085H6	HEISPROD	199-N-86
4-Nitrophenol	B085H6	HEISPROD	199-N-86
4-Bromophenylphenyl ether	B085H6	HEISPROD	199-N-86
2,4-Dimethylphenol	B085H6	HEISPROD	199-N-86
4-Methylphenol (cresol, p-)	B085H6	HEISPROD	199-N-86
1,4-Dichlorobenzene	B085H6	HEISPROD	199-N-86
4-Chloroaniline	B085H6	HEISPROD	199-N-86
Bis(2-chloro-1-methylethyl)ether	B085H6	HEISPROD	199-N-86
Phenol	B085H6	HEISPROD	199-N-86
Bis(2-chloroethyl) ether	B085H6	HEISPROD	199-N-86
Bis(2-Chloroethoxy)methane	B085H6	HEISPROD	199-N-86
Bis(2-ethylhexyl) phthalate	B085H6	HEISPROD	199-N-86
Di-n-octylphthalate	B085H6	HEISPROD	199-N-86
Hexachlorobenzene	B085H6	HEISPROD	199-N-86
Anthracene	B085H6	HEISPROD	199-N-86

1,2,4-Trichlorobenzene	B085H6	HEISPROD	199-N-86
2,4-Dichlorophenol	B085H6	HEISPROD	199-N-86
2,4-Dinitrotoluene	B085H6	HEISPROD	199-N-86
Pyrene	B085H6	HEISPROD	199-N-86
Dimethyl phthalate	B085H6	HEISPROD	199-N-86
Dibenzofuran	B085H6	HEISPROD	199-N-86
Benzo(ghi)perylene	B085H6	HEISPROD	199-N-86
Indeno(1,2,3-cd)pyrene	B085H6	HEISPROD	199-N-86
Benzo(b)fluoranthene	B085H6	HEISPROD	199-N-86
Fluoranthene	B085H6	HEISPROD	199-N-86
Benzo(k)fluoranthene	B085H6	HEISPROD	199-N-86
Acenaphthylene	B085H6	HEISPROD	199-N-86
Chrysene	B085H6	HEISPROD	199-N-86
Benzo(a)pyrene	B085H6	HEISPROD	199-N-86
2,4-Dinitrophenol	B085H6	HEISPROD	199-N-86
Dibenz[a,h]anthracene	B085H6	HEISPROD	199-N-86
4,6-Dinitro-2-methylphenol	B085H6	HEISPROD	199-N-86
1,3-Dichlorobenzene	B085H6	HEISPROD	199-N-86
Benzo(a)anthracene	B085H6	HEISPROD	199-N-86
4-Chloro-3-methylphenol	B085H6	HEISPROD	199-N-86
2,6-Dinitrotoluene	B085H6	HEISPROD	199-N-86
N-Nitroso-di-n-dipropylamine	B085H6	HEISPROD	199-N-86
Hexachloroethane	B085H6	HEISPROD	199-N-86
4-Chlorophenylphenyl ether	B085H6	HEISPROD	199-N-86
Hexachlorocyclopentadiene	B085H6	HEISPROD	199-N-86
Isophorone	B085H6	HEISPROD	199-N-86
Acenaphthene	B085H6	HEISPROD	199-N-86
Diethyl phthalate	B085H6	HEISPROD	199-N-86
Di-n-butylphthalate	B085H6	HEISPROD	199-N-86
Phenanthrene	B085H6	HEISPROD	199-N-86
Butylbenzylphthalate	B085H6	HEISPROD	199-N-86
N-Nitrosodiphenylamine	B085H6	HEISPROD	199-N-86
Fluorene	B085H6	HEISPROD	199-N-86
Carbazole	B085H6	HEISPROD	199-N-86
Hexachlorobutadiene	B085H6	HEISPROD	199-N-86
Pentachlorophenol	B085H6	HEISPROD	199-N-86
2,4,6-Trichlorophenol	B085H6	HEISPROD	199-N-86
2-Nitroaniline	B085H6	HEISPROD	199-N-86
2-Nitrophenol	B085H6	HEISPROD	199-N-86
Naphthalene	B085H6	HEISPROD	199-N-86
2-Methylnaphthalene	B085H6	HEISPROD	199-N-86
2-Chloronaphthalene	B085H6	HEISPROD	199-N-86
3,3'-Dichlorobenzidine	B085H6	HEISPROD	199-N-86
2-Methylphenol (cresol, o-)	B085H6	HEISPROD	199-N-86
1,2-Dichlorobenzene	B085H6	HEISPROD	199-N-86
2-Chlorophenol	B085H6	HEISPROD	199-N-86
2,4,5-Trichlorophenol	B085H6	HEISPROD	199-N-86
Nitrobenzene	B085H6	HEISPROD	199-N-86
3-Nitroaniline	B085H6	HEISPROD	199-N-86
Cesium-137	B085H6	HEISPROD	199-N-86
Cobalt-60	B085H6	HEISPROD	199-N-86
Potassium-40	B085H6	HEISPROD	199-N-86

Ruthenium-106	B085H6	HEISPROD	199-N-86
Cesium-134	B085H6	HEISPROD	199-N-86
Zinc-65	B085H6	HEISPROD	199-N-86
Radium-226	B085H6	HEISPROD	199-N-86
Thorium-228	B085H6	HEISPROD	199-N-86
Chromium-51	B085H6	HEISPROD	199-N-86
Iron-59	B085H6	HEISPROD	199-N-86
Europium-152	B085H6	HEISPROD	199-N-86
Cerium-144	B085H6	HEISPROD	199-N-86
Europium-154	B085H6	HEISPROD	199-N-86
Thorium-232	B085H6	HEISPROD	199-N-86
Strontium-90	B085H6	HEISPROD	199-N-86
Gross alpha	B085H6	HEISPROD	199-N-86
Gross beta	B085H6	HEISPROD	199-N-86
Plutonium-238	B085H6	HEISPROD	199-N-86
Americium-241	B085H6	HEISPROD	199-N-86
Carbon-14	B085H6	HEISPROD	199-N-86
Uranium-235	B085H6	HEISPROD	199-N-86
Plutonium-239/240	B085H6	HEISPROD	199-N-86
Uranium-233/234	B085H6	HEISPROD	199-N-86
Uranium-238	B085H6	HEISPROD	199-N-86
Cyanide	B085H7	HEISPROD	199-N-86
Mercury	B085H7	HEISPROD	199-N-86
Lead	B085H7	HEISPROD	199-N-86
Thallium	B085H7	HEISPROD	199-N-86
Arsenic	B085H7	HEISPROD	199-N-86
Selenium	B085H7	HEISPROD	199-N-86
Aluminum	B085H7	HEISPROD	199-N-86
Iron	B085H7	HEISPROD	199-N-86
Magnesium	B085H7	HEISPROD	199-N-86
Manganese	B085H7	HEISPROD	199-N-86
Nickel	B085H7	HEISPROD	199-N-86
Potassium	B085H7	HEISPROD	199-N-86
Silver	B085H7	HEISPROD	199-N-86
Sodium	B085H7	HEISPROD	199-N-86
Antimony	B085H7	HEISPROD	199-N-86
Barium	B085H7	HEISPROD	199-N-86
Beryllium	B085H7	HEISPROD	199-N-86
Cadmium	B085H7	HEISPROD	199-N-86
Chromium	B085H7	HEISPROD	199-N-86
Cobalt	B085H7	HEISPROD	199-N-86
Copper	B085H7	HEISPROD	199-N-86
Vanadium	B085H7	HEISPROD	199-N-86
Zinc	B085H7	HEISPROD	199-N-86
Calcium	B085H7	HEISPROD	199-N-86
Heptachlor epoxide	B085H7	HEISPROD	199-N-86
Endosulfan sulfate	B085H7	HEISPROD	199-N-86
Aroclor-1260	B085H7	HEISPROD	199-N-86
Aroclor-1254	B085H7	HEISPROD	199-N-86
Aroclor-1221	B085H7	HEISPROD	199-N-86
Aroclor-1232	B085H7	HEISPROD	199-N-86
Aroclor-1248	B085H7	HEISPROD	199-N-86

Aroclor-1016	B085H7	HEISPROD	199-N-86
Aldrin	B085H7	HEISPROD	199-N-86
Alpha-BHC	B085H7	HEISPROD	199-N-86
beta-1,2,3,4,5,6-Hexachlorocyclohexane	B085H7	HEISPROD	199-N-86
Delta-BHC	B085H7	HEISPROD	199-N-86
Endosulfan II	B085H7	HEISPROD	199-N-86
Dichlorodiphenyltrichloroethane	B085H7	HEISPROD	199-N-86
alpha-Chlordane	B085H7	HEISPROD	199-N-86
gamma-Chlordane	B085H7	HEISPROD	199-N-86
Aroclor-1242	B085H7	HEISPROD	199-N-86
Endrin ketone	B085H7	HEISPROD	199-N-86
Gamma-BHC (Lindane)	B085H7	HEISPROD	199-N-86
Dieldrin	B085H7	HEISPROD	199-N-86
Endrin	B085H7	HEISPROD	199-N-86
Methoxychlor	B085H7	HEISPROD	199-N-86
Dichlorodiphenyldichloroethane	B085H7	HEISPROD	199-N-86
Dichlorodiphenyldichloroethylene	B085H7	HEISPROD	199-N-86
Endrin aldehyde	B085H7	HEISPROD	199-N-86
Heptachlor	B085H7	HEISPROD	199-N-86
Toxaphene	B085H7	HEISPROD	199-N-86
Endosulfan I	B085H7	HEISPROD	199-N-86
4-Nitroaniline	B085H7	HEISPROD	199-N-86
4-Nitrophenol	B085H7	HEISPROD	199-N-86
4-Bromophenylphenyl ether	B085H7	HEISPROD	199-N-86
2,4-Dimethylphenol	B085H7	HEISPROD	199-N-86
4-Methylphenol (cresol, p-)	B085H7	HEISPROD	199-N-86
1,4-Dichlorobenzene	B085H7	HEISPROD	199-N-86
4-Chloroaniline	B085H7	HEISPROD	199-N-86
Bis(2-chloro-1-methylethyl)ether	B085H7	HEISPROD	199-N-86
Phenol	B085H7	HEISPROD	199-N-86
Bis(2-chloroethyl) ether	B085H7	HEISPROD	199-N-86
Bis(2-Chloroethoxy)methane	B085H7	HEISPROD	199-N-86
Bis(2-ethylhexyl) phthalate	B085H7	HEISPROD	199-N-86
Di-n-octylphthalate	B085H7	HEISPROD	199-N-86
Hexachlorobenzene	B085H7	HEISPROD	199-N-86
Anthracene	B085H7	HEISPROD	199-N-86
1,2,4-Trichlorobenzene	B085H7	HEISPROD	199-N-86
2,4-Dichlorophenol	B085H7	HEISPROD	199-N-86
2,4-Dinitrotoluene	B085H7	HEISPROD	199-N-86
Pyrene	B085H7	HEISPROD	199-N-86
Dimethyl phthalate	B085H7	HEISPROD	199-N-86
Dibenzofuran	B085H7	HEISPROD	199-N-86
Benzo(ghi)perylene	B085H7	HEISPROD	199-N-86
Indeno(1,2,3-cd)pyrene	B085H7	HEISPROD	199-N-86
Benzo(b)fluoranthene	B085H7	HEISPROD	199-N-86
Fluoranthene	B085H7	HEISPROD	199-N-86
Benzo(k)fluoranthene	B085H7	HEISPROD	199-N-86
Acenaphthylene	B085H7	HEISPROD	199-N-86
Chrysene	B085H7	HEISPROD	199-N-86
Benzo(a)pyrene	B085H7	HEISPROD	199-N-86
2,4-Dinitrophenol	B085H7	HEISPROD	199-N-86
Dibenz[a,h]anthracene	B085H7	HEISPROD	199-N-86

4,6-Dinitro-2-methylphenol	B085H7	HEISPROD	199-N-86
1,3-Dichlorobenzene	B085H7	HEISPROD	199-N-86
Benzo(a)anthracene	B085H7	HEISPROD	199-N-86
4-Chloro-3-methylphenol	B085H7	HEISPROD	199-N-86
2,6-Dinitrotoluene	B085H7	HEISPROD	199-N-86
N-Nitroso-di-n-dipropylamine	B085H7	HEISPROD	199-N-86
Hexachloroethane	B085H7	HEISPROD	199-N-86
4-Chlorophenylphenyl ether	B085H7	HEISPROD	199-N-86
Hexachlorocyclopentadiene	B085H7	HEISPROD	199-N-86
Isophorone	B085H7	HEISPROD	199-N-86
Acenaphthene	B085H7	HEISPROD	199-N-86
Diethyl phthalate	B085H7	HEISPROD	199-N-86
Di-n-butylphthalate	B085H7	HEISPROD	199-N-86
Phenanthrene	B085H7	HEISPROD	199-N-86
Butylbenzylphthalate	B085H7	HEISPROD	199-N-86
N-Nitrosodiphenylamine	B085H7	HEISPROD	199-N-86
Fluorene	B085H7	HEISPROD	199-N-86
Carbazole	B085H7	HEISPROD	199-N-86
Hexachlorobutadiene	B085H7	HEISPROD	199-N-86
Pentachlorophenol	B085H7	HEISPROD	199-N-86
2,4,6-Trichlorophenol	B085H7	HEISPROD	199-N-86
2-Nitroaniline	B085H7	HEISPROD	199-N-86
2-Nitrophenol	B085H7	HEISPROD	199-N-86
Naphthalene	B085H7	HEISPROD	199-N-86
2-Methylnaphthalene	B085H7	HEISPROD	199-N-86
2-Chloronaphthalene	B085H7	HEISPROD	199-N-86
3,3'-Dichlorobenzidine	B085H7	HEISPROD	199-N-86
2-Methylphenol (cresol, o-)	B085H7	HEISPROD	199-N-86
1,2-Dichlorobenzene	B085H7	HEISPROD	199-N-86
2-Chlorophenol	B085H7	HEISPROD	199-N-86
2,4,5-Trichlorophenol	B085H7	HEISPROD	199-N-86
Nitrobenzene	B085H7	HEISPROD	199-N-86
3-Nitroaniline	B085H7	HEISPROD	199-N-86
Cesium-137	B085H7	HEISPROD	199-N-86
Cobalt-60	B085H7	HEISPROD	199-N-86
Potassium-40	B085H7	HEISPROD	199-N-86
Ruthenium-106	B085H7	HEISPROD	199-N-86
Cesium-134	B085H7	HEISPROD	199-N-86
Zinc-65	B085H7	HEISPROD	199-N-86
Radium-226	B085H7	HEISPROD	199-N-86
Thorium-228	B085H7	HEISPROD	199-N-86
Chromium-51	B085H7	HEISPROD	199-N-86
Iron-59	B085H7	HEISPROD	199-N-86
Europium-152	B085H7	HEISPROD	199-N-86
Cerium-144	B085H7	HEISPROD	199-N-86
Europium-154	B085H7	HEISPROD	199-N-86
Thorium-232	B085H7	HEISPROD	199-N-86
Strontium-90	B085H7	HEISPROD	199-N-86
Gross alpha	B085H7	HEISPROD	199-N-86
Gross beta	B085H7	HEISPROD	199-N-86
Plutonium-238	B085H7	HEISPROD	199-N-86
Americium-241	B085H7	HEISPROD	199-N-86

Carbon-14	B085H7	HEISPROD	199-N-86
Uranium-235	B085H7	HEISPROD	199-N-86
Plutonium-239/240	B085H7	HEISPROD	199-N-86
Uranium-233/234	B085H7	HEISPROD	199-N-86
Uranium-238	B085H7	HEISPROD	199-N-86
Cyanide	B085H8	HEISPROD	199-N-86
Mercury	B085H8	HEISPROD	199-N-86
Lead	B085H8	HEISPROD	199-N-86
Thallium	B085H8	HEISPROD	199-N-86
Arsenic	B085H8	HEISPROD	199-N-86
Selenium	B085H8	HEISPROD	199-N-86
Aluminum	B085H8	HEISPROD	199-N-86
Iron	B085H8	HEISPROD	199-N-86
Magnesium	B085H8	HEISPROD	199-N-86
Manganese	B085H8	HEISPROD	199-N-86
Nickel	B085H8	HEISPROD	199-N-86
Potassium	B085H8	HEISPROD	199-N-86
Silver	B085H8	HEISPROD	199-N-86
Sodium	B085H8	HEISPROD	199-N-86
Antimony	B085H8	HEISPROD	199-N-86
Barium	B085H8	HEISPROD	199-N-86
Beryllium	B085H8	HEISPROD	199-N-86
Cadmium	B085H8	HEISPROD	199-N-86
Chromium	B085H8	HEISPROD	199-N-86
Cobalt	B085H8	HEISPROD	199-N-86
Copper	B085H8	HEISPROD	199-N-86
Vanadium	B085H8	HEISPROD	199-N-86
Zinc	B085H8	HEISPROD	199-N-86
Calcium	B085H8	HEISPROD	199-N-86
Heptachlor epoxide	B085H8	HEISPROD	199-N-86
Endosulfan sulfate	B085H8	HEISPROD	199-N-86
Aroclor-1260	B085H8	HEISPROD	199-N-86
Aroclor-1254	B085H8	HEISPROD	199-N-86
Aroclor-1221	B085H8	HEISPROD	199-N-86
Aroclor-1232	B085H8	HEISPROD	199-N-86
Aroclor-1248	B085H8	HEISPROD	199-N-86
Aroclor-1016	B085H8	HEISPROD	199-N-86
Aldrin	B085H8	HEISPROD	199-N-86
Alpha-BHC	B085H8	HEISPROD	199-N-86
beta-1,2,3,4,5,6-Hexachlorocyclohexane	B085H8	HEISPROD	199-N-86
Delta-BHC	B085H8	HEISPROD	199-N-86
Endosulfan II	B085H8	HEISPROD	199-N-86
Dichlorodiphenyltrichloroethane	B085H8	HEISPROD	199-N-86
alpha-Chlordane	B085H8	HEISPROD	199-N-86
gamma-Chlordane	B085H8	HEISPROD	199-N-86
Aroclor-1242	B085H8	HEISPROD	199-N-86
Endrin ketone	B085H8	HEISPROD	199-N-86
Gamma-BHC (Lindane)	B085H8	HEISPROD	199-N-86
Dieldrin	B085H8	HEISPROD	199-N-86
Endrin	B085H8	HEISPROD	199-N-86
Methoxychlor	B085H8	HEISPROD	199-N-86
Dichlorodiphenyldichloroethane	B085H8	HEISPROD	199-N-86

Dichlorodiphenyldichloroethylene	B085H8	HEISPROD	199-N-86
Endrin aldehyde	B085H8	HEISPROD	199-N-86
Heptachlor	B085H8	HEISPROD	199-N-86
Toxaphene	B085H8	HEISPROD	199-N-86
Endosulfan I	B085H8	HEISPROD	199-N-86
4-Nitroaniline	B085H8	HEISPROD	199-N-86
4-Nitrophenol	B085H8	HEISPROD	199-N-86
4-Bromophenylphenyl ether	B085H8	HEISPROD	199-N-86
2,4-Dimethylphenol	B085H8	HEISPROD	199-N-86
4-Methylphenol (cresol, p-)	B085H8	HEISPROD	199-N-86
1,4-Dichlorobenzene	B085H8	HEISPROD	199-N-86
4-Chloroaniline	B085H8	HEISPROD	199-N-86
Bis(2-chloro-1-methylethyl)ether	B085H8	HEISPROD	199-N-86
Phenol	B085H8	HEISPROD	199-N-86
Bis(2-chloroethyl) ether	B085H8	HEISPROD	199-N-86
Bis(2-Chloroethoxy)methane	B085H8	HEISPROD	199-N-86
Bis(2-ethylhexyl) phthalate	B085H8	HEISPROD	199-N-86
Di-n-octylphthalate	B085H8	HEISPROD	199-N-86
Hexachlorobenzene	B085H8	HEISPROD	199-N-86
Anthracene	B085H8	HEISPROD	199-N-86
1,2,4-Trichlorobenzene	B085H8	HEISPROD	199-N-86
2,4-Dichlorophenol	B085H8	HEISPROD	199-N-86
2,4-Dinitrotoluene	B085H8	HEISPROD	199-N-86
Pyrene	B085H8	HEISPROD	199-N-86
Dimethyl phthalate	B085H8	HEISPROD	199-N-86
Dibenzofuran	B085H8	HEISPROD	199-N-86
Benzo(ghi)perylene	B085H8	HEISPROD	199-N-86
Indeno(1,2,3-cd)pyrene	B085H8	HEISPROD	199-N-86
Benzo(b)fluoranthene	B085H8	HEISPROD	199-N-86
Fluoranthene	B085H8	HEISPROD	199-N-86
Benzo(k)fluoranthene	B085H8	HEISPROD	199-N-86
Acenaphthylene	B085H8	HEISPROD	199-N-86
Chrysene	B085H8	HEISPROD	199-N-86
Benzo(a)pyrene	B085H8	HEISPROD	199-N-86
2,4-Dinitrophenol	B085H8	HEISPROD	199-N-86
Dibenz[a,h]anthracene	B085H8	HEISPROD	199-N-86
4,6-Dinitro-2-methylphenol	B085H8	HEISPROD	199-N-86
1,3-Dichlorobenzene	B085H8	HEISPROD	199-N-86
Benzo(a)anthracene	B085H8	HEISPROD	199-N-86
4-Chloro-3-methylphenol	B085H8	HEISPROD	199-N-86
2,6-Dinitrotoluene	B085H8	HEISPROD	199-N-86
N-Nitroso-di-n-dipropylamine	B085H8	HEISPROD	199-N-86
Hexachloroethane	B085H8	HEISPROD	199-N-86
4-Chlorophenylphenyl ether	B085H8	HEISPROD	199-N-86
Hexachlorocyclopentadiene	B085H8	HEISPROD	199-N-86
Isophorone	B085H8	HEISPROD	199-N-86
Acenaphthene	B085H8	HEISPROD	199-N-86
Diethyl phthalate	B085H8	HEISPROD	199-N-86
Di-n-butylphthalate	B085H8	HEISPROD	199-N-86
Phenanthrene	B085H8	HEISPROD	199-N-86
Butylbenzylphthalate	B085H8	HEISPROD	199-N-86
N-Nitrosodiphenylamine	B085H8	HEISPROD	199-N-86

Fluorene	B085H8	HEISPROD	199-N-86
Carbazole	B085H8	HEISPROD	199-N-86
Hexachlorobutadiene	B085H8	HEISPROD	199-N-86
Pentachlorophenol	B085H8	HEISPROD	199-N-86
2,4,6-Trichlorophenol	B085H8	HEISPROD	199-N-86
2-Nitroaniline	B085H8	HEISPROD	199-N-86
2-Nitrophenol	B085H8	HEISPROD	199-N-86
Naphthalene	B085H8	HEISPROD	199-N-86
2-Methylnaphthalene	B085H8	HEISPROD	199-N-86
2-Chloronaphthalene	B085H8	HEISPROD	199-N-86
3,3'-Dichlorobenzidine	B085H8	HEISPROD	199-N-86
2-Methylphenol (cresol, o-)	B085H8	HEISPROD	199-N-86
1,2-Dichlorobenzene	B085H8	HEISPROD	199-N-86
2-Chlorophenol	B085H8	HEISPROD	199-N-86
2,4,5-Trichlorophenol	B085H8	HEISPROD	199-N-86
Nitrobenzene	B085H8	HEISPROD	199-N-86
3-Nitroaniline	B085H8	HEISPROD	199-N-86
Iodine-131	B085H8	HEISPROD	199-N-86
Cesium-137	B085H8	HEISPROD	199-N-86
Cobalt-60	B085H8	HEISPROD	199-N-86
Potassium-40	B085H8	HEISPROD	199-N-86
Beryllium-7	B085H8	HEISPROD	199-N-86
Manganese-54	B085H8	HEISPROD	199-N-86
Ruthenium-106	B085H8	HEISPROD	199-N-86
Cesium-134	B085H8	HEISPROD	199-N-86
Zirconium-95	B085H8	HEISPROD	199-N-86
Cerium-141	B085H8	HEISPROD	199-N-86
Ruthenium-103	B085H8	HEISPROD	199-N-86
Cobalt-58	B085H8	HEISPROD	199-N-86
Zinc-65	B085H8	HEISPROD	199-N-86
Radium-226	B085H8	HEISPROD	199-N-86
Thorium-228	B085H8	HEISPROD	199-N-86
Europium-155	B085H8	HEISPROD	199-N-86
Iron-59	B085H8	HEISPROD	199-N-86
Europium-152	B085H8	HEISPROD	199-N-86
Cerium-144	B085H8	HEISPROD	199-N-86
Barium-140	B085H8	HEISPROD	199-N-86
Thorium-234	B085H8	HEISPROD	199-N-86
Europium-154	B085H8	HEISPROD	199-N-86
Strontium-90	B085H8	HEISPROD	199-N-86
Gross alpha	B085H8	HEISPROD	199-N-86
Gross beta	B085H8	HEISPROD	199-N-86
Americium-241	B085H8	HEISPROD	199-N-86
Carbon-14	B085H8	HEISPROD	199-N-86
Plutonium-239	B085H8	HEISPROD	199-N-86
Uranium-235	B085H8	HEISPROD	199-N-86
Uranium-238	B085H8	HEISPROD	199-N-86
Cyanide	B085H9	HEISPROD	199-N-86
Mercury	B085H9	HEISPROD	199-N-86
Lead	B085H9	HEISPROD	199-N-86
Thallium	B085H9	HEISPROD	199-N-86
Arsenic	B085H9	HEISPROD	199-N-86

Selenium	B085H9	HEISPROD	199-N-86
Aluminum	B085H9	HEISPROD	199-N-86
Iron	B085H9	HEISPROD	199-N-86
Magnesium	B085H9	HEISPROD	199-N-86
Manganese	B085H9	HEISPROD	199-N-86
Nickel	B085H9	HEISPROD	199-N-86
Potassium	B085H9	HEISPROD	199-N-86
Silver	B085H9	HEISPROD	199-N-86
Sodium	B085H9	HEISPROD	199-N-86
Antimony	B085H9	HEISPROD	199-N-86
Barium	B085H9	HEISPROD	199-N-86
Beryllium	B085H9	HEISPROD	199-N-86
Cadmium	B085H9	HEISPROD	199-N-86
Chromium	B085H9	HEISPROD	199-N-86
Cobalt	B085H9	HEISPROD	199-N-86
Copper	B085H9	HEISPROD	199-N-86
Vanadium	B085H9	HEISPROD	199-N-86
Zinc	B085H9	HEISPROD	199-N-86
Calcium	B085H9	HEISPROD	199-N-86
Heptachlor epoxide	B085H9	HEISPROD	199-N-86
Endosulfan sulfate	B085H9	HEISPROD	199-N-86
Aroclor-1260	B085H9	HEISPROD	199-N-86
Aroclor-1254	B085H9	HEISPROD	199-N-86
Aroclor-1221	B085H9	HEISPROD	199-N-86
Aroclor-1232	B085H9	HEISPROD	199-N-86
Aroclor-1248	B085H9	HEISPROD	199-N-86
Aroclor-1016	B085H9	HEISPROD	199-N-86
Aldrin	B085H9	HEISPROD	199-N-86
Alpha-BHC	B085H9	HEISPROD	199-N-86
beta-1,2,3,4,5,6-Hexachlorocyclohexane	B085H9	HEISPROD	199-N-86
Delta-BHC	B085H9	HEISPROD	199-N-86
Endosulfan II	B085H9	HEISPROD	199-N-86
Dichlorodiphenyltrichloroethane	B085H9	HEISPROD	199-N-86
alpha-Chlordane	B085H9	HEISPROD	199-N-86
gamma-Chlordane	B085H9	HEISPROD	199-N-86
Aroclor-1242	B085H9	HEISPROD	199-N-86
Endrin ketone	B085H9	HEISPROD	199-N-86
Gamma-BHC (Lindane)	B085H9	HEISPROD	199-N-86
Dieldrin	B085H9	HEISPROD	199-N-86
Endrin	B085H9	HEISPROD	199-N-86
Methoxychlor	B085H9	HEISPROD	199-N-86
Dichlorodiphenyldichloroethane	B085H9	HEISPROD	199-N-86
Dichlorodiphenyldichloroethylene	B085H9	HEISPROD	199-N-86
Endrin aldehyde	B085H9	HEISPROD	199-N-86
Heptachlor	B085H9	HEISPROD	199-N-86
Toxaphene	B085H9	HEISPROD	199-N-86
Endosulfan I	B085H9	HEISPROD	199-N-86
4-Nitroaniline	B085H9	HEISPROD	199-N-86
4-Nitrophenol	B085H9	HEISPROD	199-N-86
4-Bromophenylphenyl ether	B085H9	HEISPROD	199-N-86
2,4-Dimethylphenol	B085H9	HEISPROD	199-N-86
4-Methylphenol (cresol, p-)	B085H9	HEISPROD	199-N-86

1,4-Dichlorobenzene	B085H9	HEISPROD	199-N-86
4-Chloroaniline	B085H9	HEISPROD	199-N-86
Bis(2-chloro-1-methylethyl)ether	B085H9	HEISPROD	199-N-86
Phenol	B085H9	HEISPROD	199-N-86
Bis(2-chloroethyl) ether	B085H9	HEISPROD	199-N-86
Bis(2-Chloroethoxy)methane	B085H9	HEISPROD	199-N-86
Bis(2-ethylhexyl) phthalate	B085H9	HEISPROD	199-N-86
Di-n-octylphthalate	B085H9	HEISPROD	199-N-86
Hexachlorobenzene	B085H9	HEISPROD	199-N-86
Anthracene	B085H9	HEISPROD	199-N-86
1,2,4-Trichlorobenzene	B085H9	HEISPROD	199-N-86
2,4-Dichlorophenol	B085H9	HEISPROD	199-N-86
2,4-Dinitrotoluene	B085H9	HEISPROD	199-N-86
Pyrene	B085H9	HEISPROD	199-N-86
Dimethyl phthalate	B085H9	HEISPROD	199-N-86
Dibenzofuran	B085H9	HEISPROD	199-N-86
Benzo(ghi)perylene	B085H9	HEISPROD	199-N-86
Indeno(1,2,3-cd)pyrene	B085H9	HEISPROD	199-N-86
Benzo(b)fluoranthene	B085H9	HEISPROD	199-N-86
Fluoranthene	B085H9	HEISPROD	199-N-86
Benzo(k)fluoranthene	B085H9	HEISPROD	199-N-86
Acenaphthylene	B085H9	HEISPROD	199-N-86
Chrysene	B085H9	HEISPROD	199-N-86
Benzo(a)pyrene	B085H9	HEISPROD	199-N-86
2,4-Dinitrophenol	B085H9	HEISPROD	199-N-86
Dibenz[a,h]anthracene	B085H9	HEISPROD	199-N-86
4,6-Dinitro-2-methylphenol	B085H9	HEISPROD	199-N-86
1,3-Dichlorobenzene	B085H9	HEISPROD	199-N-86
Benzo(a)anthracene	B085H9	HEISPROD	199-N-86
4-Chloro-3-methylphenol	B085H9	HEISPROD	199-N-86
2,6-Dinitrotoluene	B085H9	HEISPROD	199-N-86
N-Nitroso-di-n-dipropylamine	B085H9	HEISPROD	199-N-86
Hexachloroethane	B085H9	HEISPROD	199-N-86
4-Chlorophenylphenyl ether	B085H9	HEISPROD	199-N-86
Hexachlorocyclopentadiene	B085H9	HEISPROD	199-N-86
Isophorone	B085H9	HEISPROD	199-N-86
Acenaphthene	B085H9	HEISPROD	199-N-86
Diethyl phthalate	B085H9	HEISPROD	199-N-86
Di-n-butylphthalate	B085H9	HEISPROD	199-N-86
Phenanthrene	B085H9	HEISPROD	199-N-86
Butylbenzylphthalate	B085H9	HEISPROD	199-N-86
N-Nitrosodiphenylamine	B085H9	HEISPROD	199-N-86
Fluorene	B085H9	HEISPROD	199-N-86
Carbazole	B085H9	HEISPROD	199-N-86
Hexachlorobutadiene	B085H9	HEISPROD	199-N-86
Pentachlorophenol	B085H9	HEISPROD	199-N-86
2,4,6-Trichlorophenol	B085H9	HEISPROD	199-N-86
2-Nitroaniline	B085H9	HEISPROD	199-N-86
2-Nitrophenol	B085H9	HEISPROD	199-N-86
Naphthalene	B085H9	HEISPROD	199-N-86
2-Methylnaphthalene	B085H9	HEISPROD	199-N-86
2-Chloronaphthalene	B085H9	HEISPROD	199-N-86

3,3'-Dichlorobenzidine	B085H9	HEISPROD	199-N-86
2-Methylphenol (cresol, o-)	B085H9	HEISPROD	199-N-86
1,2-Dichlorobenzene	B085H9	HEISPROD	199-N-86
2-Chlorophenol	B085H9	HEISPROD	199-N-86
2,4,5-Trichlorophenol	B085H9	HEISPROD	199-N-86
Nitrobenzene	B085H9	HEISPROD	199-N-86
3-Nitroaniline	B085H9	HEISPROD	199-N-86
Cesium-137	B085H9	HEISPROD	199-N-86
Cobalt-60	B085H9	HEISPROD	199-N-86
Potassium-40	B085H9	HEISPROD	199-N-86
Ruthenium-106	B085H9	HEISPROD	199-N-86
Cesium-134	B085H9	HEISPROD	199-N-86
Zinc-65	B085H9	HEISPROD	199-N-86
Radium-226	B085H9	HEISPROD	199-N-86
Thorium-228	B085H9	HEISPROD	199-N-86
Chromium-51	B085H9	HEISPROD	199-N-86
Iron-59	B085H9	HEISPROD	199-N-86
Europium-152	B085H9	HEISPROD	199-N-86
Cerium-144	B085H9	HEISPROD	199-N-86
Europium-154	B085H9	HEISPROD	199-N-86
Thorium-232	B085H9	HEISPROD	199-N-86
Strontium-90	B085H9	HEISPROD	199-N-86
Gross alpha	B085H9	HEISPROD	199-N-86
Gross beta	B085H9	HEISPROD	199-N-86
Plutonium-238	B085H9	HEISPROD	199-N-86
Americium-241	B085H9	HEISPROD	199-N-86
Carbon-14	B085H9	HEISPROD	199-N-86
Uranium-235	B085H9	HEISPROD	199-N-86
Plutonium-239/240	B085H9	HEISPROD	199-N-86
Uranium-233/234	B085H9	HEISPROD	199-N-86
Uranium-238	B085H9	HEISPROD	199-N-86
Cyanide	B085J0	HEISPROD	199-N-86
Mercury	B085J0	HEISPROD	199-N-86
Lead	B085J0	HEISPROD	199-N-86
Thallium	B085J0	HEISPROD	199-N-86
Arsenic	B085J0	HEISPROD	199-N-86
Selenium	B085J0	HEISPROD	199-N-86
Aluminum	B085J0	HEISPROD	199-N-86
Iron	B085J0	HEISPROD	199-N-86
Magnesium	B085J0	HEISPROD	199-N-86
Manganese	B085J0	HEISPROD	199-N-86
Nickel	B085J0	HEISPROD	199-N-86
Potassium	B085J0	HEISPROD	199-N-86
Silver	B085J0	HEISPROD	199-N-86
Sodium	B085J0	HEISPROD	199-N-86
Antimony	B085J0	HEISPROD	199-N-86
Barium	B085J0	HEISPROD	199-N-86
Beryllium	B085J0	HEISPROD	199-N-86
Cadmium	B085J0	HEISPROD	199-N-86
Chromium	B085J0	HEISPROD	199-N-86
Cobalt	B085J0	HEISPROD	199-N-86
Copper	B085J0	HEISPROD	199-N-86

Vanadium	B085J0	HEISPROD	199-N-86
Zinc	B085J0	HEISPROD	199-N-86
Calcium	B085J0	HEISPROD	199-N-86
Heptachlor epoxide	B085J0	HEISPROD	199-N-86
Endosulfan sulfate	B085J0	HEISPROD	199-N-86
Aroclor-1260	B085J0	HEISPROD	199-N-86
Aroclor-1254	B085J0	HEISPROD	199-N-86
Aroclor-1221	B085J0	HEISPROD	199-N-86
Aroclor-1232	B085J0	HEISPROD	199-N-86
Aroclor-1248	B085J0	HEISPROD	199-N-86
Aroclor-1016	B085J0	HEISPROD	199-N-86
Aldrin	B085J0	HEISPROD	199-N-86
Alpha-BHC	B085J0	HEISPROD	199-N-86
beta-1,2,3,4,5,6-Hexachlorocyclohexane	B085J0	HEISPROD	199-N-86
Delta-BHC	B085J0	HEISPROD	199-N-86
Endosulfan II	B085J0	HEISPROD	199-N-86
Dichlorodiphenyltrichloroethane	B085J0	HEISPROD	199-N-86
alpha-Chlordane	B085J0	HEISPROD	199-N-86
gamma-Chlordane	B085J0	HEISPROD	199-N-86
Aroclor-1242	B085J0	HEISPROD	199-N-86
Endrin ketone	B085J0	HEISPROD	199-N-86
Gamma-BHC (Lindane)	B085J0	HEISPROD	199-N-86
Dieldrin	B085J0	HEISPROD	199-N-86
Endrin	B085J0	HEISPROD	199-N-86
Methoxychlor	B085J0	HEISPROD	199-N-86
Dichlorodiphenyldichloroethane	B085J0	HEISPROD	199-N-86
Dichlorodiphenyldichloroethylene	B085J0	HEISPROD	199-N-86
Endrin aldehyde	B085J0	HEISPROD	199-N-86
Heptachlor	B085J0	HEISPROD	199-N-86
Toxaphene	B085J0	HEISPROD	199-N-86
Endosulfan I	B085J0	HEISPROD	199-N-86
4-Nitroaniline	B085J0	HEISPROD	199-N-86
4-Nitrophenol	B085J0	HEISPROD	199-N-86
4-Bromophenylphenyl ether	B085J0	HEISPROD	199-N-86
2,4-Dimethylphenol	B085J0	HEISPROD	199-N-86
4-Methylphenol (cresol, p-)	B085J0	HEISPROD	199-N-86
1,4-Dichlorobenzene	B085J0	HEISPROD	199-N-86
4-Chloroaniline	B085J0	HEISPROD	199-N-86
Bis(2-chloro-1-methylethyl)ether	B085J0	HEISPROD	199-N-86
Phenol	B085J0	HEISPROD	199-N-86
Bis(2-chloroethyl) ether	B085J0	HEISPROD	199-N-86
Bis(2-Chloroethoxy)methane	B085J0	HEISPROD	199-N-86
Bis(2-ethylhexyl) phthalate	B085J0	HEISPROD	199-N-86
Di-n-octylphthalate	B085J0	HEISPROD	199-N-86
Hexachlorobenzene	B085J0	HEISPROD	199-N-86
Anthracene	B085J0	HEISPROD	199-N-86
1,2,4-Trichlorobenzene	B085J0	HEISPROD	199-N-86
2,4-Dichlorophenol	B085J0	HEISPROD	199-N-86
2,4-Dinitrotoluene	B085J0	HEISPROD	199-N-86
Pyrene	B085J0	HEISPROD	199-N-86
Dimethyl phthalate	B085J0	HEISPROD	199-N-86
Dibenzofuran	B085J0	HEISPROD	199-N-86

Benzo(ghi)perylene	B085J0	HEISPROD	199-N-86
Indeno(1,2,3-cd)pyrene	B085J0	HEISPROD	199-N-86
Benzo(b)fluoranthene	B085J0	HEISPROD	199-N-86
Fluoranthene	B085J0	HEISPROD	199-N-86
Benzo(k)fluoranthene	B085J0	HEISPROD	199-N-86
Acenaphthylene	B085J0	HEISPROD	199-N-86
Chrysene	B085J0	HEISPROD	199-N-86
Benzo(a)pyrene	B085J0	HEISPROD	199-N-86
2,4-Dinitrophenol	B085J0	HEISPROD	199-N-86
Dibenz[a,h]anthracene	B085J0	HEISPROD	199-N-86
4,6-Dinitro-2-methylphenol	B085J0	HEISPROD	199-N-86
1,3-Dichlorobenzene	B085J0	HEISPROD	199-N-86
Benzo(a)anthracene	B085J0	HEISPROD	199-N-86
4-Chloro-3-methylphenol	B085J0	HEISPROD	199-N-86
2,6-Dinitrotoluene	B085J0	HEISPROD	199-N-86
N-Nitroso-di-n-dipropylamine	B085J0	HEISPROD	199-N-86
Hexachloroethane	B085J0	HEISPROD	199-N-86
4-Chlorophenylphenyl ether	B085J0	HEISPROD	199-N-86
Hexachlorocyclopentadiene	B085J0	HEISPROD	199-N-86
Isophorone	B085J0	HEISPROD	199-N-86
Acenaphthene	B085J0	HEISPROD	199-N-86
Diethyl phthalate	B085J0	HEISPROD	199-N-86
Di-n-butylphthalate	B085J0	HEISPROD	199-N-86
Phenanthrene	B085J0	HEISPROD	199-N-86
Butylbenzylphthalate	B085J0	HEISPROD	199-N-86
N-Nitrosodiphenylamine	B085J0	HEISPROD	199-N-86
Fluorene	B085J0	HEISPROD	199-N-86
Carbazole	B085J0	HEISPROD	199-N-86
Hexachlorobutadiene	B085J0	HEISPROD	199-N-86
Pentachlorophenol	B085J0	HEISPROD	199-N-86
2,4,6-Trichlorophenol	B085J0	HEISPROD	199-N-86
2-Nitroaniline	B085J0	HEISPROD	199-N-86
2-Nitrophenol	B085J0	HEISPROD	199-N-86
Naphthalene	B085J0	HEISPROD	199-N-86
2-Methylnaphthalene	B085J0	HEISPROD	199-N-86
2-Chloronaphthalene	B085J0	HEISPROD	199-N-86
3,3'-Dichlorobenzidine	B085J0	HEISPROD	199-N-86
2-Methylphenol (cresol, o-)	B085J0	HEISPROD	199-N-86
1,2-Dichlorobenzene	B085J0	HEISPROD	199-N-86
2-Chlorophenol	B085J0	HEISPROD	199-N-86
2,4,5-Trichlorophenol	B085J0	HEISPROD	199-N-86
Nitrobenzene	B085J0	HEISPROD	199-N-86
3-Nitroaniline	B085J0	HEISPROD	199-N-86
Cesium-137	B085J0	HEISPROD	199-N-86
Cobalt-60	B085J0	HEISPROD	199-N-86
Potassium-40	B085J0	HEISPROD	199-N-86
Ruthenium-106	B085J0	HEISPROD	199-N-86
Cesium-134	B085J0	HEISPROD	199-N-86
Zinc-65	B085J0	HEISPROD	199-N-86
Radium-226	B085J0	HEISPROD	199-N-86
Thorium-228	B085J0	HEISPROD	199-N-86
Chromium-51	B085J0	HEISPROD	199-N-86

Iron-59	B085J0	HEISPROD	199-N-86
Europium-152	B085J0	HEISPROD	199-N-86
Cerium-144	B085J0	HEISPROD	199-N-86
Europium-154	B085J0	HEISPROD	199-N-86
Thorium-232	B085J0	HEISPROD	199-N-86
Strontium-90	B085J0	HEISPROD	199-N-86
Gross alpha	B085J0	HEISPROD	199-N-86
Gross beta	B085J0	HEISPROD	199-N-86
Plutonium-238	B085J0	HEISPROD	199-N-86
Americium-241	B085J0	HEISPROD	199-N-86
Carbon-14	B085J0	HEISPROD	199-N-86
Uranium-235	B085J0	HEISPROD	199-N-86
Plutonium-239/240	B085J0	HEISPROD	199-N-86
Uranium-233/234	B085J0	HEISPROD	199-N-86
Uranium-238	B085J0	HEISPROD	199-N-86
Cyanide	B085J1	HEISPROD	199-N-86
Mercury	B085J1	HEISPROD	199-N-86
Lead	B085J1	HEISPROD	199-N-86
Thallium	B085J1	HEISPROD	199-N-86
Arsenic	B085J1	HEISPROD	199-N-86
Selenium	B085J1	HEISPROD	199-N-86
Aluminum	B085J1	HEISPROD	199-N-86
Iron	B085J1	HEISPROD	199-N-86
Magnesium	B085J1	HEISPROD	199-N-86
Manganese	B085J1	HEISPROD	199-N-86
Nickel	B085J1	HEISPROD	199-N-86
Potassium	B085J1	HEISPROD	199-N-86
Silver	B085J1	HEISPROD	199-N-86
Sodium	B085J1	HEISPROD	199-N-86
Antimony	B085J1	HEISPROD	199-N-86
Barium	B085J1	HEISPROD	199-N-86
Beryllium	B085J1	HEISPROD	199-N-86
Cadmium	B085J1	HEISPROD	199-N-86
Chromium	B085J1	HEISPROD	199-N-86
Cobalt	B085J1	HEISPROD	199-N-86
Copper	B085J1	HEISPROD	199-N-86
Vanadium	B085J1	HEISPROD	199-N-86
Zinc	B085J1	HEISPROD	199-N-86
Calcium	B085J1	HEISPROD	199-N-86
Heptachlor epoxide	B085J1	HEISPROD	199-N-86
Endosulfan sulfate	B085J1	HEISPROD	199-N-86
Aroclor-1260	B085J1	HEISPROD	199-N-86
Aroclor-1254	B085J1	HEISPROD	199-N-86
Aroclor-1221	B085J1	HEISPROD	199-N-86
Aroclor-1232	B085J1	HEISPROD	199-N-86
Aroclor-1248	B085J1	HEISPROD	199-N-86
Aroclor-1016	B085J1	HEISPROD	199-N-86
Aldrin	B085J1	HEISPROD	199-N-86
Alpha-BHC	B085J1	HEISPROD	199-N-86
beta-1,2,3,4,5,6-Hexachlorocyclohexane	B085J1	HEISPROD	199-N-86
Delta-BHC	B085J1	HEISPROD	199-N-86
Endosulfan II	B085J1	HEISPROD	199-N-86

Dichlorodiphenyltrichloroethane	B085J1	HEISPROD	199-N-86
alpha-Chlordane	B085J1	HEISPROD	199-N-86
gamma-Chlordane	B085J1	HEISPROD	199-N-86
Aroclor-1242	B085J1	HEISPROD	199-N-86
Endrin ketone	B085J1	HEISPROD	199-N-86
Gamma-BHC (Lindane)	B085J1	HEISPROD	199-N-86
Dieldrin	B085J1	HEISPROD	199-N-86
Endrin	B085J1	HEISPROD	199-N-86
Methoxychlor	B085J1	HEISPROD	199-N-86
Dichlorodiphenyldichloroethane	B085J1	HEISPROD	199-N-86
Dichlorodiphenyldichloroethylene	B085J1	HEISPROD	199-N-86
Endrin aldehyde	B085J1	HEISPROD	199-N-86
Heptachlor	B085J1	HEISPROD	199-N-86
Toxaphene	B085J1	HEISPROD	199-N-86
Endosulfan I	B085J1	HEISPROD	199-N-86
4-Nitroaniline	B085J1	HEISPROD	199-N-86
4-Nitrophenol	B085J1	HEISPROD	199-N-86
4-Bromophenylphenyl ether	B085J1	HEISPROD	199-N-86
2,4-Dimethylphenol	B085J1	HEISPROD	199-N-86
4-Methylphenol (cresol, p-)	B085J1	HEISPROD	199-N-86
1,4-Dichlorobenzene	B085J1	HEISPROD	199-N-86
4-Chloroaniline	B085J1	HEISPROD	199-N-86
Bis(2-chloro-1-methylethyl)ether	B085J1	HEISPROD	199-N-86
Phenol	B085J1	HEISPROD	199-N-86
Bis(2-chloroethyl) ether	B085J1	HEISPROD	199-N-86
Bis(2-Chloroethoxy)methane	B085J1	HEISPROD	199-N-86
Bis(2-ethylhexyl) phthalate	B085J1	HEISPROD	199-N-86
Di-n-octylphthalate	B085J1	HEISPROD	199-N-86
Hexachlorobenzene	B085J1	HEISPROD	199-N-86
Anthracene	B085J1	HEISPROD	199-N-86
1,2,4-Trichlorobenzene	B085J1	HEISPROD	199-N-86
2,4-Dichlorophenol	B085J1	HEISPROD	199-N-86
2,4-Dinitrotoluene	B085J1	HEISPROD	199-N-86
Pyrene	B085J1	HEISPROD	199-N-86
Dimethyl phthalate	B085J1	HEISPROD	199-N-86
Dibenzofuran	B085J1	HEISPROD	199-N-86
Benzo(ghi)perylene	B085J1	HEISPROD	199-N-86
Indeno(1,2,3-cd)pyrene	B085J1	HEISPROD	199-N-86
Benzo(b)fluoranthene	B085J1	HEISPROD	199-N-86
Fluoranthene	B085J1	HEISPROD	199-N-86
Benzo(k)fluoranthene	B085J1	HEISPROD	199-N-86
Acenaphthylene	B085J1	HEISPROD	199-N-86
Chrysene	B085J1	HEISPROD	199-N-86
Benzo(a)pyrene	B085J1	HEISPROD	199-N-86
2,4-Dinitrophenol	B085J1	HEISPROD	199-N-86
Dibenz[a,h]anthracene	B085J1	HEISPROD	199-N-86
4,6-Dinitro-2-methylphenol	B085J1	HEISPROD	199-N-86
1,3-Dichlorobenzene	B085J1	HEISPROD	199-N-86
Benzo(a)anthracene	B085J1	HEISPROD	199-N-86
4-Chloro-3-methylphenol	B085J1	HEISPROD	199-N-86
2,6-Dinitrotoluene	B085J1	HEISPROD	199-N-86
N-Nitroso-di-n-dipropylamine	B085J1	HEISPROD	199-N-86

Hexachloroethane	B085J1	HEISPROD	199-N-86
4-Chlorophenylphenyl ether	B085J1	HEISPROD	199-N-86
Hexachlorocyclopentadiene	B085J1	HEISPROD	199-N-86
Isophorone	B085J1	HEISPROD	199-N-86
Acenaphthene	B085J1	HEISPROD	199-N-86
Diethyl phthalate	B085J1	HEISPROD	199-N-86
Di-n-butylphthalate	B085J1	HEISPROD	199-N-86
Phenanthrene	B085J1	HEISPROD	199-N-86
Butylbenzylphthalate	B085J1	HEISPROD	199-N-86
N-Nitrosodiphenylamine	B085J1	HEISPROD	199-N-86
Fluorene	B085J1	HEISPROD	199-N-86
Carbazole	B085J1	HEISPROD	199-N-86
Hexachlorobutadiene	B085J1	HEISPROD	199-N-86
Pentachlorophenol	B085J1	HEISPROD	199-N-86
2,4,6-Trichlorophenol	B085J1	HEISPROD	199-N-86
2-Nitroaniline	B085J1	HEISPROD	199-N-86
2-Nitrophenol	B085J1	HEISPROD	199-N-86
Naphthalene	B085J1	HEISPROD	199-N-86
2-Methylnaphthalene	B085J1	HEISPROD	199-N-86
2-Chloronaphthalene	B085J1	HEISPROD	199-N-86
3,3'-Dichlorobenzidine	B085J1	HEISPROD	199-N-86
2-Methylphenol (cresol, o-)	B085J1	HEISPROD	199-N-86
1,2-Dichlorobenzene	B085J1	HEISPROD	199-N-86
2-Chlorophenol	B085J1	HEISPROD	199-N-86
2,4,5-Trichlorophenol	B085J1	HEISPROD	199-N-86
Nitrobenzene	B085J1	HEISPROD	199-N-86
3-Nitroaniline	B085J1	HEISPROD	199-N-86
Cesium-137	B085J1	HEISPROD	199-N-86
Cobalt-60	B085J1	HEISPROD	199-N-86
Potassium-40	B085J1	HEISPROD	199-N-86
Ruthenium-106	B085J1	HEISPROD	199-N-86
Cesium-134	B085J1	HEISPROD	199-N-86
Zinc-65	B085J1	HEISPROD	199-N-86
Radium-226	B085J1	HEISPROD	199-N-86
Thorium-228	B085J1	HEISPROD	199-N-86
Chromium-51	B085J1	HEISPROD	199-N-86
Iron-59	B085J1	HEISPROD	199-N-86
Europium-152	B085J1	HEISPROD	199-N-86
Cerium-144	B085J1	HEISPROD	199-N-86
Europium-154	B085J1	HEISPROD	199-N-86
Thorium-232	B085J1	HEISPROD	199-N-86
Strontium-90	B085J1	HEISPROD	199-N-86
Gross alpha	B085J1	HEISPROD	199-N-86
Gross beta	B085J1	HEISPROD	199-N-86
Plutonium-238	B085J1	HEISPROD	199-N-86
Americium-241	B085J1	HEISPROD	199-N-86
Carbon-14	B085J1	HEISPROD	199-N-86
Uranium-235	B085J1	HEISPROD	199-N-86
Plutonium-239/240	B085J1	HEISPROD	199-N-86
Uranium-233/234	B085J1	HEISPROD	199-N-86
Uranium-238	B085J1	HEISPROD	199-N-86
Phosphate	B085H2	HEISPROD	199-N-87

Sulfate	B085H2	HEISPROD	199-N-87
Fluoride	B085H2	HEISPROD	199-N-87
Nitrogen in Nitrite and Nitrate	B085H2	HEISPROD	199-N-87
Cyanide	B085H2	HEISPROD	199-N-87
Mercury	B085H2	HEISPROD	199-N-87
Lead	B085H2	HEISPROD	199-N-87
Thallium	B085H2	HEISPROD	199-N-87
Arsenic	B085H2	HEISPROD	199-N-87
Selenium	B085H2	HEISPROD	199-N-87
Aluminum	B085H2	HEISPROD	199-N-87
Iron	B085H2	HEISPROD	199-N-87
Magnesium	B085H2	HEISPROD	199-N-87
Manganese	B085H2	HEISPROD	199-N-87
Nickel	B085H2	HEISPROD	199-N-87
Potassium	B085H2	HEISPROD	199-N-87
Silver	B085H2	HEISPROD	199-N-87
Sodium	B085H2	HEISPROD	199-N-87
Antimony	B085H2	HEISPROD	199-N-87
Barium	B085H2	HEISPROD	199-N-87
Beryllium	B085H2	HEISPROD	199-N-87
Cadmium	B085H2	HEISPROD	199-N-87
Chromium	B085H2	HEISPROD	199-N-87
Cobalt	B085H2	HEISPROD	199-N-87
Copper	B085H2	HEISPROD	199-N-87
Vanadium	B085H2	HEISPROD	199-N-87
Zinc	B085H2	HEISPROD	199-N-87
Calcium	B085H2	HEISPROD	199-N-87
Heptachlor epoxide	B085H2	HEISPROD	199-N-87
Endosulfan sulfate	B085H2	HEISPROD	199-N-87
Aroclor-1260	B085H2	HEISPROD	199-N-87
Aroclor-1254	B085H2	HEISPROD	199-N-87
Aroclor-1221	B085H2	HEISPROD	199-N-87
Aroclor-1232	B085H2	HEISPROD	199-N-87
Aroclor-1248	B085H2	HEISPROD	199-N-87
Aroclor-1016	B085H2	HEISPROD	199-N-87
Aldrin	B085H2	HEISPROD	199-N-87
Alpha-BHC	B085H2	HEISPROD	199-N-87
beta-1,2,3,4,5,6-Hexachlorocyclohexane	B085H2	HEISPROD	199-N-87
Delta-BHC	B085H2	HEISPROD	199-N-87
Endosulfan II	B085H2	HEISPROD	199-N-87
Dichlorodiphenyltrichloroethane	B085H2	HEISPROD	199-N-87
alpha-Chlordane	B085H2	HEISPROD	199-N-87
gamma-Chlordane	B085H2	HEISPROD	199-N-87
Aroclor-1242	B085H2	HEISPROD	199-N-87
Endrin ketone	B085H2	HEISPROD	199-N-87
Gamma-BHC (Lindane)	B085H2	HEISPROD	199-N-87
Dieldrin	B085H2	HEISPROD	199-N-87
Endrin	B085H2	HEISPROD	199-N-87
Methoxychlor	B085H2	HEISPROD	199-N-87
Dichlorodiphenyldichloroethane	B085H2	HEISPROD	199-N-87
Dichlorodiphenyldichloroethylene	B085H2	HEISPROD	199-N-87
Endrin aldehyde	B085H2	HEISPROD	199-N-87

Heptachlor	B085H2	HEISPROD	199-N-87
Toxaphene	B085H2	HEISPROD	199-N-87
Endosulfan I	B085H2	HEISPROD	199-N-87
4-Nitroaniline	B085H2	HEISPROD	199-N-87
4-Nitrophenol	B085H2	HEISPROD	199-N-87
4-Bromophenylphenyl ether	B085H2	HEISPROD	199-N-87
2,4-Dimethylphenol	B085H2	HEISPROD	199-N-87
4-Methylphenol (cresol, p-)	B085H2	HEISPROD	199-N-87
1,4-Dichlorobenzene	B085H2	HEISPROD	199-N-87
4-Chloroaniline	B085H2	HEISPROD	199-N-87
Bis(2-chloro-1-methylethyl)ether	B085H2	HEISPROD	199-N-87
Phenol	B085H2	HEISPROD	199-N-87
Bis(2-chloroethyl) ether	B085H2	HEISPROD	199-N-87
Bis(2-Chloroethoxy)methane	B085H2	HEISPROD	199-N-87
Bis(2-ethylhexyl) phthalate	B085H2	HEISPROD	199-N-87
Di-n-octylphthalate	B085H2	HEISPROD	199-N-87
Hexachlorobenzene	B085H2	HEISPROD	199-N-87
Anthracene	B085H2	HEISPROD	199-N-87
1,2,4-Trichlorobenzene	B085H2	HEISPROD	199-N-87
2,4-Dichlorophenol	B085H2	HEISPROD	199-N-87
2,4-Dinitrotoluene	B085H2	HEISPROD	199-N-87
Pyrene	B085H2	HEISPROD	199-N-87
Dimethyl phthalate	B085H2	HEISPROD	199-N-87
Dibenzofuran	B085H2	HEISPROD	199-N-87
Benzo(ghi)perylene	B085H2	HEISPROD	199-N-87
Indeno(1,2,3-cd)pyrene	B085H2	HEISPROD	199-N-87
Benzo(b)fluoranthene	B085H2	HEISPROD	199-N-87
Fluoranthene	B085H2	HEISPROD	199-N-87
Benzo(k)fluoranthene	B085H2	HEISPROD	199-N-87
Acenaphthylene	B085H2	HEISPROD	199-N-87
Chrysene	B085H2	HEISPROD	199-N-87
Benzo(a)pyrene	B085H2	HEISPROD	199-N-87
2,4-Dinitrophenol	B085H2	HEISPROD	199-N-87
Dibenz[a,h]anthracene	B085H2	HEISPROD	199-N-87
4,6-Dinitro-2-methylphenol	B085H2	HEISPROD	199-N-87
1,3-Dichlorobenzene	B085H2	HEISPROD	199-N-87
Benzo(a)anthracene	B085H2	HEISPROD	199-N-87
4-Chloro-3-methylphenol	B085H2	HEISPROD	199-N-87
2,6-Dinitrotoluene	B085H2	HEISPROD	199-N-87
N-Nitroso-di-n-dipropylamine	B085H2	HEISPROD	199-N-87
Hexachloroethane	B085H2	HEISPROD	199-N-87
4-Chlorophenylphenyl ether	B085H2	HEISPROD	199-N-87
Hexachlorocyclopentadiene	B085H2	HEISPROD	199-N-87
Isophorone	B085H2	HEISPROD	199-N-87
Acenaphthene	B085H2	HEISPROD	199-N-87
Diethyl phthalate	B085H2	HEISPROD	199-N-87
Di-n-butylphthalate	B085H2	HEISPROD	199-N-87
Phenanthrene	B085H2	HEISPROD	199-N-87
Butylbenzylphthalate	B085H2	HEISPROD	199-N-87
N-Nitrosodiphenylamine	B085H2	HEISPROD	199-N-87
Fluorene	B085H2	HEISPROD	199-N-87
Carbazole	B085H2	HEISPROD	199-N-87

Hexachlorobutadiene	B085H2	HEISPROD	199-N-87
Pentachlorophenol	B085H2	HEISPROD	199-N-87
2,4,6-Trichlorophenol	B085H2	HEISPROD	199-N-87
2-Nitroaniline	B085H2	HEISPROD	199-N-87
2-Nitrophenol	B085H2	HEISPROD	199-N-87
Naphthalene	B085H2	HEISPROD	199-N-87
2-Methylnaphthalene	B085H2	HEISPROD	199-N-87
2-Chloronaphthalene	B085H2	HEISPROD	199-N-87
3,3'-Dichlorobenzidine	B085H2	HEISPROD	199-N-87
2-Methylphenol (cresol, o-)	B085H2	HEISPROD	199-N-87
1,2-Dichlorobenzene	B085H2	HEISPROD	199-N-87
2-Chlorophenol	B085H2	HEISPROD	199-N-87
2,4,5-Trichlorophenol	B085H2	HEISPROD	199-N-87
Nitrobenzene	B085H2	HEISPROD	199-N-87
3-Nitroaniline	B085H2	HEISPROD	199-N-87
Ethylbenzene	B085H2	HEISPROD	199-N-87
Styrene	B085H2	HEISPROD	199-N-87
cis-1,3-Dichloropropene	B085H2	HEISPROD	199-N-87
trans-1,3-Dichloropropene	B085H2	HEISPROD	199-N-87
1,2-Dichloroethane	B085H2	HEISPROD	199-N-87
4-Methyl-2-Pentanone	B085H2	HEISPROD	199-N-87
Toluene	B085H2	HEISPROD	199-N-87
Chlorobenzene	B085H2	HEISPROD	199-N-87
Dibromochloromethane	B085H2	HEISPROD	199-N-87
Tetrachloroethene	B085H2	HEISPROD	199-N-87
Xylenes (total)	B085H2	HEISPROD	199-N-87
1,2-Dichloroethene(Total)	B085H2	HEISPROD	199-N-87
Carbon tetrachloride	B085H2	HEISPROD	199-N-87
2-Hexanone	B085H2	HEISPROD	199-N-87
Acetone	B085H2	HEISPROD	199-N-87
Chloroform	B085H2	HEISPROD	199-N-87
Benzene	B085H2	HEISPROD	199-N-87
1,1,1-Trichloroethane	B085H2	HEISPROD	199-N-87
Bromomethane	B085H2	HEISPROD	199-N-87
Chloromethane	B085H2	HEISPROD	199-N-87
Chloroethane	B085H2	HEISPROD	199-N-87
Vinyl chloride	B085H2	HEISPROD	199-N-87
Methylenechloride	B085H2	HEISPROD	199-N-87
Carbon disulfide	B085H2	HEISPROD	199-N-87
Bromoform	B085H2	HEISPROD	199-N-87
Bromodichloromethane	B085H2	HEISPROD	199-N-87
1,1-Dichloroethane	B085H2	HEISPROD	199-N-87
1,1-Dichloroethene	B085H2	HEISPROD	199-N-87
1,2-Dichloropropane	B085H2	HEISPROD	199-N-87
2-Butanone	B085H2	HEISPROD	199-N-87
1,1,2-Trichloroethane	B085H2	HEISPROD	199-N-87
Trichloroethene	B085H2	HEISPROD	199-N-87
1,1,2,2-Tetrachloroethane	B085H2	HEISPROD	199-N-87
Cesium-137	B085H2	HEISPROD	199-N-87
Cobalt-60	B085H2	HEISPROD	199-N-87
Potassium-40	B085H2	HEISPROD	199-N-87
Ruthenium-106	B085H2	HEISPROD	199-N-87

Cesium-134	B085H2	HEISPROD	199-N-87
Zinc-65	B085H2	HEISPROD	199-N-87
Radium-226	B085H2	HEISPROD	199-N-87
Thorium-228	B085H2	HEISPROD	199-N-87
Chromium-51	B085H2	HEISPROD	199-N-87
Iron-59	B085H2	HEISPROD	199-N-87
Europium-152	B085H2	HEISPROD	199-N-87
Cerium-144	B085H2	HEISPROD	199-N-87
Europium-154	B085H2	HEISPROD	199-N-87
Thorium-232	B085H2	HEISPROD	199-N-87
Strontium-90	B085H2	HEISPROD	199-N-87
Gross alpha	B085H2	HEISPROD	199-N-87
Gross beta	B085H2	HEISPROD	199-N-87
Plutonium-238	B085H2	HEISPROD	199-N-87
Americium-241	B085H2	HEISPROD	199-N-87
Carbon-14	B085H2	HEISPROD	199-N-87
Uranium-235	B085H2	HEISPROD	199-N-87
Plutonium-239/240	B085H2	HEISPROD	199-N-87
Uranium-233/234	B085H2	HEISPROD	199-N-87
Uranium-238	B085H2	HEISPROD	199-N-87
Phosphate	B085H3	HEISPROD	199-N-87
Sulfate	B085H3	HEISPROD	199-N-87
Fluoride	B085H3	HEISPROD	199-N-87
Nitrogen in Nitrite and Nitrate	B085H3	HEISPROD	199-N-87
Cyanide	B085H3	HEISPROD	199-N-87
Mercury	B085H3	HEISPROD	199-N-87
Lead	B085H3	HEISPROD	199-N-87
Thallium	B085H3	HEISPROD	199-N-87
Arsenic	B085H3	HEISPROD	199-N-87
Selenium	B085H3	HEISPROD	199-N-87
Aluminum	B085H3	HEISPROD	199-N-87
Iron	B085H3	HEISPROD	199-N-87
Magnesium	B085H3	HEISPROD	199-N-87
Manganese	B085H3	HEISPROD	199-N-87
Nickel	B085H3	HEISPROD	199-N-87
Potassium	B085H3	HEISPROD	199-N-87
Silver	B085H3	HEISPROD	199-N-87
Sodium	B085H3	HEISPROD	199-N-87
Antimony	B085H3	HEISPROD	199-N-87
Barium	B085H3	HEISPROD	199-N-87
Beryllium	B085H3	HEISPROD	199-N-87
Cadmium	B085H3	HEISPROD	199-N-87
Chromium	B085H3	HEISPROD	199-N-87
Cobalt	B085H3	HEISPROD	199-N-87
Copper	B085H3	HEISPROD	199-N-87
Vanadium	B085H3	HEISPROD	199-N-87
Zinc	B085H3	HEISPROD	199-N-87
Calcium	B085H3	HEISPROD	199-N-87
Heptachlor epoxide	B085H3	HEISPROD	199-N-87
Endosulfan sulfate	B085H3	HEISPROD	199-N-87
Aroclor-1260	B085H3	HEISPROD	199-N-87
Aroclor-1254	B085H3	HEISPROD	199-N-87

Aroclor-1221	B085H3	HEISPROD	199-N-87
Aroclor-1232	B085H3	HEISPROD	199-N-87
Aroclor-1248	B085H3	HEISPROD	199-N-87
Aroclor-1016	B085H3	HEISPROD	199-N-87
Aldrin	B085H3	HEISPROD	199-N-87
Alpha-BHC	B085H3	HEISPROD	199-N-87
beta-1,2,3,4,5,6-Hexachlorocyclohexane	B085H3	HEISPROD	199-N-87
Delta-BHC	B085H3	HEISPROD	199-N-87
Endosulfan II	B085H3	HEISPROD	199-N-87
Dichlorodiphenyltrichloroethane	B085H3	HEISPROD	199-N-87
alpha-Chlordane	B085H3	HEISPROD	199-N-87
gamma-Chlordane	B085H3	HEISPROD	199-N-87
Aroclor-1242	B085H3	HEISPROD	199-N-87
Endrin ketone	B085H3	HEISPROD	199-N-87
Gamma-BHC (Lindane)	B085H3	HEISPROD	199-N-87
Dieldrin	B085H3	HEISPROD	199-N-87
Endrin	B085H3	HEISPROD	199-N-87
Methoxychlor	B085H3	HEISPROD	199-N-87
Dichlorodiphenyldichloroethane	B085H3	HEISPROD	199-N-87
Dichlorodiphenyldichloroethylene	B085H3	HEISPROD	199-N-87
Endrin aldehyde	B085H3	HEISPROD	199-N-87
Heptachlor	B085H3	HEISPROD	199-N-87
Toxaphene	B085H3	HEISPROD	199-N-87
Endosulfan I	B085H3	HEISPROD	199-N-87
4-Nitroaniline	B085H3	HEISPROD	199-N-87
4-Nitrophenol	B085H3	HEISPROD	199-N-87
4-Bromophenylphenyl ether	B085H3	HEISPROD	199-N-87
2,4-Dimethylphenol	B085H3	HEISPROD	199-N-87
4-Methylphenol (cresol, p-)	B085H3	HEISPROD	199-N-87
1,4-Dichlorobenzene	B085H3	HEISPROD	199-N-87
4-Chloroaniline	B085H3	HEISPROD	199-N-87
Bis(2-chloro-1-methylethyl)ether	B085H3	HEISPROD	199-N-87
Phenol	B085H3	HEISPROD	199-N-87
Bis(2-chloroethyl) ether	B085H3	HEISPROD	199-N-87
Bis(2-Chloroethoxy)methane	B085H3	HEISPROD	199-N-87
Bis(2-ethylhexyl) phthalate	B085H3	HEISPROD	199-N-87
Di-n-octylphthalate	B085H3	HEISPROD	199-N-87
Hexachlorobenzene	B085H3	HEISPROD	199-N-87
Anthracene	B085H3	HEISPROD	199-N-87
1,2,4-Trichlorobenzene	B085H3	HEISPROD	199-N-87
2,4-Dichlorophenol	B085H3	HEISPROD	199-N-87
2,4-Dinitrotoluene	B085H3	HEISPROD	199-N-87
Pyrene	B085H3	HEISPROD	199-N-87
Dimethyl phthalate	B085H3	HEISPROD	199-N-87
Dibenzofuran	B085H3	HEISPROD	199-N-87
Benzo(ghi)perylene	B085H3	HEISPROD	199-N-87
Indeno(1,2,3-cd)pyrene	B085H3	HEISPROD	199-N-87
Benzo(b)fluoranthene	B085H3	HEISPROD	199-N-87
Fluoranthene	B085H3	HEISPROD	199-N-87
Benzo(k)fluoranthene	B085H3	HEISPROD	199-N-87
Acenaphthylene	B085H3	HEISPROD	199-N-87
Chrysene	B085H3	HEISPROD	199-N-87

Benzo(a)pyrene	B085H3	HEISPROD	199-N-87
2,4-Dinitrophenol	B085H3	HEISPROD	199-N-87
Dibenz[a,h]anthracene	B085H3	HEISPROD	199-N-87
4,6-Dinitro-2-methylphenol	B085H3	HEISPROD	199-N-87
1,3-Dichlorobenzene	B085H3	HEISPROD	199-N-87
Benzo(a)anthracene	B085H3	HEISPROD	199-N-87
4-Chloro-3-methylphenol	B085H3	HEISPROD	199-N-87
2,6-Dinitrotoluene	B085H3	HEISPROD	199-N-87
N-Nitroso-di-n-dipropylamine	B085H3	HEISPROD	199-N-87
Hexachloroethane	B085H3	HEISPROD	199-N-87
4-Chlorophenylphenyl ether	B085H3	HEISPROD	199-N-87
Hexachlorocyclopentadiene	B085H3	HEISPROD	199-N-87
Isophorone	B085H3	HEISPROD	199-N-87
Acenaphthene	B085H3	HEISPROD	199-N-87
Diethyl phthalate	B085H3	HEISPROD	199-N-87
Di-n-butylphthalate	B085H3	HEISPROD	199-N-87
Phenanthrene	B085H3	HEISPROD	199-N-87
Butylbenzylphthalate	B085H3	HEISPROD	199-N-87
N-Nitrosodiphenylamine	B085H3	HEISPROD	199-N-87
Fluorene	B085H3	HEISPROD	199-N-87
Carbazole	B085H3	HEISPROD	199-N-87
Hexachlorobutadiene	B085H3	HEISPROD	199-N-87
Pentachlorophenol	B085H3	HEISPROD	199-N-87
2,4,6-Trichlorophenol	B085H3	HEISPROD	199-N-87
2-Nitroaniline	B085H3	HEISPROD	199-N-87
2-Nitrophenol	B085H3	HEISPROD	199-N-87
Naphthalene	B085H3	HEISPROD	199-N-87
2-Methylnaphthalene	B085H3	HEISPROD	199-N-87
2-Chloronaphthalene	B085H3	HEISPROD	199-N-87
3,3'-Dichlorobenzidine	B085H3	HEISPROD	199-N-87
2-Methylphenol (cresol, o-)	B085H3	HEISPROD	199-N-87
1,2-Dichlorobenzene	B085H3	HEISPROD	199-N-87
2-Chlorophenol	B085H3	HEISPROD	199-N-87
2,4,5-Trichlorophenol	B085H3	HEISPROD	199-N-87
Nitrobenzene	B085H3	HEISPROD	199-N-87
3-Nitroaniline	B085H3	HEISPROD	199-N-87
Ethylbenzene	B085H3	HEISPROD	199-N-87
Styrene	B085H3	HEISPROD	199-N-87
cis-1,3-Dichloropropene	B085H3	HEISPROD	199-N-87
trans-1,3-Dichloropropene	B085H3	HEISPROD	199-N-87
1,2-Dichloroethane	B085H3	HEISPROD	199-N-87
4-Methyl-2-Pentanone	B085H3	HEISPROD	199-N-87
Toluene	B085H3	HEISPROD	199-N-87
Chlorobenzene	B085H3	HEISPROD	199-N-87
Dibromochloromethane	B085H3	HEISPROD	199-N-87
Tetrachloroethene	B085H3	HEISPROD	199-N-87
Xylenes (total)	B085H3	HEISPROD	199-N-87
1,2-Dichloroethene(Total)	B085H3	HEISPROD	199-N-87
Carbon tetrachloride	B085H3	HEISPROD	199-N-87
2-Hexanone	B085H3	HEISPROD	199-N-87
Acetone	B085H3	HEISPROD	199-N-87
Chloroform	B085H3	HEISPROD	199-N-87

Benzene	B085H3	HEISPROD	199-N-87
1,1,1-Trichloroethane	B085H3	HEISPROD	199-N-87
Bromomethane	B085H3	HEISPROD	199-N-87
Chloromethane	B085H3	HEISPROD	199-N-87
Chloroethane	B085H3	HEISPROD	199-N-87
Vinyl chloride	B085H3	HEISPROD	199-N-87
Methylenechloride	B085H3	HEISPROD	199-N-87
Carbon disulfide	B085H3	HEISPROD	199-N-87
Bromoform	B085H3	HEISPROD	199-N-87
Bromodichloromethane	B085H3	HEISPROD	199-N-87
1,1-Dichloroethane	B085H3	HEISPROD	199-N-87
1,1-Dichloroethene	B085H3	HEISPROD	199-N-87
1,2-Dichloropropane	B085H3	HEISPROD	199-N-87
2-Butanone	B085H3	HEISPROD	199-N-87
1,1,2-Trichloroethane	B085H3	HEISPROD	199-N-87
Trichloroethene	B085H3	HEISPROD	199-N-87
1,1,2,2-Tetrachloroethane	B085H3	HEISPROD	199-N-87
Cesium-137	B085H3	HEISPROD	199-N-87
Cobalt-60	B085H3	HEISPROD	199-N-87
Potassium-40	B085H3	HEISPROD	199-N-87
Ruthenium-106	B085H3	HEISPROD	199-N-87
Cesium-134	B085H3	HEISPROD	199-N-87
Zinc-65	B085H3	HEISPROD	199-N-87
Radium-226	B085H3	HEISPROD	199-N-87
Thorium-228	B085H3	HEISPROD	199-N-87
Chromium-51	B085H3	HEISPROD	199-N-87
Iron-59	B085H3	HEISPROD	199-N-87
Europium-152	B085H3	HEISPROD	199-N-87
Cerium-144	B085H3	HEISPROD	199-N-87
Europium-154	B085H3	HEISPROD	199-N-87
Thorium-232	B085H3	HEISPROD	199-N-87
Strontium-90	B085H3	HEISPROD	199-N-87
Gross alpha	B085H3	HEISPROD	199-N-87
Gross beta	B085H3	HEISPROD	199-N-87
Plutonium-238	B085H3	HEISPROD	199-N-87
Americium-241	B085H3	HEISPROD	199-N-87
Carbon-14	B085H3	HEISPROD	199-N-87
Uranium-235	B085H3	HEISPROD	199-N-87
Plutonium-239/240	B085H3	HEISPROD	199-N-87
Uranium-233/234	B085H3	HEISPROD	199-N-87
Uranium-238	B085H3	HEISPROD	199-N-87
Phosphate	B085H4	HEISPROD	199-N-87
Sulfate	B085H4	HEISPROD	199-N-87
Fluoride	B085H4	HEISPROD	199-N-87
Nitrogen in Nitrite and Nitrate	B085H4	HEISPROD	199-N-87
Cyanide	B085H4	HEISPROD	199-N-87
Mercury	B085H4	HEISPROD	199-N-87
Lead	B085H4	HEISPROD	199-N-87
Thallium	B085H4	HEISPROD	199-N-87
Arsenic	B085H4	HEISPROD	199-N-87
Selenium	B085H4	HEISPROD	199-N-87
Aluminum	B085H4	HEISPROD	199-N-87

Iron	B085H4	HEISPROD	199-N-87
Magnesium	B085H4	HEISPROD	199-N-87
Manganese	B085H4	HEISPROD	199-N-87
Nickel	B085H4	HEISPROD	199-N-87
Potassium	B085H4	HEISPROD	199-N-87
Silver	B085H4	HEISPROD	199-N-87
Sodium	B085H4	HEISPROD	199-N-87
Antimony	B085H4	HEISPROD	199-N-87
Barium	B085H4	HEISPROD	199-N-87
Beryllium	B085H4	HEISPROD	199-N-87
Cadmium	B085H4	HEISPROD	199-N-87
Chromium	B085H4	HEISPROD	199-N-87
Cobalt	B085H4	HEISPROD	199-N-87
Copper	B085H4	HEISPROD	199-N-87
Vanadium	B085H4	HEISPROD	199-N-87
Zinc	B085H4	HEISPROD	199-N-87
Calcium	B085H4	HEISPROD	199-N-87
Heptachlor epoxide	B085H4	HEISPROD	199-N-87
Endosulfan sulfate	B085H4	HEISPROD	199-N-87
Aroclor-1260	B085H4	HEISPROD	199-N-87
Aroclor-1254	B085H4	HEISPROD	199-N-87
Aroclor-1221	B085H4	HEISPROD	199-N-87
Aroclor-1232	B085H4	HEISPROD	199-N-87
Aroclor-1248	B085H4	HEISPROD	199-N-87
Aroclor-1016	B085H4	HEISPROD	199-N-87
Aldrin	B085H4	HEISPROD	199-N-87
Alpha-BHC	B085H4	HEISPROD	199-N-87
beta-1,2,3,4,5,6-Hexachlorocyclohexane	B085H4	HEISPROD	199-N-87
Delta-BHC	B085H4	HEISPROD	199-N-87
Endosulfan II	B085H4	HEISPROD	199-N-87
Dichlorodiphenyltrichloroethane	B085H4	HEISPROD	199-N-87
alpha-Chlordane	B085H4	HEISPROD	199-N-87
gamma-Chlordane	B085H4	HEISPROD	199-N-87
Aroclor-1242	B085H4	HEISPROD	199-N-87
Endrin ketone	B085H4	HEISPROD	199-N-87
Gamma-BHC (Lindane)	B085H4	HEISPROD	199-N-87
Dieldrin	B085H4	HEISPROD	199-N-87
Endrin	B085H4	HEISPROD	199-N-87
Methoxychlor	B085H4	HEISPROD	199-N-87
Dichlorodiphenyldichloroethane	B085H4	HEISPROD	199-N-87
Dichlorodiphenyldichloroethylene	B085H4	HEISPROD	199-N-87
Endrin aldehyde	B085H4	HEISPROD	199-N-87
Heptachlor	B085H4	HEISPROD	199-N-87
Toxaphene	B085H4	HEISPROD	199-N-87
Endosulfan I	B085H4	HEISPROD	199-N-87
4-Nitroaniline	B085H4	HEISPROD	199-N-87
4-Nitrophenol	B085H4	HEISPROD	199-N-87
4-Bromophenylphenyl ether	B085H4	HEISPROD	199-N-87
2,4-Dimethylphenol	B085H4	HEISPROD	199-N-87
4-Methylphenol (cresol, p-)	B085H4	HEISPROD	199-N-87
1,4-Dichlorobenzene	B085H4	HEISPROD	199-N-87
4-Chloroaniline	B085H4	HEISPROD	199-N-87

Bis(2-chloro-1-methylethyl)ether	B085H4	HEISPROD	199-N-87
Phenol	B085H4	HEISPROD	199-N-87
Bis(2-chloroethyl) ether	B085H4	HEISPROD	199-N-87
Bis(2-Chloroethoxy)methane	B085H4	HEISPROD	199-N-87
Bis(2-ethylhexyl) phthalate	B085H4	HEISPROD	199-N-87
Di-n-octylphthalate	B085H4	HEISPROD	199-N-87
Hexachlorobenzene	B085H4	HEISPROD	199-N-87
Anthracene	B085H4	HEISPROD	199-N-87
1,2,4-Trichlorobenzene	B085H4	HEISPROD	199-N-87
2,4-Dichlorophenol	B085H4	HEISPROD	199-N-87
2,4-Dinitrotoluene	B085H4	HEISPROD	199-N-87
Pyrene	B085H4	HEISPROD	199-N-87
Dimethyl phthalate	B085H4	HEISPROD	199-N-87
Dibenzofuran	B085H4	HEISPROD	199-N-87
Benzo(ghi)perylene	B085H4	HEISPROD	199-N-87
Indeno(1,2,3-cd)pyrene	B085H4	HEISPROD	199-N-87
Benzo(b)fluoranthene	B085H4	HEISPROD	199-N-87
Fluoranthene	B085H4	HEISPROD	199-N-87
Benzo(k)fluoranthene	B085H4	HEISPROD	199-N-87
Acenaphthylene	B085H4	HEISPROD	199-N-87
Chrysene	B085H4	HEISPROD	199-N-87
Benzo(a)pyrene	B085H4	HEISPROD	199-N-87
2,4-Dinitrophenol	B085H4	HEISPROD	199-N-87
Dibenz[a,h]anthracene	B085H4	HEISPROD	199-N-87
4,6-Dinitro-2-methylphenol	B085H4	HEISPROD	199-N-87
1,3-Dichlorobenzene	B085H4	HEISPROD	199-N-87
Benzo(a)anthracene	B085H4	HEISPROD	199-N-87
4-Chloro-3-methylphenol	B085H4	HEISPROD	199-N-87
2,6-Dinitrotoluene	B085H4	HEISPROD	199-N-87
N-Nitroso-di-n-dipropylamine	B085H4	HEISPROD	199-N-87
Hexachloroethane	B085H4	HEISPROD	199-N-87
4-Chlorophenylphenyl ether	B085H4	HEISPROD	199-N-87
Hexachlorocyclopentadiene	B085H4	HEISPROD	199-N-87
Isophorone	B085H4	HEISPROD	199-N-87
Acenaphthene	B085H4	HEISPROD	199-N-87
Diethyl phthalate	B085H4	HEISPROD	199-N-87
Di-n-butylphthalate	B085H4	HEISPROD	199-N-87
Phenanthrene	B085H4	HEISPROD	199-N-87
Butylbenzylphthalate	B085H4	HEISPROD	199-N-87
N-Nitrosodiphenylamine	B085H4	HEISPROD	199-N-87
Fluorene	B085H4	HEISPROD	199-N-87
Carbazole	B085H4	HEISPROD	199-N-87
Hexachlorobutadiene	B085H4	HEISPROD	199-N-87
Pentachlorophenol	B085H4	HEISPROD	199-N-87
2,4,6-Trichlorophenol	B085H4	HEISPROD	199-N-87
2-Nitroaniline	B085H4	HEISPROD	199-N-87
2-Nitrophenol	B085H4	HEISPROD	199-N-87
Naphthalene	B085H4	HEISPROD	199-N-87
2-Methylnaphthalene	B085H4	HEISPROD	199-N-87
2-Chloronaphthalene	B085H4	HEISPROD	199-N-87
3,3'-Dichlorobenzidine	B085H4	HEISPROD	199-N-87
2-Methylphenol (cresol, o-)	B085H4	HEISPROD	199-N-87

1,2-Dichlorobenzene	B085H4	HEISPROD	199-N-87
2-Chlorophenol	B085H4	HEISPROD	199-N-87
2,4,5-Trichlorophenol	B085H4	HEISPROD	199-N-87
Nitrobenzene	B085H4	HEISPROD	199-N-87
3-Nitroaniline	B085H4	HEISPROD	199-N-87
Ethylbenzene	B085H4	HEISPROD	199-N-87
Styrene	B085H4	HEISPROD	199-N-87
cis-1,3-Dichloropropene	B085H4	HEISPROD	199-N-87
trans-1,3-Dichloropropene	B085H4	HEISPROD	199-N-87
1,2-Dichloroethane	B085H4	HEISPROD	199-N-87
4-Methyl-2-Pentanone	B085H4	HEISPROD	199-N-87
Toluene	B085H4	HEISPROD	199-N-87
Chlorobenzene	B085H4	HEISPROD	199-N-87
Dibromochloromethane	B085H4	HEISPROD	199-N-87
Tetrachloroethene	B085H4	HEISPROD	199-N-87
Xylenes (total)	B085H4	HEISPROD	199-N-87
1,2-Dichloroethene(Total)	B085H4	HEISPROD	199-N-87
Carbon tetrachloride	B085H4	HEISPROD	199-N-87
2-Hexanone	B085H4	HEISPROD	199-N-87
Acetone	B085H4	HEISPROD	199-N-87
Chloroform	B085H4	HEISPROD	199-N-87
Benzene	B085H4	HEISPROD	199-N-87
1,1,1-Trichloroethane	B085H4	HEISPROD	199-N-87
Bromomethane	B085H4	HEISPROD	199-N-87
Chloromethane	B085H4	HEISPROD	199-N-87
Chloroethane	B085H4	HEISPROD	199-N-87
Vinyl chloride	B085H4	HEISPROD	199-N-87
Methylenechloride	B085H4	HEISPROD	199-N-87
Carbon disulfide	B085H4	HEISPROD	199-N-87
Bromoform	B085H4	HEISPROD	199-N-87
Bromodichloromethane	B085H4	HEISPROD	199-N-87
1,1-Dichloroethane	B085H4	HEISPROD	199-N-87
1,1-Dichloroethene	B085H4	HEISPROD	199-N-87
1,2-Dichloropropane	B085H4	HEISPROD	199-N-87
2-Butanone	B085H4	HEISPROD	199-N-87
1,1,2-Trichloroethane	B085H4	HEISPROD	199-N-87
Trichloroethene	B085H4	HEISPROD	199-N-87
1,1,2,2-Tetrachloroethane	B085H4	HEISPROD	199-N-87
Cesium-137	B085H4	HEISPROD	199-N-87
Cobalt-60	B085H4	HEISPROD	199-N-87
Potassium-40	B085H4	HEISPROD	199-N-87
Ruthenium-106	B085H4	HEISPROD	199-N-87
Cesium-134	B085H4	HEISPROD	199-N-87
Zinc-65	B085H4	HEISPROD	199-N-87
Radium-226	B085H4	HEISPROD	199-N-87
Thorium-228	B085H4	HEISPROD	199-N-87
Chromium-51	B085H4	HEISPROD	199-N-87
Iron-59	B085H4	HEISPROD	199-N-87
Europium-152	B085H4	HEISPROD	199-N-87
Cerium-144	B085H4	HEISPROD	199-N-87
Europium-154	B085H4	HEISPROD	199-N-87
Thorium-232	B085H4	HEISPROD	199-N-87

Strontium-90	B085H4	HEISPROD	199-N-87
Gross alpha	B085H4	HEISPROD	199-N-87
Gross beta	B085H4	HEISPROD	199-N-87
Plutonium-238	B085H4	HEISPROD	199-N-87
Americium-241	B085H4	HEISPROD	199-N-87
Carbon-14	B085H4	HEISPROD	199-N-87
Uranium-235	B085H4	HEISPROD	199-N-87
Plutonium-239/240	B085H4	HEISPROD	199-N-87
Uranium-233/234	B085H4	HEISPROD	199-N-87
Uranium-238	B085H4	HEISPROD	199-N-87

METHOD_NAME	VALUE_RPTD	ANAL_UNITS_RPTD	LAB_QUALIFIER	VALIDATION_QUALIFIER
CLP_CYANIDE_S	0.54	mg/kg	U	
CLP_HG_CVAA	0.05	mg/kg	UJN	
CLP_METALS_GFAA	15.6	mg/kg	J*	
CLP_METALS_GFAA	0.26	mg/kg	U	
CLP_METALS_GFAA	2.1	mg/kg	B	
CLP_METALS_GFAA	0.71	mg/kg	U	
CLP_METALS_ICP	7170	mg/kg		
CLP_METALS_ICP	17400	mg/kg		
CLP_METALS_ICP	4570	mg/kg		
CLP_METALS_ICP	297	mg/kg	JN	
CLP_METALS_ICP	12.1	mg/kg		
CLP_METALS_ICP	1180	mg/kg		
CLP_METALS_ICP	0.81	mg/kg	B	
CLP_METALS_ICP	209	mg/kg	B	
CLP_METALS_ICP	3.8	mg/kg	UJN	
CLP_METALS_ICP	63.6	mg/kg		
CLP_METALS_ICP	0.53	mg/kg	B	
CLP_METALS_ICP	0.36	mg/kg	U	
CLP_METALS_ICP	13.1	mg/kg		
CLP_METALS_ICP	8.5	mg/kg	B	
CLP_METALS_ICP	16	mg/kg		
CLP_METALS_ICP	38.1	mg/kg		
CLP_METALS_ICP	41.4	mg/kg		
CLP_METALS_ICP	5950	mg/kg		
CLP_PESTPCB_GCMS	1.8	ug/kg	UJ	
CLP_PESTPCB_GCMS	3.4	ug/kg	UJ	
CLP_PESTPCB_GCMS	34	ug/kg	UJ	
CLP_PESTPCB_GCMS	980	ug/kg	JD	
CLP_PESTPCB_GCMS	70	ug/kg	UJ	
CLP_PESTPCB_GCMS	34	ug/kg	UJ	
CLP_PESTPCB_GCMS	34	ug/kg	UJ	
CLP_PESTPCB_GCMS	34	ug/kg	UJ	
CLP_PESTPCB_GCMS	1.8	ug/kg	UJ	
CLP_PESTPCB_GCMS	1.8	ug/kg	UJ	
CLP_PESTPCB_GCMS	1.8	ug/kg	UJ	
CLP_PESTPCB_GCMS	1.8	ug/kg	UJ	
CLP_PESTPCB_GCMS	3.4	ug/kg	UJ	
CLP_PESTPCB_GCMS	3.4	ug/kg	UJ	
CLP_PESTPCB_GCMS	1.8	ug/kg	UJ	
CLP_PESTPCB_GCMS	1.8	ug/kg	UJ	
CLP_PESTPCB_GCMS	34	ug/kg	UJ	
CLP_PESTPCB_GCMS	3.4	ug/kg	UJ	
CLP_PESTPCB_GCMS	1.8	ug/kg	UJ	
CLP_PESTPCB_GCMS	3.4	ug/kg	UJ	
CLP_PESTPCB_GCMS	3.4	ug/kg	UJ	
CLP_PESTPCB_GCMS	18	ug/kg	UJ	
CLP_PESTPCB_GCMS	3.4	ug/kg	UJ	
CLP_PESTPCB_GCMS	3.4	ug/kg	UJ	
CLP_PESTPCB_GCMS	3.4	ug/kg	UJ	
CLP_PESTPCB_GCMS	1.8	ug/kg	UJ	
CLP_PESTPCB_GCMS	180	ug/kg	UJ	

CLP_PESTPCB_GCMS	1.8	ug/kg	UJ	
CLP_SVOA_GCMS	850	ug/kg	UJ	
CLP_SVOA_GCMS	850	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	36	ug/kg	J	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	850	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	850	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	850	ug/kg	UJ	

CLP_SVOA_GCMS	350	ug/kg	UJ		
CLP_SVOA_GCMS	850	ug/kg	UJ		
CLP_SVOA_GCMS	350	ug/kg	UJ		
CLP_SVOA_GCMS	350	ug/kg	UJ		
CLP_SVOA_GCMS	350	ug/kg	UJ		
CLP_SVOA_GCMS	350	ug/kg	UJ		
CLP_SVOA_GCMS	350	ug/kg	UJ		
CLP_SVOA_GCMS	350	ug/kg	UJ		
CLP_SVOA_GCMS	350	ug/kg	UJ		
CLP_SVOA_GCMS	350	ug/kg	UJ		
CLP_SVOA_GCMS	850	ug/kg	UJ		
CLP_SVOA_GCMS	350	ug/kg	UJ		
CLP_SVOA_GCMS	850	ug/kg	UJ		
GAMMA_GS	1.3	pCi/g			
GAMMA_GS	0.93	pCi/g			
GAMMA_GS	12	pCi/g			
GAMMA_GS	0.4	pCi/g	U		
GAMMA_GS	0.05	pCi/g	U		
GAMMA_GS	0.1	pCi/g	U		
GAMMA_GS	0.55	pCi/g			
GAMMA_GS	0.78	pCi/g			
GAMMA_GS	0.4	pCi/g	U		
GAMMA_GS	0.1	pCi/g	U		
GAMMA_GS	0.09	pCi/g	U		
GAMMA_GS	0.2	pCi/g	U		
GAMMA_GS	0.06	pCi/g	U		
GAMMA_GS	0.95	pCi/g			
SAS_COUNT_LSC	2.4	pCi/g			
SAS_COUNT_LSC	3.3	pCi/g	UJ		
SAS_COUNT_LSC	27	pCi/g			
SAS_COUNT_LSC	-0.007	pCi/g	U	R	
SAS_COUNT_LSC	0.015	pCi/g	U		
SAS_COUNT_LSC	-3.9	pCi/g	U		
SAS_COUNT_LSC	0	pCi/g	U		
SAS_COUNT_LSC	0.028	pCi/g	U	R	
SAS_COUNT_LSC	0.64	pCi/g			
SAS_COUNT_LSC	0.71	pCi/g			
CLP_CYANIDE_S	0.53	mg/kg	U		
CLP_HG_CVAA	0.05	mg/kg	UJN		
CLP_METALS_GFAA	15.3	mg/kg	J*		
CLP_METALS_GFAA	0.25	mg/kg	U		
CLP_METALS_GFAA	2.3	mg/kg	S		
CLP_METALS_GFAA	0.7	mg/kg	U		
CLP_METALS_ICP	6200	mg/kg			
CLP_METALS_ICP	15600	mg/kg			
CLP_METALS_ICP	3980	mg/kg			
CLP_METALS_ICP	258	mg/kg	JN		
CLP_METALS_ICP	11	mg/kg			
CLP_METALS_ICP	1100	mg/kg			
CLP_METALS_ICP	0.82	mg/kg	U		
CLP_METALS_ICP	185	mg/kg	B		
CLP_METALS_ICP	3.9	mg/kg	UJN		

CLP_METALS_ICP	54.9	mg/kg		
CLP_METALS_ICP	0.34	mg/kg	B	
CLP_METALS_ICP	0.37	mg/kg	U	
CLP_METALS_ICP	10.9	mg/kg		
CLP_METALS_ICP	8.3	mg/kg	B	
CLP_METALS_ICP	13.2	mg/kg		
CLP_METALS_ICP	32.7	mg/kg		
CLP_METALS_ICP	38.9	mg/kg		
CLP_METALS_ICP	4500	mg/kg		
CLP_PESTPCB_GCMS	1.8	ug/kg	U	
CLP_PESTPCB_GCMS	3.5	ug/kg	U	
CLP_PESTPCB_GCMS	35	ug/kg	U	
CLP_PESTPCB_GCMS	1200	ug/kg	C	
CLP_PESTPCB_GCMS	70	ug/kg	U	
CLP_PESTPCB_GCMS	35	ug/kg	U	
CLP_PESTPCB_GCMS	35	ug/kg	U	
CLP_PESTPCB_GCMS	35	ug/kg	U	
CLP_PESTPCB_GCMS	1.8	ug/kg	U	
CLP_PESTPCB_GCMS	1.8	ug/kg	U	
CLP_PESTPCB_GCMS	1.8	ug/kg	U	
CLP_PESTPCB_GCMS	1.8	ug/kg	U	
CLP_PESTPCB_GCMS	3.5	ug/kg	U	
CLP_PESTPCB_GCMS	3.5	ug/kg	U	
CLP_PESTPCB_GCMS	1.8	ug/kg	U	
CLP_PESTPCB_GCMS	1.8	ug/kg	U	
CLP_PESTPCB_GCMS	35	ug/kg	U	
CLP_PESTPCB_GCMS	3.5	ug/kg	U	
CLP_PESTPCB_GCMS	1.8	ug/kg	U	
CLP_PESTPCB_GCMS	3.5	ug/kg	U	
CLP_PESTPCB_GCMS	3.5	ug/kg	U	
CLP_PESTPCB_GCMS	18	ug/kg	U	
CLP_PESTPCB_GCMS	3.5	ug/kg	U	
CLP_PESTPCB_GCMS	3.5	ug/kg	U	
CLP_PESTPCB_GCMS	3.5	ug/kg	U	
CLP_PESTPCB_GCMS	1.8	ug/kg	U	
CLP_PESTPCB_GCMS	180	ug/kg	U	
CLP_PESTPCB_GCMS	1.8	ug/kg	U	
CLP_SVOA_GCMS	840	ug/kg	UJ	
CLP_SVOA_GCMS	840	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	

CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	840	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	840	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	840	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	840	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	840	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	840	ug/kg	UJ	
GAMMA_GS	1.2	pCi/g		
GAMMA_GS	0.95	pCi/g		
GAMMA_GS	12	pCi/g		

GAMMA_GS	0.3	pCi/g	U	
GAMMA_GS	0.05	pCi/g	U	
GAMMA_GS	0.1	pCi/g	U	
GAMMA_GS	0.43	pCi/g		
GAMMA_GS	0.72	pCi/g		
GAMMA_GS	0.4	pCi/g	U	
GAMMA_GS	0.1	pCi/g	U	
GAMMA_GS	0.08	pCi/g	U	
GAMMA_GS	0.2	pCi/g	U	
GAMMA_GS	0.05	pCi/g	U	
GAMMA_GS	0.79	pCi/g		
SAS_COUNT_LSC	1.7	pCi/g	J	
SAS_COUNT_LSC	4.8	pCi/g	UJ	
SAS_COUNT_LSC	20	pCi/g		
SAS_COUNT_LSC	0.012	pCi/g	U	R
SAS_COUNT_LSC	0.004	pCi/g	U	
SAS_COUNT_LSC	0.29	pCi/g	U	
SAS_COUNT_LSC	0.074	pCi/g	U	
SAS_COUNT_LSC	0.035	pCi/g		R
SAS_COUNT_LSC	0.35	pCi/g		
SAS_COUNT_LSC	0.52	pCi/g		
CLP_CYANIDE_S	0.52	mg/kg	U	
CLP_HG_CVAA	0.05	mg/kg	UJN	
CLP_METALS_GFAA	7.3	mg/kg	J*	
CLP_METALS_GFAA	0.25	mg/kg	U	
CLP_METALS_GFAA	0.94	mg/kg	JW	
CLP_METALS_GFAA	0.7	mg/kg	U	
CLP_METALS_ICP	8050	mg/kg	J	
CLP_METALS_ICP	19700	mg/kg		
CLP_METALS_ICP	7150	mg/kg		
CLP_METALS_ICP	229	mg/kg	JN	
CLP_METALS_ICP	18.5	mg/kg		
CLP_METALS_ICP	661	mg/kg	B	
CLP_METALS_ICP	0.77	mg/kg	B	
CLP_METALS_ICP	828	mg/kg	B	
CLP_METALS_ICP	3.6	mg/kg	UJN	
CLP_METALS_ICP	56.9	mg/kg		
CLP_METALS_ICP	0.33	mg/kg	B	
CLP_METALS_ICP	0.34	mg/kg	U	
CLP_METALS_ICP	6.3	mg/kg		
CLP_METALS_ICP	14	mg/kg		
CLP_METALS_ICP	27	mg/kg		
CLP_METALS_ICP	33.2	mg/kg	J	
CLP_METALS_ICP	33.6	mg/kg		
CLP_METALS_ICP	6280	mg/kg		
CLP_PESTPCB_GCMS	1.8	ug/kg	U	
CLP_PESTPCB_GCMS	3.4	ug/kg	U	
CLP_PESTPCB_GCMS	34	ug/kg	U	
CLP_PESTPCB_GCMS	420	ug/kg	PC	
CLP_PESTPCB_GCMS	69	ug/kg	U	
CLP_PESTPCB_GCMS	34	ug/kg	U	
CLP_PESTPCB_GCMS	34	ug/kg	U	

CLP_PESTPCB_GCMS	34 ug/kg	U	
CLP_PESTPCB_GCMS	1.8 ug/kg	U	
CLP_PESTPCB_GCMS	1.8 ug/kg	U	
CLP_PESTPCB_GCMS	1.8 ug/kg	U	
CLP_PESTPCB_GCMS	1.8 ug/kg	U	
CLP_PESTPCB_GCMS	3.4 ug/kg	U	
CLP_PESTPCB_GCMS	3.4 ug/kg	U	
CLP_PESTPCB_GCMS	1.8 ug/kg	U	
CLP_PESTPCB_GCMS	1.8 ug/kg	U	
CLP_PESTPCB_GCMS	34 ug/kg	U	
CLP_PESTPCB_GCMS	3.4 ug/kg	U	
CLP_PESTPCB_GCMS	1.8 ug/kg	U	
CLP_PESTPCB_GCMS	3.4 ug/kg	U	
CLP_PESTPCB_GCMS	3.4 ug/kg	U	
CLP_PESTPCB_GCMS	18 ug/kg	U	
CLP_PESTPCB_GCMS	3.4 ug/kg	U	
CLP_PESTPCB_GCMS	3.4 ug/kg	U	
CLP_PESTPCB_GCMS	3.4 ug/kg	U	
CLP_PESTPCB_GCMS	1.8 ug/kg	U	
CLP_PESTPCB_GCMS	180 ug/kg	U	
CLP_PESTPCB_GCMS	1.8 ug/kg	U	
CLP_SVOA_GCMS	830 ug/kg	UJ	
CLP_SVOA_GCMS	830 ug/kg	UJ	
CLP_SVOA_GCMS	340 ug/kg	UJ	
CLP_SVOA_GCMS	340 ug/kg	UJ	
CLP_SVOA_GCMS	340 ug/kg	UJ	
CLP_SVOA_GCMS	340 ug/kg	UJ	
CLP_SVOA_GCMS	340 ug/kg	UJ	
CLP_SVOA_GCMS	340 ug/kg	UJ	
CLP_SVOA_GCMS	340 ug/kg	UJ	
CLP_SVOA_GCMS	340 ug/kg	UJ	
CLP_SVOA_GCMS	340 ug/kg	UJ	
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CLP_SVOA_GCMS	340 ug/kg	UJ	
CLP_SVOA_GCMS	340 ug/kg	UJ	
CLP_SVOA_GCMS	340 ug/kg	UJ	
CLP_SVOA_GCMS	340 ug/kg	UJ	
CLP_SVOA_GCMS	340 ug/kg	UJ	
CLP_SVOA_GCMS	340 ug/kg	UJ	
CLP_SVOA_GCMS	340 ug/kg	UJ	
CLP_SVOA_GCMS	340 ug/kg	UJ	
CLP_SVOA_GCMS	340 ug/kg	UJ	
CLP_SVOA_GCMS	340 ug/kg	UJ	
CLP_SVOA_GCMS	340 ug/kg	UJ	
CLP_SVOA_GCMS	340 ug/kg	UJ	
CLP_SVOA_GCMS	340 ug/kg	UJ	
CLP_SVOA_GCMS	340 ug/kg	UJ	
CLP_SVOA_GCMS	340 ug/kg	UJ	
CLP_SVOA_GCMS	340 ug/kg	UJ	
CLP_SVOA_GCMS	340 ug/kg	UJ	
CLP_SVOA_GCMS	340 ug/kg	UJ	
CLP_SVOA_GCMS	830 ug/kg	UJ	
CLP_SVOA_GCMS	340 ug/kg	UJ	

CLP_SVOA_GCMS	830	ug/kg	UJ	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	830	ug/kg	UJ	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	830	ug/kg	UJ	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	830	ug/kg	UJ	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	830	ug/kg	UJ	
GAMMA_GS	0.083	pCi/g		
GAMMA_GS	0.16	pCi/g		
GAMMA_GS	5.7	pCi/g		
GAMMA_GS	0.2	pCi/g	U	
GAMMA_GS	0.03	pCi/g	U	
GAMMA_GS	0.06	pCi/g	U	
GAMMA_GS	0.24	pCi/g		
GAMMA_GS	0.36	pCi/g		
GAMMA_GS	0.2	pCi/g	U	
GAMMA_GS	0.06	pCi/g	U	
GAMMA_GS	0.04	pCi/g	U	
GAMMA_GS	0.1	pCi/g	U	
GAMMA_GS	0.03	pCi/g	U	
GAMMA_GS	0.28	pCi/g		
SAS_COUNT_LSC	-0.21	pCi/g	U	
SAS_COUNT_LSC	3.5	pCi/g	UJ	
SAS_COUNT_LSC	9.4	pCi/g	J	
SAS_COUNT_LSC	-0.01	pCi/g	U	
SAS_COUNT_LSC	0	pCi/g	U	

SAS_COUNT_LSC	-1.6	pCi/g	U	
SAS_COUNT_LSC	-0.015	pCi/g	U	
SAS_COUNT_LSC	0	pCi/g	UJ	
SAS_COUNT_LSC	0.27	pCi/g	J	
SAS_COUNT_LSC	0.38	pCi/g		
CLP_CYANIDE_S	1.06	mg/kg	U	
CLP_HG_CVAA	0.05	mg/kg	U	
CLP_METALS_GFAA	6.7	mg/kg	JNS	
CLP_METALS_GFAA	1.06	mg/kg	U	
CLP_METALS_GFAA	0.66	mg/kg	JW	
CLP_METALS_GFAA	0.42	mg/kg	UJNW	
CLP_METALS_ICP	5180	mg/kg	J	
CLP_METALS_ICP	18700	mg/kg		
CLP_METALS_ICP	6700	mg/kg		
CLP_METALS_ICP	218	mg/kg	JN	
CLP_METALS_ICP	19	mg/kg		
CLP_METALS_ICP	765	mg/kg	B	
CLP_METALS_ICP	1.9	mg/kg	U	
CLP_METALS_ICP	461	mg/kg	B	
CLP_METALS_ICP	10.8	mg/kg	B	
CLP_METALS_ICP	53.1	mg/kg	JE	
CLP_METALS_ICP	0.47	mg/kg	B	
CLP_METALS_ICP	1.06	mg/kg	U	
CLP_METALS_ICP	5.9	mg/kg		
CLP_METALS_ICP	14.8	mg/kg		
CLP_METALS_ICP	29.8	mg/kg		
CLP_METALS_ICP	19.8	mg/kg	J	
CLP_METALS_ICP	40.6	mg/kg	JE	
CLP_METALS_ICP	4930	mg/kg		
CLP_PESTPCB_GCMS	1.8	ug/kg	U	
CLP_PESTPCB_GCMS	3.5	ug/kg	U	
CLP_PESTPCB_GCMS	120	ug/kg	J	
CLP_PESTPCB_GCMS	460	ug/kg		
CLP_PESTPCB_GCMS	71	ug/kg	U	
CLP_PESTPCB_GCMS	35	ug/kg	U	
CLP_PESTPCB_GCMS	35	ug/kg	U	
CLP_PESTPCB_GCMS	35	ug/kg	U	
CLP_PESTPCB_GCMS	1.8	ug/kg	U	
CLP_PESTPCB_GCMS	1.8	ug/kg	U	
CLP_PESTPCB_GCMS	1.8	ug/kg	U	
CLP_PESTPCB_GCMS	1.8	ug/kg	U	
CLP_PESTPCB_GCMS	3.5	ug/kg	U	
CLP_PESTPCB_GCMS	3.5	ug/kg	U	
CLP_PESTPCB_GCMS	1.8	ug/kg	U	
CLP_PESTPCB_GCMS	1.8	ug/kg	U	
CLP_PESTPCB_GCMS	35	ug/kg	U	
CLP_PESTPCB_GCMS	3.5	ug/kg	U	
CLP_PESTPCB_GCMS	1.8	ug/kg	U	
CLP_PESTPCB_GCMS	3.5	ug/kg	U	
CLP_PESTPCB_GCMS	3.5	ug/kg	U	
CLP_PESTPCB_GCMS	18	ug/kg	U	
CLP_PESTPCB_GCMS	3.5	ug/kg	U	

CLP_PESTPCB_GCMS	3.5 ug/kg	U	
CLP_PESTPCB_GCMS	3.5 ug/kg	U	
CLP_PESTPCB_GCMS	1.8 ug/kg	U	
CLP_PESTPCB_GCMS	180 ug/kg	U	
CLP_PESTPCB_GCMS	1.8 ug/kg	J	
CLP_SVOA_GCMS	880 ug/kg	UJ	
CLP_SVOA_GCMS	880 ug/kg	UJ	
CLP_SVOA_GCMS	350 ug/kg	UJ	
CLP_SVOA_GCMS	350 ug/kg	UJ	
CLP_SVOA_GCMS	350 ug/kg	UJ	
CLP_SVOA_GCMS	350 ug/kg	UJ	
CLP_SVOA_GCMS	350 ug/kg	UJ	
CLP_SVOA_GCMS	350 ug/kg	UJ	
CLP_SVOA_GCMS	350 ug/kg	UJ	
CLP_SVOA_GCMS	350 ug/kg	UJ	
CLP_SVOA_GCMS	350 ug/kg	UJ	
CLP_SVOA_GCMS	350 ug/kg	UJ	
CLP_SVOA_GCMS	350 ug/kg	UJ	
CLP_SVOA_GCMS	350 ug/kg	UJ	
CLP_SVOA_GCMS	350 ug/kg	UJ	
CLP_SVOA_GCMS	350 ug/kg	UJ	
CLP_SVOA_GCMS	350 ug/kg	UJ	
CLP_SVOA_GCMS	350 ug/kg	UJ	
CLP_SVOA_GCMS	350 ug/kg	UJ	
CLP_SVOA_GCMS	350 ug/kg	UJ	
CLP_SVOA_GCMS	350 ug/kg	U	
CLP_SVOA_GCMS	350 ug/kg	UJ	
CLP_SVOA_GCMS	350 ug/kg	UJ	
CLP_SVOA_GCMS	350 ug/kg	UJ	
CLP_SVOA_GCMS	350 ug/kg	UJ	
CLP_SVOA_GCMS	880 ug/kg	UJ	
CLP_SVOA_GCMS	350 ug/kg	UJ	
CLP_SVOA_GCMS	880 ug/kg	UJ	
CLP_SVOA_GCMS	350 ug/kg	UJ	
CLP_SVOA_GCMS	350 ug/kg	UJ	
CLP_SVOA_GCMS	350 ug/kg	UJ	
CLP_SVOA_GCMS	350 ug/kg	UJ	
CLP_SVOA_GCMS	350 ug/kg	UJ	
CLP_SVOA_GCMS	350 ug/kg	UJ	
CLP_SVOA_GCMS	350 ug/kg	UJ	
CLP_SVOA_GCMS	350 ug/kg	UJ	
CLP_SVOA_GCMS	350 ug/kg	UJ	
CLP_SVOA_GCMS	350 ug/kg	UJ	
CLP_SVOA_GCMS	350 ug/kg	UJ	
CLP_SVOA_GCMS	350 ug/kg	UJ	
CLP_SVOA_GCMS	350 ug/kg	UJ	
CLP_SVOA_GCMS	350 ug/kg	UJ	
CLP_SVOA_GCMS	21 ug/kg	UJ	
CLP_SVOA_GCMS	350 ug/kg	UJ	
CLP_SVOA_GCMS	350 ug/kg	UJ	
CLP_SVOA_GCMS	350 ug/kg	UJ	

CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	880	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	880	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	880	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	880	ug/kg	UJ	
GAMMA_GS	0.0083	pCi/g	U	
GAMMA_GS	0.111	pCi/g		
GAMMA_GS	0.252	pCi/g		
GAMMA_GS	5.43	pCi/g		
GAMMA_GS	-0.036	pCi/g	U	
GAMMA_GS	0.013	pCi/g	U	
GAMMA_GS	0.045	pCi/g	U	
GAMMA_GS	0.015	pCi/g	U	
GAMMA_GS	0.018	pCi/g	U	
GAMMA_GS	-0.023	pCi/g	U	
GAMMA_GS	0.0044	pCi/g	U	
GAMMA_GS	-0.013	pCi/g	U	
GAMMA_GS	-0.011	pCi/g	U	
GAMMA_GS	0.652	pCi/g		
GAMMA_GS	0.347	pCi/g		
GAMMA_GS	-0.062	pCi/g	U	
GAMMA_GS	-0.0029	pCi/g	U	
GAMMA_GS	-0.18	pCi/g	U	
GAMMA_GS	-0.014	pCi/g	U	
GAMMA_GS	-0.015	pCi/g	U	
GAMMA_GS	-0.2	pCi/g	U	
GAMMA_GS	-0.012	pCi/g	U	
SAS_COUNT_LSC	0.099	pCi/g	UJ	
SAS_COUNT_LSC	9.7	pCi/g		
SAS_COUNT_LSC	15	pCi/g		
SAS_COUNT_LSC	0.00063	pCi/g	U	
SAS_COUNT_LSC	0.2	pCi/g	U	
SAS_COUNT_LSC	0.00068	pCi/g	U	
SAS_COUNT_LSC	0.0033	pCi/g	U	
SAS_COUNT_LSC	0.13	pCi/g		
CLP_CYANIDE_S	0.54	mg/kg	U	
CLP_HG_CVAA	0.05	mg/kg	JN	
CLP_METALS_GFAA	8.6	mg/kg	J*	
CLP_METALS_GFAA	0.26	mg/kg	U	
CLP_METALS_GFAA	2.5	mg/kg	S	

CLP_METALS_GFAA	0.72	mg/kg	UJW
CLP_METALS_ICP	6700	mg/kg	
CLP_METALS_ICP	16300	mg/kg	
CLP_METALS_ICP	4260	mg/kg	
CLP_METALS_ICP	273	mg/kg	JN
CLP_METALS_ICP	11.5	mg/kg	
CLP_METALS_ICP	1290	mg/kg	
CLP_METALS_ICP	0.83	mg/kg	U
CLP_METALS_ICP	171	mg/kg	B
CLP_METALS_ICP	3.9	mg/kg	UJN
CLP_METALS_ICP	58.9	mg/kg	
CLP_METALS_ICP	0.35	mg/kg	B
CLP_METALS_ICP	0.37	mg/kg	U
CLP_METALS_ICP	12.4	mg/kg	
CLP_METALS_ICP	8.3	mg/kg	B
CLP_METALS_ICP	14.7	mg/kg	
CLP_METALS_ICP	34.2	mg/kg	
CLP_METALS_ICP	42.4	mg/kg	
CLP_METALS_ICP	5620	mg/kg	
CLP_PESTPCB_GCMS	1.8	ug/kg	UJ
CLP_PESTPCB_GCMS	3.5	ug/kg	UJ
CLP_PESTPCB_GCMS	35	ug/kg	UJ
CLP_PESTPCB_GCMS	3000	ug/kg	J
CLP_PESTPCB_GCMS	72	ug/kg	UJ
CLP_PESTPCB_GCMS	35	ug/kg	UJ
CLP_PESTPCB_GCMS	35	ug/kg	UJ
CLP_PESTPCB_GCMS	35	ug/kg	UJ
CLP_PESTPCB_GCMS	1.8	ug/kg	UJ
CLP_PESTPCB_GCMS	1.8	ug/kg	UJ
CLP_PESTPCB_GCMS	1.8	ug/kg	UJ
CLP_PESTPCB_GCMS	1.8	ug/kg	UJ
CLP_PESTPCB_GCMS	3.5	ug/kg	UJ
CLP_PESTPCB_GCMS	3.5	ug/kg	UJ
CLP_PESTPCB_GCMS	1.8	ug/kg	UJ
CLP_PESTPCB_GCMS	1.8	ug/kg	UJ
CLP_PESTPCB_GCMS	35	ug/kg	UJ
CLP_PESTPCB_GCMS	3.5	ug/kg	UJ
CLP_PESTPCB_GCMS	1.8	ug/kg	UJ
CLP_PESTPCB_GCMS	3.5	ug/kg	UJ
CLP_PESTPCB_GCMS	3.5	ug/kg	UJ
CLP_PESTPCB_GCMS	18	ug/kg	UJ
CLP_PESTPCB_GCMS	3.5	ug/kg	UJ
CLP_PESTPCB_GCMS	3.5	ug/kg	UJ
CLP_PESTPCB_GCMS	3.5	ug/kg	UJ
CLP_PESTPCB_GCMS	1.8	ug/kg	UJ
CLP_PESTPCB_GCMS	180	ug/kg	UJ
CLP_PESTPCB_GCMS	1.8	ug/kg	UJ
CLP_SVOA_GCMS	870	ug/kg	UJ
CLP_SVOA_GCMS	870	ug/kg	UJ
CLP_SVOA_GCMS	360	ug/kg	UJ
CLP_SVOA_GCMS	360	ug/kg	UJ
CLP_SVOA_GCMS	360	ug/kg	UJ

CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	870	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	870	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	870	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	870	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	

CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	870	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	870	ug/kg	UJ	
GAMMA_GS	0.17	pCi/g		
GAMMA_GS	0.43	pCi/g		
GAMMA_GS	13	pCi/g		
GAMMA_GS	0.3	pCi/g	U	
GAMMA_GS	0.04	pCi/g	U	
GAMMA_GS	0.1	pCi/g	U	
GAMMA_GS	0.54	pCi/g		
GAMMA_GS	1	pCi/g		
GAMMA_GS	0.3	pCi/g	U	
GAMMA_GS	0.1	pCi/g	U	
GAMMA_GS	0.07	pCi/g	U	
GAMMA_GS	0.2	pCi/g	U	
GAMMA_GS	0.05	pCi/g	U	
GAMMA_GS	0.79	pCi/g		
SAS_COUNT_LSC	-0.079	pCi/g	U	
SAS_COUNT_LSC	8	pCi/g	J	
SAS_COUNT_LSC	11	pCi/g		
SAS_COUNT_LSC	-0.005	pCi/g	U	
SAS_COUNT_LSC	0.006	pCi/g	U	
SAS_COUNT_LSC	-5.2	pCi/g	U	
SAS_COUNT_LSC	0.059	pCi/g	U	
SAS_COUNT_LSC	0.024	pCi/g	UJ	
SAS_COUNT_LSC	0.63	pCi/g		
SAS_COUNT_LSC	0.73	pCi/g		
CLP_CYANIDE_S	0.52	mg/kg	U	
CLP_HG_CVAA	0.05	mg/kg	UJN	
CLP_METALS_GFAA	15.8	mg/kg	J*	
CLP_METALS_GFAA	0.25	mg/kg	U	
CLP_METALS_GFAA	2	mg/kg	B	
CLP_METALS_GFAA	0.68	mg/kg	U	
CLP_METALS_ICP	6470	mg/kg		
CLP_METALS_ICP	16700	mg/kg		
CLP_METALS_ICP	5540	mg/kg		
CLP_METALS_ICP	235	mg/kg	JN	
CLP_METALS_ICP	15.3	mg/kg		
CLP_METALS_ICP	805	mg/kg	B	
CLP_METALS_ICP	0.79	mg/kg	U	
CLP_METALS_ICP	437	mg/kg	B	
CLP_METALS_ICP	3.7	mg/kg	UJN	
CLP_METALS_ICP	48	mg/kg		
CLP_METALS_ICP	0.33	mg/kg	B	
CLP_METALS_ICP	0.35	mg/kg	U	
CLP_METALS_ICP	9.5	mg/kg		
CLP_METALS_ICP	9.7	mg/kg	B	
CLP_METALS_ICP	20.5	mg/kg		

CLP_METALS_ICP	31.1	mg/kg		
CLP_METALS_ICP	91.6	mg/kg		
CLP_METALS_ICP	5850	mg/kg		
CLP_PESTPCB_GCMS	44	ug/kg	UJ	
CLP_PESTPCB_GCMS	85	ug/kg	UJ	
CLP_PESTPCB_GCMS	850	ug/kg	UJ	
CLP_PESTPCB_GCMS	590	ug/kg	J	
CLP_PESTPCB_GCMS	1700	ug/kg	UJ	
CLP_PESTPCB_GCMS	850	ug/kg	UJ	
CLP_PESTPCB_GCMS	850	ug/kg	UJ	
CLP_PESTPCB_GCMS	850	ug/kg	UJ	
CLP_PESTPCB_GCMS	44	ug/kg	UJ	
CLP_PESTPCB_GCMS	44	ug/kg	UJ	
CLP_PESTPCB_GCMS	44	ug/kg	UJ	
CLP_PESTPCB_GCMS	44	ug/kg	UJ	
CLP_PESTPCB_GCMS	85	ug/kg	UJ	
CLP_PESTPCB_GCMS	85	ug/kg	UJ	
CLP_PESTPCB_GCMS	44	ug/kg	UJ	
CLP_PESTPCB_GCMS	44	ug/kg	UJ	
CLP_PESTPCB_GCMS	850	ug/kg	UJ	
CLP_PESTPCB_GCMS	85	ug/kg	UJ	
CLP_PESTPCB_GCMS	44	ug/kg	UJ	
CLP_PESTPCB_GCMS	85	ug/kg	UJ	
CLP_PESTPCB_GCMS	85	ug/kg	UJ	
CLP_PESTPCB_GCMS	440	ug/kg	UJ	
CLP_PESTPCB_GCMS	85	ug/kg	UJ	
CLP_PESTPCB_GCMS	85	ug/kg	UJ	
CLP_PESTPCB_GCMS	85	ug/kg	UJ	
CLP_PESTPCB_GCMS	44	ug/kg	UJ	
CLP_PESTPCB_GCMS	4400	ug/kg	UJ	
CLP_PESTPCB_GCMS	44	ug/kg	UJ	
CLP_SVOA_GCMS	830	ug/kg	UJ	
CLP_SVOA_GCMS	830	ug/kg	UJ	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	48	ug/kg	J	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	110	ug/kg	J	
CLP_SVOA_GCMS	46	ug/kg	J	
CLP_SVOA_GCMS	340	ug/kg	UJ	

CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	69	ug/kg	J	
CLP_SVOA_GCMS	99	ug/kg	J	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	62	ug/kg	J	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	830	ug/kg	UJ	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	830	ug/kg	UJ	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	63	ug/kg	J	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	95	ug/kg	UJ	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	830	ug/kg	U	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	830	ug/kg	UJ	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	830	ug/kg	UJ	
CLP_SVOA_GCMS	340	ug/kg	UJ	
CLP_SVOA_GCMS	830	ug/kg	UJ	
GAMMA_GS	1.5	pCi/g		
GAMMA_GS	7	pCi/g		
GAMMA_GS	9.2	pCi/g		
GAMMA_GS	0.7	pCi/g	U	
GAMMA_GS	0.1	pCi/g	U	
GAMMA_GS	0.3	pCi/g	U	
GAMMA_GS	0.43	pCi/g		
GAMMA_GS	0.51	pCi/g		
GAMMA_GS	0.6	pCi/g	U	

GAMMA_GS	0.3	pCi/g	U	
GAMMA_GS	0.1	pCi/g	U	
GAMMA_GS	0.3	pCi/g	U	
GAMMA_GS	0.08	pCi/g	U	
GAMMA_GS	0.57	pCi/g		
SAS_COUNT_LSC	1.1	pCi/g	J	
SAS_COUNT_LSC	3.3	pCi/g	UJ	
SAS_COUNT_LSC	31	pCi/g		
SAS_COUNT_LSC	-0.005	pCi/g	U	
SAS_COUNT_LSC	0.039	pCi/g	J	
SAS_COUNT_LSC	0.23	pCi/g	U	
SAS_COUNT_LSC	0.055	pCi/g	U	
SAS_COUNT_LSC	0.064	pCi/g	J	
SAS_COUNT_LSC	0.6	pCi/g		
SAS_COUNT_LSC	0.65	pCi/g		
CLP_CYANIDE_S	0.5	ug/kg	U	
CLP_HG_CVAA	0.05	ug/kg	UJ	
CLP_METALS_GFAA	0.65	ug/kg	J	
CLP_METALS_GFAA	0.24	ug/kg	U	
CLP_METALS_GFAA	0.46	ug/kg	B	
CLP_METALS_GFAA	0.65	ug/kg	U	
CLP_METALS_ICP	52.6	ug/kg		
CLP_METALS_ICP	118	ug/kg		
CLP_METALS_ICP	11.1	ug/kg	B	
CLP_METALS_ICP	0.38	ug/kg	BJ	
CLP_METALS_ICP	1.2	ug/kg	U	
CLP_METALS_ICP	36.9	ug/kg	U	
CLP_METALS_ICP	0.75	ug/kg	U	
CLP_METALS_ICP	16.6	ug/kg	B	
CLP_METALS_ICP	3.5	ug/kg	UJ	
CLP_METALS_ICP	0.5	ug/kg	B	
CLP_METALS_ICP	0.1	ug/kg	U	
CLP_METALS_ICP	0.33	ug/kg	U	
CLP_METALS_ICP	1.1	ug/kg	U	
CLP_METALS_ICP	0.75	ug/kg	U	
CLP_METALS_ICP	0.83	ug/kg	U	
CLP_METALS_ICP	0.65	ug/kg	U	
CLP_METALS_ICP	0.67	ug/kg	U	
CLP_METALS_ICP	11.3	ug/kg	B	
CLP_PESTPCB_GCMS	1.7	ug/kg	UJ	
CLP_PESTPCB_GCMS	3.3	ug/kg	UJ	
CLP_PESTPCB_GCMS	33	ug/kg	UJ	
CLP_PESTPCB_GCMS	33	ug/kg	UJ	
CLP_PESTPCB_GCMS	67	ug/kg	UJ	
CLP_PESTPCB_GCMS	33	ug/kg	UJ	
CLP_PESTPCB_GCMS	33	ug/kg	UJ	
CLP_PESTPCB_GCMS	33	ug/kg	UJ	
CLP_PESTPCB_GCMS	0.23	ug/kg	J	
CLP_PESTPCB_GCMS	1.7	ug/kg	UJ	
CLP_PESTPCB_GCMS	1.7	ug/kg	UJ	
CLP_PESTPCB_GCMS	1.7	ug/kg	UJ	
CLP_PESTPCB_GCMS	3.3	ug/kg	UJ	

CLP_PESTPCB_GCMS	0.54	ug/kg	J	
CLP_PESTPCB_GCMS	1.7	ug/kg	UJ	
CLP_PESTPCB_GCMS	1.7	ug/kg	UJ	
CLP_PESTPCB_GCMS	33	ug/kg	UJ	
CLP_PESTPCB_GCMS	3.3	ug/kg	UJ	
CLP_PESTPCB_GCMS	0.24	ug/kg		R
CLP_PESTPCB_GCMS	0.45	ug/kg	J	
CLP_PESTPCB_GCMS	0.6	ug/kg	J	
CLP_PESTPCB_GCMS	17	ug/kg	UJ	
CLP_PESTPCB_GCMS	3.3	ug/kg	UJ	
CLP_PESTPCB_GCMS	3.3	ug/kg	UJ	
CLP_PESTPCB_GCMS	3.3	ug/kg	UJ	
CLP_PESTPCB_GCMS	0.24	ug/kg		R
CLP_PESTPCB_GCMS	170	ug/kg	UJ	
CLP_PESTPCB_GCMS	1.7	ug/kg	UJ	
CLP_SVOA_GCMS	790	ug/kg	UJ	
CLP_SVOA_GCMS	790	ug/kg	UJ	
CLP_SVOA_GCMS	330	ug/kg	UJ	
CLP_SVOA_GCMS	330	ug/kg	UJ	
CLP_SVOA_GCMS	330	ug/kg	UJ	
CLP_SVOA_GCMS	330	ug/kg	UJ	
CLP_SVOA_GCMS	330	ug/kg	UJ	
CLP_SVOA_GCMS	330	ug/kg	UJ	
CLP_SVOA_GCMS	330	ug/kg	UJ	
CLP_SVOA_GCMS	330	ug/kg	UJ	
CLP_SVOA_GCMS	330	ug/kg	UJ	
CLP_SVOA_GCMS	330	ug/kg	UJ	
CLP_SVOA_GCMS	330	ug/kg	UJ	
CLP_SVOA_GCMS	330	ug/kg	UJ	
CLP_SVOA_GCMS	330	ug/kg	UJ	
CLP_SVOA_GCMS	330	ug/kg	UJ	
CLP_SVOA_GCMS	330	ug/kg	UJ	
CLP_SVOA_GCMS	330	ug/kg	UJ	
CLP_SVOA_GCMS	330	ug/kg	UJ	
CLP_SVOA_GCMS	330	ug/kg	UJ	
CLP_SVOA_GCMS	330	ug/kg	UJ	
CLP_SVOA_GCMS	330	ug/kg	UJ	
CLP_SVOA_GCMS	330	ug/kg	UJ	
CLP_SVOA_GCMS	330	ug/kg	UJ	
CLP_SVOA_GCMS	330	ug/kg	UJ	
CLP_SVOA_GCMS	330	ug/kg	UJ	
CLP_SVOA_GCMS	330	ug/kg	UJ	
CLP_SVOA_GCMS	330	ug/kg	UJ	
CLP_SVOA_GCMS	330	ug/kg	UJ	
CLP_SVOA_GCMS	790	ug/kg	UJ	
CLP_SVOA_GCMS	330	ug/kg	UJ	
CLP_SVOA_GCMS	790	ug/kg	UJ	
CLP_SVOA_GCMS	330	ug/kg	UJ	
CLP_SVOA_GCMS	330	ug/kg	UJ	
CLP_SVOA_GCMS	330	ug/kg	UJ	
CLP_SVOA_GCMS	330	ug/kg	UJ	
CLP_SVOA_GCMS	330	ug/kg	UJ	

CLP_SVOA_GCMS	330	ug/kg	UJ	
CLP_SVOA_GCMS	330	ug/kg	UJ	
CLP_SVOA_GCMS	330	ug/kg	UJ	
CLP_SVOA_GCMS	330	ug/kg	UJ	
CLP_SVOA_GCMS	330	ug/kg	UJ	
CLP_SVOA_GCMS	330	ug/kg	UJ	
CLP_SVOA_GCMS	38	ug/kg	J	
CLP_SVOA_GCMS	330	ug/kg	UJ	
CLP_SVOA_GCMS	330	ug/kg	UJ	
CLP_SVOA_GCMS	330	ug/kg	UJ	
CLP_SVOA_GCMS	330	ug/kg	UJ	
CLP_SVOA_GCMS	330	ug/kg	UJ	
CLP_SVOA_GCMS	330	ug/kg	UJ	
CLP_SVOA_GCMS	790	ug/kg	UJ	
CLP_SVOA_GCMS	330	ug/kg	UJ	
CLP_SVOA_GCMS	790	ug/kg	UJ	
CLP_SVOA_GCMS	330	ug/kg	UJ	
CLP_SVOA_GCMS	330	ug/kg	UJ	
CLP_SVOA_GCMS	330	ug/kg	UJ	
CLP_SVOA_GCMS	330	ug/kg	UJ	
CLP_SVOA_GCMS	330	ug/kg	UJ	
CLP_SVOA_GCMS	330	ug/kg	UJ	
CLP_SVOA_GCMS	330	ug/kg	UJ	
CLP_SVOA_GCMS	330	ug/kg	UJ	
CLP_SVOA_GCMS	790	ug/kg	UJ	
CLP_SVOA_GCMS	330	ug/kg	UJ	
CLP_SVOA_GCMS	790	ug/kg	UJ	
GAMMA_GS	0.02	pCi/g	U	
GAMMA_GS	0.02	pCi/g	U	
GAMMA_GS	0.64	pCi/g		
GAMMA_GS	0.2	pCi/g	U	
GAMMA_GS	0.02	pCi/g	U	
GAMMA_GS	0.03	pCi/g	U	
GAMMA_GS	0.057	pCi/g		
GAMMA_GS	0.15	pCi/g		
GAMMA_GS	0.2	pCi/g	U	
GAMMA_GS	0.05	pCi/g	U	
GAMMA_GS	0.04	pCi/g	U	
GAMMA_GS	0.1	pCi/g	U	
GAMMA_GS	0.03	pCi/g	U	
GAMMA_GS	0.11	pCi/g		
SAS_COUNT_LSC	-0.017	pCi/g	U	
SAS_COUNT_LSC	-2	pCi/g	UJ	
SAS_COUNT_LSC	1.3	pCi/g	U	
SAS_COUNT_LSC	0.023	pCi/g	U	
SAS_COUNT_LSC	-0.005	pCi/g	U	
SAS_COUNT_LSC	0.28	pCi/g	U	
SAS_COUNT_LSC	0	pCi/g	U	
SAS_COUNT_LSC	0.011	pCi/g	UJ	
SAS_COUNT_LSC	0.13	pCi/g	J	
SAS_COUNT_LSC	0.048	pCi/g	U	
300.0_ANIONS_IC	1.3	mg/kg		R

300.0_ANIONS_IC	5	mg/kg		
300.0_ANIONS_IC	0.5	mg/kg	J	
353.2_NO3/NO2	8.69	mg/kg	J	
CLP_CYANIDE_S	0.54	mg/kg	U	
CLP_HG_CVAA	0.05	mg/kg	UJN	
CLP_METALS_GFAA	171	mg/kg	J*	
CLP_METALS_GFAA	0.27	mg/kg	U	
CLP_METALS_GFAA	2.1	mg/kg	B	
CLP_METALS_GFAA	0.73	mg/kg	US	
CLP_METALS_ICP	7040	mg/kg		
CLP_METALS_ICP	15800	mg/kg		
CLP_METALS_ICP	3560	mg/kg		
CLP_METALS_ICP	275	mg/kg	JN	
CLP_METALS_ICP	11.3	mg/kg		
CLP_METALS_ICP	1710	mg/kg		
CLP_METALS_ICP	0.83	mg/kg	U	
CLP_METALS_ICP	173	mg/kg	B	
CLP_METALS_ICP	3.9	mg/kg	UJN	
CLP_METALS_ICP	61.6	mg/kg		
CLP_METALS_ICP	0.35	mg/kg	B	
CLP_METALS_ICP	0.37	mg/kg	U	
CLP_METALS_ICP	15	mg/kg		
CLP_METALS_ICP	7.8	mg/kg	B	
CLP_METALS_ICP	12.9	mg/kg		
CLP_METALS_ICP	34.6	mg/kg		
CLP_METALS_ICP	68.8	mg/kg		
CLP_METALS_ICP	4020	mg/kg		
CLP_PESTPCB_GCMS	1.8	ug/kg	UJ	
CLP_PESTPCB_GCMS	3.5	ug/kg	UJ	
CLP_PESTPCB_GCMS	22	ug/kg	J	
CLP_PESTPCB_GCMS	35	ug/kg	J	
CLP_PESTPCB_GCMS	71	ug/kg	UJ	
CLP_PESTPCB_GCMS	35	ug/kg	UJ	
CLP_PESTPCB_GCMS	35	ug/kg	UJ	
CLP_PESTPCB_GCMS	35	ug/kg	UJ	
CLP_PESTPCB_GCMS	1.8	ug/kg	UJ	
CLP_PESTPCB_GCMS	1.8	ug/kg	UJ	
CLP_PESTPCB_GCMS	1.8	ug/kg	UJ	
CLP_PESTPCB_GCMS	1.8	ug/kg	UJ	
CLP_PESTPCB_GCMS	3.5	ug/kg	UJ	
CLP_PESTPCB_GCMS	3.5	ug/kg	UJ	
CLP_PESTPCB_GCMS	1.8	ug/kg	UJ	
CLP_PESTPCB_GCMS	1.8	ug/kg	UJ	
CLP_PESTPCB_GCMS	35	ug/kg	UJ	
CLP_PESTPCB_GCMS	3.5	ug/kg	UJ	
CLP_PESTPCB_GCMS	1.8	ug/kg	UJ	
CLP_PESTPCB_GCMS	3.5	ug/kg	UJ	
CLP_PESTPCB_GCMS	3.5	ug/kg	UJ	
CLP_PESTPCB_GCMS	18	ug/kg	UJ	
CLP_PESTPCB_GCMS	3.5	ug/kg	UJ	
CLP_PESTPCB_GCMS	3.5	ug/kg	UJ	
CLP_PESTPCB_GCMS	3.5	ug/kg	UJ	

CLP_PESTPCB_GCMS	1.8	ug/kg	UJ	
CLP_PESTPCB_GCMS	180	ug/kg	UJ	
CLP_PESTPCB_GCMS	1.8	ug/kg	UJ	
CLP_SVOA_GCMS	850	ug/kg	UJ	
CLP_SVOA_GCMS	850	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	51	ug/kg	J	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	850	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	850	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	

CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	850	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	850	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	850	ug/kg	UJ	
CLP_SVOA_GCMS	350	ug/kg	UJ	
CLP_SVOA_GCMS	850	ug/kg	UJ	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
GAMMA_GS	3.8	pCi/g		
GAMMA_GS	100	pCi/g		
GAMMA_GS	11	pCi/g		
GAMMA_GS	2	pCi/g	U	

GAMMA_GS	0.4	pCi/g	U	
GAMMA_GS	0.9	pCi/g	U	
GAMMA_GS	0.7	pCi/g	U	
GAMMA_GS	0.68	pCi/g		
GAMMA_GS	2	pCi/g	U	
GAMMA_GS	1	pCi/g	U	
GAMMA_GS	0.4	pCi/g	U	
GAMMA_GS	0.9	pCi/g	U	
GAMMA_GS	0.2	pCi/g	U	
GAMMA_GS	2	pCi/g	U	
SAS_COUNT_LSC	0.17	pCi/g	U	
SAS_COUNT_LSC	9.5	pCi/g	J	
SAS_COUNT_LSC	58	pCi/g		
SAS_COUNT_LSC	0.016	pCi/g	U	
SAS_COUNT_LSC	0.062	pCi/g		
SAS_COUNT_LSC	-2.5	pCi/g	U	
SAS_COUNT_LSC	0.027	pCi/g	U	
SAS_COUNT_LSC	0.056	pCi/g	J	
SAS_COUNT_LSC	0.56	pCi/g		
SAS_COUNT_LSC	0.56	pCi/g		
300.0_ANIONS_IC	1.5	mg/kg		R
300.0_ANIONS_IC	5	mg/kg		
300.0_ANIONS_IC	0.9	mg/kg	J	
353.2_NO3/NO2	15	mg/kg		
CLP_CYANIDE_S	0.51	mg/kg	U	
CLP_HG_CVAA	0.05	mg/kg	UJN	
CLP_METALS_GFAA	16.6	mg/kg	J*	
CLP_METALS_GFAA	0.26	mg/kg	U	
CLP_METALS_GFAA	2.1	mg/kg	B	
CLP_METALS_GFAA	0.73	mg/kg	U	
CLP_METALS_ICP	7250	mg/kg		
CLP_METALS_ICP	14900	mg/kg		
CLP_METALS_ICP	3800	mg/kg		
CLP_METALS_ICP	269	mg/kg	JN	
CLP_METALS_ICP	10.5	mg/kg		
CLP_METALS_ICP	1600	mg/kg		
CLP_METALS_ICP	0.83	mg/kg	U	
CLP_METALS_ICP	137	mg/kg	B	
CLP_METALS_ICP	3.9	mg/kg	UJN	
CLP_METALS_ICP	67.4	mg/kg		
CLP_METALS_ICP	0.43	mg/kg	B	
CLP_METALS_ICP	0.37	mg/kg	U	
CLP_METALS_ICP	10.5	mg/kg		
CLP_METALS_ICP	7.5	mg/kg	B	
CLP_METALS_ICP	12.1	mg/kg		
CLP_METALS_ICP	30	mg/kg		
CLP_METALS_ICP	32	mg/kg		
CLP_METALS_ICP	3710	mg/kg		
CLP_PESTPCB_GCMS	1.8	ug/kg	UJ	
CLP_PESTPCB_GCMS	3.6	ug/kg	UJ	
CLP_PESTPCB_GCMS	36	ug/kg	UJ	
CLP_PESTPCB_GCMS	36	ug/kg	UJ	

CLP_PESTPCB_GCMS	72	ug/kg	UJ	
CLP_PESTPCB_GCMS	36	ug/kg	UJ	
CLP_PESTPCB_GCMS	36	ug/kg	UJ	
CLP_PESTPCB_GCMS	36	ug/kg	UJ	
CLP_PESTPCB_GCMS	1.8	ug/kg	UJ	
CLP_PESTPCB_GCMS	1.8	ug/kg	UJ	
CLP_PESTPCB_GCMS	1.8	ug/kg	UJ	
CLP_PESTPCB_GCMS	1.8	ug/kg	UJ	
CLP_PESTPCB_GCMS	3.6	ug/kg	UJ	
CLP_PESTPCB_GCMS	3.6	ug/kg	UJ	
CLP_PESTPCB_GCMS	1.8	ug/kg	UJ	
CLP_PESTPCB_GCMS	1.8	ug/kg	UJ	
CLP_PESTPCB_GCMS	36	ug/kg	UJ	
CLP_PESTPCB_GCMS	3.6	ug/kg	UJ	
CLP_PESTPCB_GCMS	1.8	ug/kg	UJ	
CLP_PESTPCB_GCMS	3.6	ug/kg	UJ	
CLP_PESTPCB_GCMS	3.6	ug/kg	UJ	
CLP_PESTPCB_GCMS	18	ug/kg	UJ	
CLP_PESTPCB_GCMS	3.6	ug/kg	UJ	
CLP_PESTPCB_GCMS	3.6	ug/kg	UJ	
CLP_PESTPCB_GCMS	3.6	ug/kg	UJ	
CLP_PESTPCB_GCMS	1.8	ug/kg	UJ	
CLP_PESTPCB_GCMS	180	ug/kg	UJ	
CLP_PESTPCB_GCMS	1.8	ug/kg	UJ	
CLP_SVOA_GCMS	870	ug/kg	UJ	
CLP_SVOA_GCMS	870	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	38	ug/kg	J	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	320	ug/kg	J	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	120	ug/kg	J	
CLP_SVOA_GCMS	260	ug/kg	J	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	120	ug/kg	J	

CLP_SVOA_GCMS	53	ug/kg	J
CLP_SVOA_GCMS	870	ug/kg	UJ
CLP_SVOA_GCMS	360	ug/kg	UJ
CLP_SVOA_GCMS	870	ug/kg	UJ
CLP_SVOA_GCMS	360	ug/kg	UJ
CLP_SVOA_GCMS	140	ug/kg	J
CLP_SVOA_GCMS	360	ug/kg	UJ
CLP_SVOA_GCMS	360	ug/kg	UJ
CLP_SVOA_GCMS	360	ug/kg	UJ
CLP_SVOA_GCMS	360	ug/kg	UJ
CLP_SVOA_GCMS	360	ug/kg	UJ
CLP_SVOA_GCMS	360	ug/kg	UJ
CLP_SVOA_GCMS	360	ug/kg	UJ
CLP_SVOA_GCMS	360	ug/kg	UJ
CLP_SVOA_GCMS	360	ug/kg	UJ
CLP_SVOA_GCMS	360	ug/kg	UJ
CLP_SVOA_GCMS	150	ug/kg	J
CLP_SVOA_GCMS	360	ug/kg	UJ
CLP_SVOA_GCMS	360	ug/kg	UJ
CLP_SVOA_GCMS	360	ug/kg	UJ
CLP_SVOA_GCMS	360	ug/kg	UJ
CLP_SVOA_GCMS	360	ug/kg	UJ
CLP_SVOA_GCMS	870	ug/kg	UJ
CLP_SVOA_GCMS	360	ug/kg	UJ
CLP_SVOA_GCMS	870	ug/kg	UJ
CLP_SVOA_GCMS	360	ug/kg	UJ
CLP_SVOA_GCMS	360	ug/kg	UJ
CLP_SVOA_GCMS	360	ug/kg	UJ
CLP_SVOA_GCMS	360	ug/kg	UJ
CLP_SVOA_GCMS	360	ug/kg	UJ
CLP_SVOA_GCMS	360	ug/kg	UJ
CLP_SVOA_GCMS	360	ug/kg	UJ
CLP_SVOA_GCMS	360	ug/kg	UJ
CLP_SVOA_GCMS	870	ug/kg	UJ
CLP_SVOA_GCMS	360	ug/kg	UJ
CLP_SVOA_GCMS	870	ug/kg	UJ
CLP_VOA_GCMS	11	ug/kg	U
CLP_VOA_GCMS	11	ug/kg	U
CLP_VOA_GCMS	11	ug/kg	U
CLP_VOA_GCMS	11	ug/kg	U
CLP_VOA_GCMS	11	ug/kg	U
CLP_VOA_GCMS	11	ug/kg	U
CLP_VOA_GCMS	1	ug/kg	J
CLP_VOA_GCMS	11	ug/kg	U
CLP_VOA_GCMS	11	ug/kg	U
CLP_VOA_GCMS	11	ug/kg	U
CLP_VOA_GCMS	11	ug/kg	U
CLP_VOA_GCMS	11	ug/kg	U
CLP_VOA_GCMS	11	ug/kg	U
CLP_VOA_GCMS	11	ug/kg	U
CLP_VOA_GCMS	11	ug/kg	U
CLP_VOA_GCMS	11	ug/kg	U

CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	7	ug/kg	J	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
GAMMA_GS	0.08	pCi/g	U	
GAMMA_GS	5.5	pCi/g		
GAMMA_GS	14	pCi/g		
GAMMA_GS	0.6	pCi/g	U	
GAMMA_GS	0.09	pCi/g	U	
GAMMA_GS	0.2	pCi/g	U	
GAMMA_GS	0.67	pCi/g		
GAMMA_GS	1.2	pCi/g		
GAMMA_GS	0.6	pCi/g	U	
GAMMA_GS	0.2	pCi/g	U	
GAMMA_GS	0.1	pCi/g	U	
GAMMA_GS	0.3	pCi/g	U	
GAMMA_GS	0.08	pCi/g	U	
GAMMA_GS	0.84	pCi/g		
SAS_COUNT_LSC	-0.39	pCi/g	U	
SAS_COUNT_LSC	2.9	pCi/g	UJ	
SAS_COUNT_LSC	18	pCi/g		
SAS_COUNT_LSC	0.011	pCi/g	U	
SAS_COUNT_LSC	-0.002	pCi/g	U	
SAS_COUNT_LSC	-0.93	pCi/g	U	
SAS_COUNT_LSC	0	pCi/g	U	
SAS_COUNT_LSC	0	pCi/g	UJ	
SAS_COUNT_LSC	0.39	pCi/g		
SAS_COUNT_LSC	0.5	pCi/g		
300.0_ANIONS_IC	1.6	mg/kg		R
300.0_ANIONS_IC	5	mg/kg		
300.0_ANIONS_IC	0.6	mg/kg	J	
353.2_NO3/NO2	19.8	mg/kg	J	
CLP_CYANIDE_S	0.54	mg/kg	U	
CLP_HG_CVAA	0.05	mg/kg	UJN	
CLP_METALS_GFAA	7.2	mg/kg	J*	
CLP_METALS_GFAA	0.24	mg/kg	U	
CLP_METALS_GFAA	2.2	mg/kg		
CLP_METALS_GFAA	0.65	mg/kg	U	
CLP_METALS_ICP	7740	mg/kg		

CLP_METALS_ICP	18300	mg/kg		
CLP_METALS_ICP	4520	mg/kg		
CLP_METALS_ICP	312	mg/kg	JN	
CLP_METALS_ICP	12.8	mg/kg		
CLP_METALS_ICP	1720	mg/kg		
CLP_METALS_ICP	0.96	mg/kg	B	
CLP_METALS_ICP	174	mg/kg	B	
CLP_METALS_ICP	3.9	mg/kg	UJN	
CLP_METALS_ICP	67.4	mg/kg		
CLP_METALS_ICP	0.63	mg/kg	B	
CLP_METALS_ICP	0.37	mg/kg	U	
CLP_METALS_ICP	12.2	mg/kg		
CLP_METALS_ICP	9.3	mg/kg	B	
CLP_METALS_ICP	14.6	mg/kg		
CLP_METALS_ICP	38	mg/kg		
CLP_METALS_ICP	39	mg/kg		
CLP_METALS_ICP	5170	mg/kg		
CLP_PESTPCB_GCMS	1.8	ug/kg	UJ	
CLP_PESTPCB_GCMS	3.5	ug/kg	UJ	
CLP_PESTPCB_GCMS	35	ug/kg	UJ	
CLP_PESTPCB_GCMS	30	ug/kg	JP	
CLP_PESTPCB_GCMS	72	ug/kg	UJ	
CLP_PESTPCB_GCMS	35	ug/kg	UJ	
CLP_PESTPCB_GCMS	35	ug/kg	UJ	
CLP_PESTPCB_GCMS	35	ug/kg	UJ	
CLP_PESTPCB_GCMS	1.8	ug/kg	UJ	
CLP_PESTPCB_GCMS	1.8	ug/kg	UJ	
CLP_PESTPCB_GCMS	1.8	ug/kg	UJ	
CLP_PESTPCB_GCMS	1.8	ug/kg	UJ	
CLP_PESTPCB_GCMS	3.5	ug/kg	UJ	
CLP_PESTPCB_GCMS	3.5	ug/kg	UJ	
CLP_PESTPCB_GCMS	1.8	ug/kg	UJ	
CLP_PESTPCB_GCMS	1.8	ug/kg	UJ	
CLP_PESTPCB_GCMS	35	ug/kg	UJ	
CLP_PESTPCB_GCMS	3.5	ug/kg	UJ	
CLP_PESTPCB_GCMS	1.8	ug/kg	UJ	
CLP_PESTPCB_GCMS	3.5	ug/kg	UJ	
CLP_PESTPCB_GCMS	3.5	ug/kg	UJ	
CLP_PESTPCB_GCMS	18	ug/kg	UJ	
CLP_PESTPCB_GCMS	3.5	ug/kg	UJ	
CLP_PESTPCB_GCMS	3.5	ug/kg	UJ	
CLP_PESTPCB_GCMS	3.5	ug/kg	UJ	
CLP_PESTPCB_GCMS	1.8	ug/kg	UJ	
CLP_PESTPCB_GCMS	180	ug/kg	UJ	
CLP_PESTPCB_GCMS	1.8	ug/kg	UJ	
CLP_SVOA_GCMS	860	ug/kg	UJ	
CLP_SVOA_GCMS	860	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	

CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	130	ug/kg	J	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	73	ug/kg	J	
CLP_SVOA_GCMS	99	ug/kg	J	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	78	ug/kg	J	
CLP_SVOA_GCMS	40	ug/kg	J	
CLP_SVOA_GCMS	860	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	860	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	85	ug/kg	J	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	78	ug/kg	J	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	860	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	860	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	

CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	860	ug/kg	UJ	
CLP_SVOA_GCMS	360	ug/kg	UJ	
CLP_SVOA_GCMS	860	ug/kg	UJ	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
CLP_VOA_GCMS	11	ug/kg	U	
GAMMA_GS	0.3	pCi/g		
GAMMA_GS	10	pCi/g		
GAMMA_GS	13	pCi/g		
GAMMA_GS	0.7	pCi/g	U	
GAMMA_GS	0.1	pCi/g	U	
GAMMA_GS	0.3	pCi/g	U	
GAMMA_GS	0.45	pCi/g		
GAMMA_GS	0.94	pCi/g		
GAMMA_GS	0.7	pCi/g	U	
GAMMA_GS	0.3	pCi/g	U	
GAMMA_GS	0.1	pCi/g	U	
GAMMA_GS	0.3	pCi/g	U	
GAMMA_GS	0.08	pCi/g	U	
GAMMA_GS	0.72	pCi/g		

SAS_COUNT_LSC	-0.083	pCi/g	U	
SAS_COUNT_LSC	6.5	pCi/g	J	
SAS_COUNT_LSC	21	pCi/g		
SAS_COUNT_LSC	-0.028	pCi/g	U	
SAS_COUNT_LSC	0.009	pCi/g	U	
SAS_COUNT_LSC	0.65	pCi/g	U	
SAS_COUNT_LSC	0.017	pCi/g	U	
SAS_COUNT_LSC	0.017	pCi/g	UJ	
SAS_COUNT_LSC	0.65	pCi/g		
SAS_COUNT_LSC	0.46	pCi/g		

IN_DETECTABLE_ACTIVIT	MEDIA	LMA	NS_COORD	EW_COORD	CVP	SAMP_DATE_TIME
	SO	A5841	149683.326	571395.769		4/8/93 0:00
	SO	A5841	149683.326	571395.769		4/8/93 0:00
	SO	A5841	149683.326	571395.769		4/8/93 0:00
	SO	A5841	149683.326	571395.769		4/8/93 0:00
	SO	A5841	149683.326	571395.769		4/8/93 0:00
	SO	A5841	149683.326	571395.769		4/8/93 0:00
	SO	A5841	149683.326	571395.769		4/8/93 0:00
	SO	A5841	149683.326	571395.769		4/8/93 0:00
	SO	A5841	149683.326	571395.769		4/8/93 0:00
	SO	A5841	149683.326	571395.769		4/8/93 0:00
	SO	A5841	149683.326	571395.769		4/8/93 0:00
	SO	A5841	149683.326	571395.769		4/8/93 0:00
	SO	A5841	149683.326	571395.769		4/8/93 0:00
	SO	A5841	149683.326	571395.769		4/8/93 0:00
	SO	A5841	149683.326	571395.769		4/8/93 0:00
	SO	A5841	149683.326	571395.769		4/8/93 0:00
	SO	A5841	149683.326	571395.769		4/8/93 0:00
	SO	A5841	149683.326	571395.769		4/8/93 0:00
	SO	A5841	149683.326	571395.769		4/8/93 0:00
	SO	A5841	149683.326	571395.769		4/8/93 0:00
	SO	A5841	149683.326	571395.769		4/8/93 0:00
	SO	A5841	149683.326	571395.769		4/8/93 0:00
	SO	A5841	149683.326	571395.769		4/8/93 0:00
	SO	A5841	149683.326	571395.769		4/8/93 0:00
	SO	A5841	149683.326	571395.769		4/8/93 0:00
	SO	A5841	149683.326	571395.769		4/8/93 0:00
	SO	A5841	149683.326	571395.769		4/8/93 0:00
	SO	A5841	149683.326	571395.769		4/8/93 0:00
	SO	A5841	149683.326	571395.769		4/8/93 0:00
	SO	A5841	149683.326	571395.769		4/8/93 0:00
	SO	A5841	149683.326	571395.769		4/8/93 0:00
	SO	A5841	149683.326	571395.769		4/8/93 0:00
	SO	A5841	149683.326	571395.769		4/8/93 0:00
	SO	A5841	149683.326	571395.769		4/8/93 0:00
	SO	A5841	149683.326	571395.769		4/8/93 0:00
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	SO	A5841	149683.326	571395.769		4/8/93 0:00
	SO	A5841	149683.326	571395.769		4/8/93 0:00
	SO	A5841	149683.326	571395.769		4/8/93 0:00
	SO	A5841	149683.326	571395.769		4/8/93 0:00
	SO	A5841	149683.326	571395.769		4/8/93 0:00
	SO	A5841	149683.326	571395.769		4/8/93 0:00
	SO	A5841	149683.326	571395.769		4/8/93 0:00
	SO	A5841	149683.326	571395.769		4/8/93 0:00
	SO	A5841	149683.326	571395.769		4/8/93 0:00
	SO	A5841	149683.326	571395.769		4/8/93 0:00
	SO	A5841	149683.326	571395.769		4/8/93 0:00
	SO	A5841	149683.326	571395.769		4/8/93 0:00
	SO	A5841	149683.326	571395.769		4/8/93 0:00
	SO	A5841	149683.326	571395.769		4/8/93 0:00
	SO	A5841	149683.326	571395.769		4/8/93 0:00
	SO	A5841	149683.326	571395.769		4/8/93 0:00
	SO	A5841	149683.326	571395.769		4/8/93 0:00
	SO	A5841	149683.326	571395.769		4/8/93 0:00
	SO	A5841	149683.326	571395.769		4/8/93 0:00
	SO	A5841	149683.326	571395.769		4/8/93 0:00
	SO	A5841	149683.326	571395.769		4/8/93 0:00
	SO	A5841	149683.326	571395.769		4/8/93 0:00
	SO	A5841	149683.326	571395.769		4/8/93 0:00
	SO	A5841	149683.326	571395.769		4/8/93 0:00
	SO	A5841	149683.326	571395.769		4/8/93 0:00
	SO	A5841	149683.326	571395.769		4/8/93 0:00
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#9	100-N-3, 100-N-41, 100-N-45
#10	100-N-5

Appendix F

Identification of Contaminants of Potential Concern for Groundwater Portion of the 100-N RI/FS Work Plan

and

Reprint of WCH-331, *100-N Target Analyte List Development for Soil*, Rev. 0, Published March 2011

F1 Identification of Contaminants of Potential Concern (COPCs) for Groundwater Portion of the 100-N Remedial Investigation/Feasibility Study Work Plan

CH2MHILL

Environmental Calculation Cover Page

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Project: 100 and 300 Area RI/FS **Date: March 3, 2011**

Calculation Title & Description: Identification of Contaminants of Potential Concern (COPCs) for Groundwater Portion of the 100-N Remedial Investigation/Feasibility Study Work Plan

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1 Purpose

This memorandum describes the method for selecting groundwater contaminants of potential concern (COPCs) in support of developing 100-N Decision Unit remedial investigation/feasibility study work plan documents. A secondary objective of this memorandum is to identify the appropriate analytical methods for the COPCs. The recommended analytical methods for radiological and nonradiological COPCs are based on their ability to achieve their respective action level.

The list of COPCs identified with this method will be used for planning future risk assessment activities for the 100-N Decision Unit. These COPCs also will be used in the nature and extent characterization for the 100-N Decision Unit. The identified COPCs can be used to develop a more focused list of analytes for sampling and analysis plans (SAPs), such as remedial process optimization.

The source of analytical data and selection criteria for identifying COPCs. Presentations were given to the Tri Parties (U.S. Department of Energy, U.S. Environmental Protection Agency, and Washington State Department of Ecology) on December 16, 2008 and January 6, 2009 providing an overview of the processes used to identify vadose zone soil target analytes and groundwater COPCs. A COPC is an analyte suspected of being associated with site-related activities that represents a potential threat to human health or the environment, and analyte data are of sufficient quality for use in a quantitative baseline risk assessment. COPCs will be carried into the SAP for characterization or developing baseline conditions through sampling and analysis by approved analytical methods.

2 Methodology

The evaluation methodology involves a sequence of steps, consisting of 1) extracting and processing an OU-specific analytical data set, and 2) screening the data for the entire groundwater OU to select analytes that qualify as initial COPCs for inclusion in the sampling and analysis plan.

2.1 Analytical Data Processing

The data set obtained from HEIS includes the following types of information:

- Unfiltered and filtered and analytical results
- Parent, field duplicate, and field split samples.
- Data qualification and data validation flags including rejected results
- Results reported by more than one analytical method

As a result of these database qualities, the analytical data obtained from HEIS are processed to identify one set of results per sampling location and time of collection. The following describes the data processing steps taken before the selection of groundwater COPCs. Figure 2-1 presents the analytical data processing requirements associated with the groundwater COPC selection process and the number of records associated with each of the processing steps.

Unfiltered Sample Results. Only unfiltered nonradiological and radiological results are used for selecting COPCs. Use of unfiltered sampling results represents total concentrations of the analyte.

Field Duplicate and Split Results. Field quality control samples (field duplicates and field splits) are collected in the field and analyzed by the laboratory as unique samples. The parent sample and quality control samples will be collected from the same location (i.e., monitoring well), resulting in more than

one sample per location. At the agency meeting held on December 16, 2008, the following criteria were presented to reduce multiple sample results from one location to a single result.

- If two or more detections exist, the maximum concentration will be used.
- If one detection and one or nondetection exist, the detected concentration will be used.
- If two or more nondetections exist, the lowest detection limit will be used.

Laboratory and Data Validation Flags. After receiving analytical data with data qualification flags from the laboratory, validation qualifiers are assigned during the data validation process. The following rules are applied to determine how the sample results can be used for selecting COPCs.

- All sample results flagged with a "U" qualifier or combination of qualifiers that include a "U" such as a "UJ" are considered a nondetected concentration.
- All sample results without a "U" qualifier are considered detected concentrations, including results without a qualifier or with a "J" qualifier.
- No sample data rejected and flagged with a "R" are used for selecting COPCs.

Analytes Reported by Numerous Analytical Methods. An analyte can often be reported by more than one analytical method resulting in multiple results for the same analyte from the same location. When analytes are reported by more than one analytical method, results will be processed to select the method that provides the most reliable results. For example, the gamma spectroscopy method will provide concentration results for the uranium isotopes; however, uranium concentrations should be reported by a uranium isotope specific method.

2.2 Identify Action Levels

Action levels are derived from readily available sources of chemical-specific applicable or relevant and appropriate requirements (ARARs) or risk-based preliminary remediation goals (PRGs) developed using U.S. Environmental Protection Agency (EPA) health criteria and default exposure assumptions. Table 2-1 identifies all sources of chemical-specific ARARs and (PRGs) for each of the 358 analytes reported. The action level represents the lowest of the available values for each analyte evaluated. A description of the sources of available chemical-specific ARARs and PRGs follows. A description of how the action levels are used in the COPC selection process is provided in the subsection entitled "Groundwater COPC Selection Process."

2.2.1 ARAR-Based Remediation Goals

Potential chemical-specific ARARs include concentration limits set by federal environmental regulations such as maximum contaminant levels (MCLs), secondary MCLs, and non-zero maximum contaminant level goals established under the *Safe Drinking Water Act of 1974*, ambient water quality criteria established under the *Clean Water Act of 1977*, and Washington State regulations (WAC 173-340-720, "Groundwater Cleanup Standards;" WAC 173-340-730, "Surface Water Cleanup Standards;" and WAC 173-201A, "Water Quality Standards for Surface Waters of the State of Washington").

Uranium isotopes are not identified as COPCs because the MCL for uranium (metal) is considered protective of kidney toxicity and carcinogenicity. The following excerpt is taken from the National Primary Drinking Water Regulations to describe the basis for the uranium MCL:

"*Exposure to uranium in drinking water may cause toxic effects to the kidney. In 1991, EPA proposed an MCL of 20 μg/L, which was determined to be as close as feasible to the maximum contaminant level*

goal(MCLG). Based on human kidney toxicity data collected since that time and on its estimate of the cost and benefits of regulating uranium in drinking water, EPA determined that the benefits of a uranium MCL of 20 µg/L did not justify the costs. Instead, EPA determined that 30 µg/L is the appropriate MCL, because it maximizes the net benefits (benefits minus costs) while being protective of kidney toxicity and carcinogenicity with an adequate margin of safety."

2.2.2 Risk Based Preliminary Remediation Goals

The risk-based concentration table for residential tap waters is used as the source of PRGs. These values are obtained from the "Regional Screening Levels for Chemicals Contaminants at Superfund Sites" website (http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/index.htm). PRGs for chemicals with carcinogenic effects corresponds to a 10^{-6} incremental risk of an individual developing cancer over a lifetime as a result of exposure to the potential carcinogen from all significant exposure pathways for a given medium. PRGs for chemicals with noncancerous effects corresponds to a hazard index of one, which is the level of exposure to a chemical from all significant exposure pathways in a given medium below which it is unlikely for even sensitive populations to experience adverse health effects. The direct contact exposure pathway for groundwater considers exposure from ingestion, inhalation of vapors, and dermal contact. The residential tap waters value is used only when a chemical-specific ARAR is not available.

2.3 Identify Groundwater COPCs

The following process is used to select COPCs for the 100-N Operable Unit. This process is used to identify COPCs in support of developing 100-N Operable Unit RI/FS work plan documents. The steps used in the COPC selection process are described below. A flowchart presenting the COPC selection process and the number of analytes associated with each of the COPC selection process steps is shown in Figure 2-2.

2.3.1 Apply Exclusion Criteria

Analytes that meet exclusion criteria are eliminated as COPCs. Analytes that do not meet the exclusion criteria are carried forward into the next step of the process.

- Naturally-occurring radionuclides associated with background radiation
- Radionuclides with half-lives of less than 3 years
- Essential nutrients (minerals)
- Water quality parameters
- Analytes without action levels.

2.3.2 Identify Nondetected Analytes

Analytes that have been collected from appropriate locations, that have adequate detection limits, and that have not been detected in any of the groundwater samples for a decision unit are eliminated as COPCs. All analytes detected at least once are carried forward to the next step of the process.

Uncertainty Analysis. An additional evaluation was performed on those analytes that were reported with minimum MDLs greater than their respective action level.

2.3.3 Analytes with Maximum Detected Concentrations Less Than Action Levels

Maximum concentrations of analytes detected in groundwater are compared to action levels to identify analytes that are not likely to contribute significantly to overall risk. If the maximum detected concentration of an analyte is less than its action level, the analyte is eliminated as a COPC unless the uncertainty analysis indicates otherwise.

Uncertainty Analysis. An additional evaluation was performed on those analytes that were detected at concentrations slightly less than their respective action level (i.e., the maximum detected concentration is at least one-tenth the action level or within one order of magnitude). The purpose of this evaluation is to determine if there is the potential for underestimating cumulative effects when concentrations of analytes are near but do not exceed the action level. Additionally, minimum and maximum MDLs associated with these analytes are evaluated to determine adequacy for confirming their presence at their respective action levels. If the MDLs are greater than the action level and the analyte is identified as a soil target analyte, then it will be identified as a COPC.

2.3.4 Identify Analytes With Maximum Detected Concentrations Greater Than Action Levels

Maximum concentrations of analytes detected in groundwater are compared to action levels to identify analytes that are likely to contribute to overall risk. If the maximum detected concentration of an analyte is greater than its action level, the analyte is identified as a COPC unless the uncertainty analysis indicates otherwise.

Uncertainty Analysis. An additional evaluation was performed to distinguish those analytes that were detected infrequently and are not reproducible from those analytes that could be associated with a potential hot spot or localized area of contamination near a monitoring well.

2.3.5 Final Evaluation of Groundwater COPCs

The final step is used to confirm the list of groundwater COPCs is consistent with what is known about Hanford Site operations and is compared to the vadose zone soil target analyte list and DOE/RL-2007-21.

3 Assumptions and Inputs

3.1 Groundwater Data Set Used for COPC Selection

The analytical data set used in this evaluation was extracted from the Hanford Environmental Information System (HEIS) database. Groundwater data for this analysis were obtained from monitoring wells and compliance wells. Although groundwater data collected from injection wells, extraction wells, and aquifer tubes can be used with monitoring and compliance data for purposes, such as remedy selection and design, these other data are not used for risk assessment.

A work plan to characterize the nature and extent of contamination in groundwater and associated potential exposures has not been written. Rather, the U.S. Department of Energy monitors groundwater at the Hanford Site to fulfill a variety of state and federal regulations, including the *Atomic Energy Act of 1954*, the *Resource Conservation and Recovery Act of 1976*, the *Comprehensive Environmental Response, Compensation, and Liability Act of 1980*, and WAC 173-340, "Model Toxics Control Act – Cleanup." Data collected to fulfill monitoring requirements provide a comprehensive data set for identifying COPCs in groundwater. Chapter 3 provides additional discussion about the suitability of the monitoring data for risk assessment purposes.

Although they can be used for risk assessment, monitoring data do have associated uncertainties. The uncertainties associated with the groundwater data set are described in DOE/RL-2007-21, *Risk Assessment Report for the 100 Area and 300 Area Component of the River Corridor Baseline Risk Assessment*, Volume 2. Specifically, the analytes, sampling frequencies, and method detection limits (MDLs) (or reporting limits) are used to meet different regulatory program requirements. Additionally, quality assurance and quality control requirements can vary between programs. As a result, data may be flagged for suitability during validation and these flags may limit the use of the data. Because of these differences, a consistent chemical "snapshot" of current groundwater conditions is needed.

The groundwater data set used for COPC selection consists of sampling and analysis data collected from a total of 87 monitoring wells from the 100-NR-2 Groundwater Operable Unit (OU). Table 3-1 provides a list of the monitoring wells used in this evaluation. The sampling and analysis data were collected between January 23, 1992 and March 24, 2009. This groundwater data set includes the quarterly analysis of groundwater samples (a total of four consecutive quarterly rounds) collected during 1992 and 1993 and reported in the 1995 limited field investigation for the 100-NR-2 Groundwater OU (DOE/RL-93-81, *Limited Field Investigation Report for the 100-NR-2 Operable Unit*). These data were used for the ecological component of the qualitative risk assessment (BHI-00055, *Qualitative Risk Assessment for the 100-NR-2 Operable Unit*). A total of 77,483 records were obtained from HEIS, and a total of 358 analytes are reported in this data set.

4 Software Applications

Software used for this analysis included HEIS, Microsoft Access[1] database software, and Microsoft Excel[2]. HEIS is a central repository for storing and maintaining access to environmental data collected and analyzed for the Hanford Site. Microsoft Access was used query and sort the data downloaded from the HEIS database. Microsoft Excel was used to present the groundwater data and information in spreadsheets. No statistical calculations were performed.

5 Calculation

5.1 Apply Exclusion Criteria

A total of 112 of the 358 analytes meet the exclusion criteria and are listed in Table 5-1. Sampling dates, minimum and maximum detected concentrations, minimum and maximum MDLs, and the basis for their exclusion also are provided in Table 5-1. The following define the exclusion criteria that are applied:

- Naturally-occurring radionuclides associated with background radiation
- Radionuclides with half-lives of less than 3 years
- Essential nutrients (minerals)
- Water quality parameters
- Contaminants without action levels.

[1] Access is a trademark of Microsoft Corporation, Redmond, Washington.
[2] Excel is a trademark of Microsoft Corporation, Redmond, Washington.

Background Radiation. Naturally-occurring radionuclides associated with background radiation (including potassium-40, radium-226, thorium-228, and thorium-232) were measured in groundwater from the 100-N Decision Unit and are eliminated as COPCs.

Radionuclides with a half-life of less than three years. Radioisotopes with half-lives less than or equal to 3 years are eliminated from further consideration because only a small fraction of activity remains after 30 years of decay. A total of 24 radioisotopes met this exclusion criteria and are eliminated from further consideration as COPCs.

Essential Nutrients. Essential nutrients are those constituents considered essential for human nutrition. The essential nutrients (calcium, magnesium, potassium, and sodium) were measured in groundwater and are excluded from further consideration as COPCs.

Water Quality Parameters. Water quality parameters that represent physical and biological characteristics, such as temperature, pH, or turbidity, are eliminated as COPCs. In all cases, water quality parameters do not have available toxicological information and cannot be evaluated for exposure purposes. Fourteen water quality parameters were measured in groundwater from the 100-N Decision Unit and are eliminated from further consideration as COPCs.

Analytes without Action Levels. Analytes without an action level are eliminated as COPCs because information about their toxicity to humans or aquatic receptors is not published. Sixty-six analytes are eliminated because an action level is not available.

Forty-seven analytes without an action level have not been detected (two dioxin/furans, one metal, 2 radioisotopes, 34 semivolatile organic compounds [SVOCs], 7 volatile organic compounds [VOCs], and one water quality parameters). The remaining 19 analytes (oil and grease, two metals, two pesticides, 6 radioisotopes [including 4 uranium isotopes], one SVOC, total petroleum hydrocarbons, six water quality parameters) were detected at least once.

With the exception of the uranium isotopes, gross beta, and two pesticides (endrin ketone and delta-BHC), the analytes eliminated as COPCs are wet chemistry parameters, VOCs, or SVOC that are opportunistically reported with an analytical suite and are not known to be associated with historical operations at the Hanford Site. The uranium isotopes were detected at concentrations ranging from less than 1 pCi/L to 3.53 pCi/L. Uranium isotopes do not have a promulgated drinking water standard. All uranium isotope concentrations are below the proposed MCL value of 20 pCi/L. Additionally, total uranium (metal) is not identified as a COPC for the 100-N Decision Unit.

Gross beta is frequently analyzed in groundwater samples as an indicator parameter. The standard for beta particles and photon emitters is 4 mrem/yr combined. The maximum gross beta concentration is 50,000 µg/L indicating the presence of a beta emitter such as strontium-90. Strontium-90 has been identified as a groundwater COPC.

Endrin ketone and delta-BHC are infrequently detected and do not have action levels. Endrin and endrin aldehyde are structurally similar to endrin ketone and have action levels. Endrin ketone was detected at a concentration greater than the action level for endrin. Additionally, the maximum concentration of endrin was greater than its action level and it is identified as a groundwater COPC. Gamma-BHC is structurally similar to delta-BHC and has an action level. Delta-BHC was detected once in groundwater at a concentration less than the action level for gamma-BHC. Gamma-BHC has not been detected in

groundwater. Based on these comparisons, some pesticides are present in groundwater at levels at or near a similar action level and some pesticides are identified as COPCs.

5.2 Identify Nondetected Analytes

Analytes that have not been detected in any of the groundwater samples for a decision unit are eliminated as COPCs. All analytes detected at least once are carried forward to the next step of the process. Of the 358 analytes, 163 analytes have not been detected in the 100-N Decision Unit and are listed in Table 5-2. Table 5-2 also provides sampling dates, minimum and maximum MDLs, the action level, basis of the action level, and the level of exceedance. The minimum MDL is divided by the action level to determine the level of exceedance.

One dioxin/furan, three herbicides, seven polychlorinated biphenyls (PCBs), 12 pesticides, 4 radioisotope (plutonium-238, plutonium-239, europium-152, and thorium-230), 84 SVOCs, and 52 VOCs were analyzed but have not been detected and are not considered COPCs.

Uncertainty Analysis. Forty-nine analytes were reported with minimum MDLs greater than their respective action level. The analytical method selected is unable to detect the analyte at or below the action level.

Thirty-one analytes with MDLs greater than their action level represent SVOCs. With the exception of polynuclear aromatic hydrocarbons (PAHs), the remainder of the SVOCs are not known or suspected to be associated with Hanford Site operations. Seven PAHs have not been detected in groundwater but their minimum MDLs are approximately 263 times greater than their respective action levels. EPA Method 8270 (SW-846, Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, Third Edition; Final Update IV-B) currently is used to analyze for PAHs in groundwater. A comparison of MDLs between the historic and current analytical methods show no difference in MDLs. This indicates that the current analytical method cannot attain MDLs at the action level and would not reduce the uncertainties associated with the ability to confirm the analytes presence at or below the action levels. Generally, PAHs are immobile in soil and are not expected to migrate from soil into groundwater; therefore, PAHs are not expected to be present in groundwater and are not identified as COPCs.

Six analytes with MDLs greater than their action level represent volatile organic compounds. With the exception of styrene and vinyl chloride, the remainder of VOCs that have not been detected are not known or suspected to be associated with Hanford Site operations. Vinyl chloride was not detected in any of the groundwater samples; however the MDLs for vinyl chloride ranged between 0.044 µg/L to 10 µg/L. Similarly, styrene was not detected in any of the groundwater samples; however the MDLs for styrene ranged between 0.079 µg/L to 10 µg/L. Because the MDLs for styrene and vinyl chloride are greater than their respective action levels of 1.46 µg/L and 0.029 µg/L, styrene and vinyl chloride will be included as COPCs to confirm that nondetected concentrations are below the action level.

Seven PCBs were reported with MDLs greater than their respective action levels. PCBs have been associated with some Hanford Site operations. PCB MDLs were 625 to 1,718 times greater than their respective action levels. EPA Method 8082 currently is used to analyze for PCBs in groundwater. A comparison of MDLs between historic and current analytical methods show little to no difference in MDLs. This indicates that current analytical method cannot attain MDLs at the action level and would not reduce the uncertainties associated with the ability to confirm the analytes presence at or below the action levels. Generally, PCBs are immobile in soil and are not expected to migrate from soil into

groundwater; therefore, PCBs are not expected to be present in groundwater and are not identified as COPCs.

Four pesticides were reported with MDLs greater than their respective action levels. Pesticides have been applied in accordance with application requirements to areas within the 100 Area. Pesticide MDLs ranged from approximately 4.55 to 2,000 times greater than the action levels. EPA Method 8081 is currently used to analyze for pesticides in groundwater. A comparison of MDLs between historic and current analytical methods show little to no difference in MDLs. This indicates that current analytical methods cannot attain MDLs at the action level and would not reduce the uncertainties associated with the ability to confirm the analytes presence at or below the action levels; therefore, pesticides are not identified as COPCs.

2,3,7,8-Tetrachlorodibenzo-p-dioxin was not detected in the groundwater sample analyzed in 1993, however all MDLs are greater than the action level of 5.0E-9 µg/L. 2,3,7,8-Tetrachlorodibenzo-p-dioxin is not identified as a vadose zone soil target analyte indicating that it is not expected to be present in soil; therefore this analyte is not identified as a COPC.

5.3 Analytes with Maximum Detected Concentrations Less Than the Action Levels

Table 5-3 presents a summary of the analytes with maximum detected concentrations less than their respective action level. Thirty-six analytes were detected at least once, but their maximum detected concentrations are less than their respective action levels. The level the maximum detected contration did not exceed the action level associated with this group of analytes ranged from 0.98 to 2.19E-4. The maximum detected concentration is divided by the action level to determine the amount the action level was not exceeded.

5.3.1 Uncertainty Analysis

The analytes with maximum detected concentrations one-thenth their respective action level are 1,4-dichlorobenzene, 2,4-dichlorophenol, barium, carbon-14, chloride, cobalt, cyanide, iodine-129, lithium, methylene chloride, molybdenum, radium-228, silver, strontium, and uranium.

1,4-Dichlorobenzene. 1,4-Dichlorobenzene was detected in one of 79 samples (1.3 percent frequency) collected between 1992 and 2009. Of the 78 nondetected results, 25 MDLs were greater than and 53 MDLs were less than the action level of 1.82 µg/L. 1,4-Dichlorobenzene is identified as a vadose zone target analyte. Based on the results of this evaluation, 1,4-dichlorobenzene is identified as a COPC to verify that groundwater concentrations are below the action level.

2,4-Dichlorophenol. 2,4-Dichlorophenol was detected in one of 208 samples (0.48 percent frequency) collected between 1992 and 2009. Although 2,4-Dichlorophenol is identified as a vadose zone target analyte, all concentrations and MDLs are consistently below the action level of 48 µg/L. Based on the results of this evaluation, 2,4-dichlorphenol is eliminated from consideration as a COPC and its exclusion would not likely underestimate overall cumulative effects.

Barium. Barium was detected in 410 of 435 samples (94 percent frequency) collected between 1992 and 2009. Although barium is identified as a vadose zone target analyte, all detected concentrations and MDLs are consistently below the action level of 1,000 µg/L. Based on the results of this evaluation, barium is eliminated from consideration as a COPC and its exclusion would not likely underestimate overall cumulative effects.

Carbon-14. Carbon-14 was detected in 16 of 41 samples (39 percent frequency) collected between 1992 and 2008. Although carbon-14 is identified as a vadose zone target analyte, all detected concentrations and MDLs are consistently below the action level. Based on the results of this evaluation, carbon-14 is eliminated from consideration as a COPC and its exclusion would not likely underestimate overall cumulative effects.

Chloride. Chloride was detected in 1,009 of 1,011 samples (~100 percent frequency) collected between 1992 and 2009. All detected concentrations and MDLs are consistently below the action level. Based on the results of this evaluation, chloride is eliminated from consideration as a COPC and its exclusion would not likely underestimate overall cumulative effects.

Cyanide. Cyanide was detected in one of 14 samples (7.14 percent frequency). Of the 13 nondetected results, 12 MDLs were greater than and one MDL was less than the action level of 5.2 µg/L. Cyanide is identified as a vadose zone target analyte. Based on the results of this evaluation, cyanide is identified as a COPC to verify groundwater concentrations are below the action level.

Iodine-129. Iodine-129 was detected in three of 10 samples (30 percent frequency) collected between 1994 and 1998. Although iodine-129 is identified as a vadose zone target analyte, all detected concentrations and MDLs are consistently below the action level of 1 pCi/L. Therefore, iodine-129 is eliminated from consideration as a COPC and its exclusion would not likely underestimate overall cumulative effects.

Lithium. Lithium was detected in all eleven water samples collected between 2005 and 2006. Although lithium is identified as a vadose zone target analyte, all detected concentrations are consistently below the action level of 32 µg/L. Based on the results of this evaluation, lithium is eliminated from consideration as a COPC and its exclusion would not likely underestimate overall cumulative effects.

Methylene chloride. Methylene chloride was detected in nine of 79 samples (11.39 percent frequency) collected between 1992 and 2009. Of the 70 nondetected results, 13 MDLs were greater than and 57 MDLs were less than the action level of 4.6 µg/L. Methylene chloride is not identified as a target analyte for vadose zone soil. Methylene chloride is also considered to be a common laboratory contaminant which means that the analyte is introduced as a result of laboratory analysis procedures after the sample is collected from the field and is not Hanford site related. Based on the results of this evaluation, methylene chloride is not identified as a COPC and its exclusion would not likely underestimate overall cumulative effects.

Molybdenum. Molybdenum was detected in three of 11 samples (27 percent frequency) collected between 2005 and 2006. Although molybdenum is identified as a vadose zone target analyte, all detected concentrations and MDLs are consistently below the action level of 80 µ/L. Based on the results of this evaluation molybdenum is eliminated from consideration as a COPC and its exclusion would not likely underestimate overall cumulative effects.

Radium-228. Radium-228 was detected in one of 49 samples (2.04 percent frequency) collected between 1999 and 2007. All detected concentrations and MDLs are consistently below the action level of 5 pCi/L. Radium-228 is not identified as a vadose zone target analyte. Based on the results of this evaluation radium-228 is eliminated from consideration as a COPC and its exclusion would not likely underestimate overall cumulative effects.

Silver. Silver was detected in 28 of 435 samples (6.4 percent frequency Collected between 1992 and 2009. Although silver is identified as a vadose one target analyte, all detected concentrations and MDLs are consistently below the action level of 80 µg/L. Based on the results of this evaluation silver is eliminated from consideration as a COPC and its exclusion would not likely underestimate overall cumulative effects.

Strontium. Strontium was detected in all water samples collected between 1995 and 2009. All detected concentrations are consistently below the action level of 9,600 µg/L. Strontium is not identified as a vadose zone target analyte. Based on the results of this evaluation, strontium is eliminated from consideration as a COPC and its exclusion would not likely underestimate overall cumulative effects.

Uranium. Uranium was detected in 16 of 26 samples (62 percent frequency) collected between 1992 and 2006. All detected concentrations and MDLs are consistently below the action level of 30 µg/L. Uranium is not identified as a vadose zone target analyte. Based on the results of this evaluation uranium is eliminated from consideration as a COPC and its exclusion would not likely underestimate overall cumulative effects.

5.4 Identify Analytes With Maximum Detected Concentrations Greater Than Action Levels

Forty-seven analytes were detected at least once and their maximum detected concentrations are greater than their respective action levels. Table 5-4 provides a summary of the analytes with maximum detected concentrations greater than their respective action level. Several additional steps are taken to distinguish analytes that are infrequently detected and are not reproducible from those that could be associated with a potential hot spot or localized area of contamination near a monitoring well.

5.4.1 Uncertainty Analysis

Sixteen analytes (dichlorodiphenyldichloroethane (4,4'-DDD), dichlorodiphenyltrichloroethane (4,4'-DDT), alpha-BHC, benzene, bromodichloromethane, cadmium, carbon tetrachloride, dieldrin, endrin, heptachlor, heptachlor epoxide, hydrazine, methoxychlor, nitrite, thallium, and trichloroethene) are detected at low frequencies (i.e., less than 5 percent).

4,4'-DDD. 4,4'-DDD was detected in two of 48 samples (4.2 percent frequency) collected between 1992 and 2006. The two detections of 4,4'-DDD were measured in wells 199-N-16 (J11J27) and 199-N-28 (J11J29) at concentrations of 1.6 and 0.23 µg/L, respectively during March 2006. There was only one sampling round conducted at these wells for this analyte. All MDLs are greater than the action level of 0.00031 µg/L. 4,4-DDD is identified as a vadose zone target analyte. Based on the results of this evaluation, 4,4'-DDD is identified as a COPC to determine its presence above action levels.

4,4'-DDT. 4,4'-DDT was detected in two of 48 samples (4.2 percent frequency) collected between 1992 and 2006. The two detections of 4,4'-DDT were measured in wells 199-N-16 (J11J27) and 199-N-28 (J11J29) at concentrations of 0.083 and 0.063 µg/L, respectively during March 2006. There was only one sampling round conducted at these wells for this analyte. All MDLs are greater than the action level of 0.00022 µg/L. 4,4-DDT is identified as a vadose zone target analyte. Based on the results of this evaluation, 4,4'-DDT is identified as a COPC to determine its presence above action levels.

Alpha-BHC. Alpha-BHC was detected in two of 48 samples (4.2 percent frequency) collected between 1992 and 2006. The two detections of alpha-BHC were measured in wells 199-N-16 (J11J27) and 199-N-

28 (J11J29) at concentrations of 0.037 and 0.052 µg/L, respectively during March 2006. There was only one sampling round conducted at these wells for this analyte. All MDLs are greater than the action level of 0.0026 µg/L. alpha-BHC is identified as a vadose zone target analyte. Based on the results of this evaluation, alpha-BHC is identified as a COPC to determine its presence above action levels.

Benzene. Benzene was detected in one of 79 samples (1.3 percent frequency) collected between 1992 and 2009. The single detection of benzene was measured in well 199-N-18 (B1CCX3) at a concentration of 0.95 µg/L during March 2005. There was only one sampling round conducted at this well for this analyte. Of the 78 nondetected results, a total of 15 MDLs are less than the action level of 0.0795 µg/L and the remaining 63 MDLs are greater than the action level. Benzene is identified as a vadose zone target analyte. Based on the results of this evaluation, benzene is identified as a groundwater COPC.

Bromodichloromethane. Bromodichloromethane was detected in one of 21 samples (4.8 percent frequency) collected between 1992 and 2009. The single detection of bromodichloromethane was measured in well 199-N-77 (B08JB5) at a concentration of 2.3 µg/L during May 1993. There was only one sampling round conducted at this well for this analyte. Of the 20 nondetected results, 11 MDLs are less than the action level of 0.55 µg/L and the remaining nine MDLs are greater than the action level. Bromodichloromethane is not identified as a groundwater COPC because it is not a vadose zone target analyte and is not expected to be present in groundwater.

Cadmium. Cadmium was detected in 11 of 435 samples (2.5 percent frequency) collected between 1992 and 2009. All detected concentrations and MDLs are greater than the action level of 0.25 µg/L. Cadmium is identified as a vadose zone target analyte. Based on the results of this evaluation, cadmium is identified as a COPC.

Carbon tetrachloride. Carbon tetrachloride was detected in three of 79 samples (3.8 percent frequency) collected between 1992 and 2008. Carbon tetrachloride was detected once in well 199-N-77 (B0FCC0) during May 1995 and was not detected in eight previous or two subsequent sampling rounds at this location. Carbon tetrachloride was detected in two of eight sampling rounds at well 199-N-73 (B09TW1 and B0FCB8) during 1994 and 1995. Of the 76 nondetected results, 34 MDLs are less than the action level and the remaining 42 MDLs are greater than the action level of 0.23 µg/L. Carbon tetrachloride is identified as a vadose zone soil target analyte. Based on the results of this evaluation, carbon tetrachloride is identified as a COPC.

Dieldrin. Dieldrin was detected in one of 48 samples (2.1 percent frequency) collected between 1992 and 2006. The single detection of dieldrin was measured in well 199-N-16 (J11J27) at a concentration of 0.024 µg/L during March 2006. There was only one sampling round conducted at this well for this analyte. All detected concentrations and MDLs are greater than the action level. Dieldrin is identified as a vadose zone soil target. Based on the results of this evaluation, dieldrin is identified as a groundwater COPC.

Endrin. Endrin was detected in two of 48 samples (4.2 percent frequency) collected between 1992 and 2006. The two detections of endrin were measured in wells 199-N-28 (J11J29) and 199-N-16 (J11J27) at concentrations of 0.14 and 0.12 µg/L, respectively during March 2006. There was only one sampling round conducted at these wells for this analyte. Of the 46 nondetected results, MDLs are less than the action level and the remaining 42 MDLs are greater than the action level of. Endrin is identified as a vadose zone target analyte. Based on the results of this evaluation, endrin is identified as a groundwater COPC.

Heptachlor. Heptachlor was detected in two of 48 samples (4.2 percent frequency) collected between 1992 and 2006. The two detections of endrin were measured in wells 199-N-28 (J11J29) and 199-N-16 (J11J27) at concentrations of 0.36 and 0.41 µg/L, respectively during March 2006. There was only one sampling round conducted at these wells for this analyte. All MDLs are greater than the action level of 0.036 µg/L. Heptachlor is identified as a vadose zone soil target analyte. Based on the results of this evaluation, heptachlor is identified as a groundwater COPC.

Heptachlor epoxide. Heptachlor epoxide was detected in two of 48 samples (4.2 percent frequency) collected between 1992 and 2006. The two detects of endrin were measured in wells 199-N-28 (J11J29) and 199-N-16 (J11J27) at concentrations of 0.28 and 0.037 µg/L, respectively during March 2006. There was only one sampling round conducted at these wells for this analyte. All MDLs are greater than the action level. Heptachlor epoxide is identified as a vadose zone soil target analyte. Based on the results of this evaluation, heptachlor epoxide is identified as a groundwater COPC.

Hydrazine. Hydrazine was detected in three of 155 samples (1.9 percent frequency) collected between 1992 and 1995. Hydrazine was detected in monitoring wells 199-N-67 (B0C990 and B090K4) and 199-N-57 (B08HZ3) during 1993 and 1994. All MDLs are greater than the action level of 0.0146 µg/L. Although detected concentration and MDLs are greater than its action level, it is not identified as a vadose zone target analyte and is not known to be persistent in the environment. Based on the results of this evaluation, hydrazine is not identified as a groundwater COPC.

Mercury. Mercury was detected in two of 207 samples (0.97 percent frequency) collected between 1992 and 2006. All detected concentrations and MDLs are greater than the action level of 0.012 µg/L. Mercury was detected in monitoring well 699-78-62 (B07B06) and was not detected in six subsequent sampling rounds at this location. Mercury was detected in monitoring well 199-N-67 (B0C990) and ws not detected in two subsequent sampling rounds at this location. Mercury is identified as a vadose zone target analyte. Based on the results of this evaluation, mercury is identified as a groundwater COPC.

Methoxychlor. Methoxychlor was detected in one of 48 samples (2.1 percent frequency) collected between 1992 and 2006. The single detection of methoxychlor was measured in well 199-N-16 (J11J27) at a concentration of 0.055 µg/L. There was only one sampling round conducted at this location for this analyte. Of the 47 nondetected results, 12 MDLs are less than the action level and the remaining 35 MDLs are greater than the action level. Methoxychlor is identified as a vadose zone soil target analyte. Based on the results of this evaluation, methoxychlor is identified as a groundwater COPC.

Nitrite. Nitrite was detected in 43 of 972 samples (4.42 percent frequency) collected between 1992 and 2009. Nitrite was detected at concentrations greater than the action level at five locations. Of the 929 nondetected results, 906 MDLs are less than the action level and the remaining 23 MDLs are greater than the action level. Nitrite is not identified as a vadose zone soil target analyte. Based on the results of this evaluation, nitrite is identified as a groundwater COPC.

Thallium. Thallium was detected in two of 95 samples (2.1 percent frequency) collected between 1992 and 2006. All detected concentrations and MDLs are greater than the action level of 0.24 µg/L. Thallium was detected in monitoring well 199-N-73 (J11162) and was not detected in four previous sampling rounds. Thallium was detected in monitoring well 199-N-21 (B0GJY4) and was not detected in four previous sampling rounds at this location. Thallium is not identified as a vadose zone target analyte. Based on the results of this evaluation, thallium is identified as a groundwater COPC.

Trichloroethene. Trichloroethene (TCE) was detected in two of 79 samples (2.5 percent frequency) collected between 1992 and 2009. TCE was detected in well 699-77-54 (B1B912) at a concentration above the action level, however this is the only sampling round conducted at this location for this analyte. Of the 77 nondetected results, 12 MDLs are less than the action level and the remaining 65 MDLs are greater than the action level. TCE is not identified as a vadose zone target analyte. Based on the results of this evaluation, TCE is identified as a groundwater COPC.

5.5 Final Evaluation of Groundwater COPCs

The last step of the COPC selection process is used to confirm the list of groundwater COPCs is consistent with what is known about Hanford Site operations and is compared to the vadose zone soil target analyte list and DOE/RL-2007-21.

Aluminum and Iron. Aluminum and iron were analyzed for and detected in groundwater samples collected from 1992 through 2009. Although maximum detected concentrations of aluminum and iron are greater than their action levels, which are secondary MCLs, the presence of these metals are likely to be naturally occurring. Because aluminum and iron are not identified as target analytes for vadose zone soil and are not identified as contaminants of concern in DOE/RL-2007-21, they are not identified as COPCs.

Beryllium. Beryllium was analyzed for and detected in groundwater samples collected from 1992 to 2009. Although the maximum detected concentration of beryllium was greater than its action level, beryllium was only detected in two of 435 samples (0.4 percent frequency) with concentrations greater than the action level. Beryllium was measured in well 199-N-76 (B08J51) at a concentration of 5.0 µg/L and was not detected in the remaining 13 sampling rounds at this well. Beryllium was measured in well 199-N-71 (B08J51) at a concentration of 5.0 µg/L and was not detected in the remaining 17 sampling rounds at this well. Beryllium is not identified as a groundwater COPC because it is not expected to be present in groundwater at concentrations greater than the action level.

Bis(2-ethylhexyl)phthalate. Bis(2-ethylhexyl)phthalate (BEHP) was analyzed for and detected in groundwater samples collected from 1992 to 2009. Although the maximum detected concentration of BEHP is greater than its action level, it is considered to be common laboratory a contaminant. A common laboratory contaminant is an analyte that is introduced by laboratory analysis procedures after the sample is collected from the field and is not related to the Hanford Site. Because BEHP is not identified as a target analytes for vadose zone soil and is not identified as contaminants of concern in DOE/RL-2007-21, BEHP is not identified as groundwater COPC.

Gross Alpha. Gross alpha is frequently analyzed in groundwater samples as an indicator parameter. Although gross alpha concentrations are greater than the MCL, no toxicological information is available for gross alpha for risk assessment. Therefore, gross alpha is not identified as a groundwater COPC.

Phosphorus. The HEIS database reports that phosphorus was analyzed for and detected in groundwater samples collected from 2005 through 2006. However, this is likely a reporting error and may actually represent phosphate results. Similar to hydrazine and sulfide, phosphorus is not known to be persistent in the environment. Because phosphorus is not identified as a potential target analyte for vadose zone soil and is not identified as a contaminant of concern in DOE/RL-2007-21, it is not identified as a groundwater COPC.

Sulfide. Sulfide was analyzed for and detected in groundwater samples collected from 1992 through 1994. Although the maximum detected concentration of sulfide was greater than its action level, this constituent is not known to be persistent in the environment. Because sulfide is not identified as a target analyte for vadose zone soil and is not identified as a contaminant of concern in DOE/RL-2007-21, it is not identified as a groundwater COPC.

Total petroleum hydrocarbons (TPH)-motor oil. TPH-motor oil was analyzed for and detected in groundwater samples collected from 1998 through 2008. Although the maximum detected concentration of TPH-motor oil was greater than its action level, this constituent is reported under Method WTPH-D and it is captured under the analytical suit with TPH-diesel ranged. Because TPH –diesel range is identified as a groundwater COPC and they are reported under the same analytical suit, TPH-motor oil is not identified as a groundwater COPC

6 Results

6.1 Summary of Final COPCs

Table 6-1 identifies the COPCs for 100-N Decision Unit groundwater, proposed analytical methods, their contract-required detection limits (CRDLs), action levels, and action level basis.

A total of 43 analytes have been identified as COPCs for groundwater at the 100-N Decision Unit. The groundwater data set represents a comprehensive data set for defining the COPCs as it includes groundwater data collected between 1992 and 2009. The groundwater COPCs have been compared to the target analytes identified for vadose zone soil in the 100-N Decision Unit and to the groundwater contaminants of concern identified in DOE/RL-2007-21.

A selection process for target analytes in vadose zone soil has been conducted in coordination with this process for selecting COPCs in groundwater. The target analytes identified for vadose zone soil is based on an approach that was developed during the D/H Decision Unit systematic planning effort by Uncertainty Team #1 with participation from the Washington Department of Ecology, Fluor Hanford, and Washington Closure Hanford. Target analytes selection process relies on the review of remediation and characterization information (historic and current) and the identification of appropriate information sources, such as limited field investigation reports, interim action records of decision, cleanup verification documents (Cleanup Verification Packages, Remaining Sites Verification Packages, and other pertinent documents).

DOE/RL-2007-21, Volume 2 includes a baseline risk assessment for each of the groundwater operable units in the 100 Area and 300 Area. The results of this risk assessment identified several uncertainties associated with the groundwater data set. DOE/RL-2007-21, Volume 2 is currently a draft document undergoing regulatory review. Strontium-90 is identified as a COPC for the 100-NR-2 Groundwater Operable Unit. This draft report also reports several analytes as uncertainties, including arsenic, benzene, chloroform, cobalt, copper, DDD, DDT, ethylbenzene, gamma-chlordane, heptachlor, heptachlor epoxide, molybdenum, and xylenes (total). Analytes were identified with an uncertain status because a conclusion about COPC status was considered unsupportable and the data were considered suspect and inadequate to support risk assessment calculations.

Arsenic, benzene, chloroform, cobalt, copper, 4,4'-DDD, 4,4'-DDT, chlordane, heptachlor, heptachlor epoxide are identified as groundwater COPCs because concentrations are greater than their respective action level.

Molybdenum is not identified as a COPC because groundwater concentrations and MDLs were consistently below the action level of 80 μg/L.

Xylenes (total) and ethylbenzene are not identified as COPC because groundwater concentrations and MDLs were consistently below the action levels of 1,600 μg/L and 530 μg/L, respectively.

Table 6-1. Groundwater COPCs and Recommended Analytical Methods for the 100-N Decision Unit.

Analyte Name	Analyte Class	Analytical Method	Units	CRDL	Action Level	Action Level Basis
Antimony	Metal	Trace – ICP (6010) or ICP/MS (6020 or 200.8)	µg/L	6	5.60	Human Health Water + Organism
Arsenic	Metal	Trace – ICP (6010) or ICP/MS (6020 or 200.8)	µg/L	10	0.018	Human Health Water + Organism
Cadmium	Metal	Trace – ICP (6010) or ICP/MS (6020 or 200.8)	µg/L	2	0.25	Federal MCL
Chromium	Metal	ICP Metals - 6010	µg/L	10	74	Freshwater CCC
Cobalt	Metal	ICP Metals - 6010	µg/L	20	4.8	WAC 173-340-720 (4)
Copper	Metal	ICP/MS (6020 or 200.8)	µg/L	10	9	Freshwater CCC
Hexavalent Chromium	Metal	Chromium (hex) - 7196	µg/L	10	10	WAC 173-201A
Lead	Metal	Trace – ICP (6010)	µg/L	5	2.5	Freshwater CCC
Manganese	Metal	ICP Metals - 6010	µg/L	5	50	Secondary MCL
Mercury	Metal	Mercury - 7470	µg/L	0.5	0.0120	WAC 173-201A
Nickel	Metal	ICP Metals - 6010	µg/L	40	52	Freshwater CCC
Selenium	Metal	Trace – ICP (6010) or ICP/MS (6020 or 200.8)	µg/L	10	5	Freshwater CCC
Thallium	Metal	Trace – ICP (6010) or ICP/MS (6020 or 200.8)	µg/L	5	0.24	Human Health Water + Organism

Table 6-1. Groundwater COPCs and Recommended Analytical Methods for the 100-N Decision Unit.

Analyte Name	Analyte Class	Analytical Method	Units	CRDL	Action Level	Action Level Basis
Vanadium	Metal	ICP Metals - 6010	µg/L	25	112	WAC 173-340-720 (4)
Zinc	Metal	ICP Metals - 6010	µg/L	10	120	Freshwater CCC
4,4-DDD	Pesticide	Pesticides 8081	µg/L	0.1	0.00031	Human Health Water + Organism
4,4-DDT	Pesticide	Pesticides 8081	µg/L	0.1	0.00022	Human Health Water + Organism
Aldrin	Pesticide	Pesticides 8081	µg/L	0.05	0.000049	Human Health Water + Organism
alpha-BHC	Pesticide	Pesticides 8081	µg/L	0.05	0.0026	Human Health Water + Organism
Chlordane	Pesticide	Pesticides 8081	µg/L	0.5	0.0008	Human Health Water + Organism
Dieldrin	Pesticide	Pesticides 8081	µg/L	0.05	0.000052	Human Health Water + Organism
Endrin	Pesticide	Pesticides 8081	µg/L	0.1	0.0023	WAC 173-201A
Heptachlor	Pesticide	Pesticides 8081	µg/L	0.05	0.000079	Human Health Water + Organism
Heptachlor epoxide	Pesticide	Pesticides 8081	µg/L	0.05	0.000039	Human Health Water + Organism
Methoxychlor	Pesticide	Pesticides 8081	µg/L	0.5	0.03	Freshwater CCC
Cobalt-60	Radionuclide	Gamma Spec	pCi/L	25	100	Federal MCL

Table 6-1. Groundwater COPCs and Recommended Analytical Methods for the 100-N Decision Unit.

Analyte Name	Analyte Class	Analytical Method	Units	CRDL	Action Level	Action Level Basis
Strontium-90	Radionuclide	Strontium 89/90 - Sr-90	pCi/L	2	8	Federal MCL
Tritium	Radionuclide	Tritium (H-3)	pCi/L	400	20,000	Federal MCL
Total petroleum hydrocarbons-diesel range	TPH	WTPH-D	µg/L	500	500	WAC 173-340-720 (3)
Total petroleum hydrocarbons-gasoline range	TPH	WTPH-G	µg/L	500	1,000	WAC 173-340-720 (3)
1,4-Dichlorobenzene	Volatile organic compound	Volatile Organics - 8260	µg/L	5	1.82	WAC 173-340-720 (4)
Benzene	Volatile organic compound	Volatile Organics - 8260	µg/L	1.5	0.795	WAC 173-340-720 (4)
Chloroform	Volatile organic compound	Volatile Organics - 8260	µg/L	5	5.7	Human Health Water + Organism
Carbon Tetrachloride	Volatile organic compound	Volatile Organics - 8260	µg/L	1.0	0.23	Human Health Water + Organism
Styrene	Volatile organic compound	Volatile Organics - 8260	µg/L	5	1.46	Human Health Water + Organism
Tetrachloroethene	Volatile organic compound	Volatile Organics - 8260	µg/L	5	0.081	Groundwater Method B
Trichloroethene	Volatile organic compound	Volatile Organics - 8260	µg/L	1.0	0.49	Groundwater Method B
Vinyl Chloride	Volatile organic compound	Volatile Organics - 8260	µg/L	5	0.025	Human Health Water + Organism
Fluoride	Wet chemistry	Anions by IC - 300.0	µg/L	500	960	Groundwater Method B
Cyanide	Wet chemistry	EPA 9012	µg/L	5	5.2	Freshwater CCC
Nitrate	Wet chemistry	Anions by IC - 300.0	µg/L	250	10,000	Federal MCL

Table 6-1. Groundwater COPCs and Recommended Analytical Methods for the 100-N Decision Unit.

Analyte Name	Analyte Class	Analytical Method	Units	CRDL	Action Level	Action Level Basis
Nitrite	Wet chemistry	Anions by IC – 300.0	µg/L	250	1,000	Federal MCL
Sulfate	Wet chemistry	Anions by IC - 300.0	µg/L	500	250,000	Secondary MCL

CCC = criteria continuous concentration
ICP = inductively coupled plasma
MCL = maximum contaminant level
MS = mass spectrometry

7 References

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WAC 173-340-720, "Ground Water Cleanup Standards," *Washington Administrative Code*, Olympia, Washington.

WAC 173-340-730, "Surface Water Cleanup Standards," *Washington Administrative Code*, Olympia, Washington.

Table 2-1. Summary of Federal and State Water Quality Criteria for the 100-N Decision Unit

CAS NO.	Analyte Name	Units	Regional Screening Values - Residential Tap Water	Federal MCL or MCLG	WAC 173-201A	Freshwater CCC	Human Health Water + Organism	WAC 173-340-720(4)	WAC 173-340-730(3)	Action Level	Action Level Basis
630-20-6	1,1,1,2-Tetrachloroethane	ug/L	0.52	--	--	--	--	1.7	--	1.7	WAC 173-340-720 (4)
71-55-6	1,1,1-Trichloroethane	ug/L	9,100	200	--	--	--	16,000	926,000	200	Federal MCL
79-34-5	1,1,2,2-Tetrachloroethane	ug/L	0.067	--	--	--	0.17	0.22	6.5	0.17	Human Health Water + Organism
79-00-5	1,1,2-Trichloroethane	ug/L	0.24	5.0	--	--	0.59	0.77	25	0.59	Human Health Water + Organism
75-34-3	1,1-Dichloroethane	ug/L	2.4	--	--	--	0.55	800	--	0.55	Human Health Water + Organism
75-35-4	1,1-Dichloroethene	ug/L	340	7.0	--	--	330	0.073	1.9	0.073	WAC 173-340-720 (4)
96-18-4	1,2,3-Trichloropropane	ug/L	0.0096	--	--	--	--	0.0063	--	0.0063	WAC 173-340-720 (4)
95-94-3	1,2,4,5-Tetrachlorobenzene	ug/L	11	--	--	--	0.97	4.8	--	0.97	Human Health Water + Organism
120-82-1	1,2,4-Trichlorobenzene	ug/L	8.2	70	--	--	35	80	227	35	Human Health Water + Organism
96-12-8	1,2-Dibromo-3-chloropropane	ug/L	3.20E-04	0.20	--	--	--	0.031	--	0.031	WAC 173-340-720 (4)
106-93-4	1,2-Dibromoethane	ug/L	0.0065	0.050	--	--	--	0.044	--	0.044	WAC 173-340-720 (4)
95-50-1	1,2-Dichlorobenzene	ug/L	370	600	--	--	420	720	4,197	420	Human Health Water + Organism
107-06-2	1,2-Dichloroethane	ug/L	0.15	5.0	--	--	0.38	0.48	59	0.38	Human Health Water + Organism
540-59-0	1,2-Dichloroethene (Total)	ug/L	330	--	--	--	--	72	--	72	WAC 173-340-720 (4)
78-87-5	1,2-Dichloropropane	ug/L	0.39	5.0	--	--	0.50	0.64	23	0.50	Human Health Water + Organism
541-73-1	1,3-Dichlorobenzene	ug/L	--	--	--	--	320	240	1,400	240	WAC 173-340-720 (4)
106-46-7	1,4-Dichlorobenzene	ug/L	0.43	75	--	--	63	1.8	4.9	1.8	WAC 173-340-720 (4)
123-91-1	1,4-Dioxane	ug/L	6.1	--	--	--	--	4.0	--	4.0	WAC 173-340-720 (4)
130-15-4	1,4-Naphthoquinone	--	--	--	--	--	--	--	--	--	--
71-36-3	1-Butanol	ug/L	3,700	--	--	--	--	800	--	800	WAC 173-340-720 (4)
134-32-7	1-Naphthylamine	--	--	--	--	--	--	--	--	--	--
58-90-2	2,3,4,6-Tetrachlorophenol	ug/L	1,100	--	--	--	--	480	--	480	WAC 173-340-720 (4)
1746-01-6	2,3,7,8-Tetrachlorodibenzo-p-dioxin	ug/L	5.20E-07	3.00E-05	--	--	5.00E-09	5.83E-07	8.64E-09	5.00E-09	Human Health Water + Organism
93-76-5	2,4,5-T(2,4,5-Trichlorophenoxyacetic acid)	ug/L	370	--	--	--	--	160	--	160	WAC 173-340-720 (4)
93-72-1	2,4,5-TP(2-(2,4,5-Trichlorophenoxy)propionic acid)Silvex	ug/L	290	50	--	--	10	128	--	10	Human Health Water + Organism
95-95-4	2,4,5-Trichlorophenol	ug/L	3,700	--	--	--	1,800	800	--	800	WAC 173-340-720 (4)
88-06-2	2,4,6-Trichlorophenol	ug/L	6.1	--	--	--	1.4	4.0	3.9	1.4	Human Health Water + Organism
94-75-7	2,4-D(2,4-Dichlorophenoxyacetic acid)	ug/L	370	70	--	--	100	160	--	70	Federal MCL
120-83-2	2,4-Dichlorophenol	ug/L	110	--	--	--	77	48	191	48	WAC 173-340-720 (4)
105-67-9	2,4-Dimethylphenol	ug/L	730	--	--	--	380	320	553	320	WAC 173-340-720 (4)
51-28-5	2,4-Dinitrophenol	ug/L	73	--	--	--	69	32	3,457	32	WAC 173-340-720 (4)
121-14-2	2,4-Dinitrotoluene	ug/L	73	--	--	--	0.11	32	1,365	0.11	Human Health Water + Organism
87-65-0	2,6-Dichlorophenol	--	--	--	--	--	--	--	--	--	--
606-20-2	2,6-Dinitrotoluene	ug/L	37	--	--	--	--	16	--	16	WAC 173-340-720 (4)
53-96-3	2-Acetylaminofluorene	--	--	--	--	--	--	--	--	--	--
78-93-3	2-Butanone	ug/L	7,100	--	--	--	--	4,800	--	4,800	WAC 173-340-720 (4)
111-76-2	2-Butoxyethanol	ug/L	18,000	--	--	--	--	4,000	--	4,000	WAC 173-340-720 (4)
91-58-7	2-Chloronaphthalene	ug/L	2,900	--	--	--	1,000	1,280	1,030	1,000	Human Health Water + Organism
95-57-8	2-Chlorophenol	ug/L	180	--	--	--	81	40	97	40	WAC 173-340-720 (4)
591-78-6	2-Hexanone	ug/L	--	--	--	--	0	640	--	640	WAC 173-340-720 (4)
91-57-6	2-Methylnaphthalene	ug/L	150	--	--	--	--	32	--	32	WAC 173-340-720 (4)
95-48-7	2-Methylphenol (cresol, o-)	ug/L	1,800	--	--	--	--	400	--	400	WAC 173-340-720 (4)

Table 2-1. Summary of Federal and State Water Quality Criteria for the 100-N Decision Unit

CAS NO.	Analyte Name	Units	Regional Screening Values - Residential Tap Water	Federal MCL or MCLG	WAC 173-201A	Freshwater CCC	Human Health Water + Organism	WAC 173-340-720(4)	WAC 173-340-730(3)	Action Level	Action Level Basis
91-59-8	2-Naphthylamine	--	--	--	--	--	--	--	--	--	--
88-74-4	2-Nitroaniline	ug/L	--	--	--	--	--	24	--	24	WAC 173-340-720 (4)
88-75-5	2-Nitrophenol	--	--	--	--	--	--	--	--	--	--
108-10-1	2-Pentanone, 4-Methyl	ug/L	2,000	--	--	--	--	640	--	640	WAC 173-340-720 (4)
109-06-8	2-Picoline	--	--	--	--	--	--	--	--	--	--
67-63-0	2-Propanol	--	--	--	--	--	--	--	--	--	--
91-94-1	3,3'-Dichlorobenzidine	ug/L	0.15	--	--	--	0.021	0.19	0.046	0.021	Human Health Water + Organism
119-93-7	3,3'-Dimethylbenzidine	ug/L	0.0061	--	--	--	--	0.0095	--	0.0095	WAC 173-340-720 (4)
65794-96-9	3+4 Methylphenol (cresol, m+p)	--	--	--	--	--	--	--	--	--	--
56-49-5	3-Methylcholanthrene	--	--	--	--	--	--	--	--	--	--
108-39-4	3-Methylphenol (cresol, m-)	ug/L	1,800	--	--	--	--	400	--	400	WAC 173-340-720 (4)
99-09-2	3-Nitroaniline	ug/L	3.2	--	--	--	--	2.1	--	2.1	WAC 173-340-720 (4)
72-54-8	4,4'-DDD (Dichlorodiphenyldichloroethane)	ug/L	0.28	--	--	--	3.10E-04	0.36	5.04E-04	3.10E-04	Human Health Water + Organism
72-55-9	4,4'-DDE (Dichlorodiphenyldichloroethylene)	ug/L	0.20	--	--	--	2.20E-04	0.26	3.56E-04	2.20E-04	Human Health Water + Organism
50-29-3	4,4'-DDT (Dichlorodiphenyltrichloroethane)	ug/L	0.20	--	0.0010	0.0010	2.20E-04	0.26	3.56E-04	2.20E-04	Human Health Water + Organism
534-52-1	4,6-Dinitro-2-methylphenol	ug/L	3.7	--	--	--	13	1.6	--	1.6	WAC 173-340-720 (4)
92-67-1	4-Aminobiphenyl	--	--	--	--	--	--	--	--	--	--
101-55-3	4-Bromophenylphenyl ether	--	--	--	--	--	--	--	--	--	--
59-50-7	4-Chloro-3-methylphenol	ug/L	--	--	--	--	--	800	--	800	WAC 173-340-720 (4)
106-47-8	4-Chloroaniline	ug/L	1.2	--	--	--	--	64	--	64	WAC 173-340-720 (4)
7005-72-3	4-Chlorophenylphenyl ether	--	--	--	--	--	--	--	--	--	--
106-44-5	4-Methylphenol (cresol, p-)	ug/L	180	--	--	--	--	40	--	40	WAC 173-340-720 (4)
100-01-6	4-Nitroaniline	ug/L	3.2	--	--	--	--	2.1	--	2.1	WAC 173-340-720 (4)
100-02-7	4-Nitrophenol	ug/L	--	--	--	--	--	128	6,270	128	WAC 173-340-720 (4)
56-57-5	4-Nitroquinoline-1-oxide	--	--	--	--	--	--	--	--	--	--
99-55-8	5-Nitro-o-toluidine	ug/L	2.0	--	--	--	--	2.7	--	2.7	WAC 173-340-720 (4)
57-97-6	7,12-Dimethylbenz[a]anthracene	--	--	--	--	--	--	--	--	--	--
83-32-9	Acenaphthene	ug/L	2,200	--	--	--	670	960	643	643	WAC 173-430-730 (3)
208-96-8	Acenaphthylene	ug/L	--	--	--	--	--	960	643	643	WAC 173-430-730 (3)
67-64-1	Acetone	ug/L	22,000	--	--	--	--	7,200	--	7,200	WAC 173-340-720 (4)
75-05-8	Acetonitrile	ug/L	130	--	--	--	--	--	--	130	Regional Screening Values
98-86-2	Acetophenone	ug/L	3,700	--	--	--	--	1,600	--	1,600	WAC 173-340-720 (4)
107-02-8	Acrolein	ug/L	0.042	--	--	--	190	4.0	6.0	4.0	WAC 173-340-720 (4)
107-13-1	Acrylonitrile	ug/L	0.045	--	--	--	0.051	0.081	0.40	0.051	Human Health Water + Organism
14331-83-0	Actinium-228	--	--	--	--	--	--	--	--	--	--
309-00-2	Aldrin	ug/L	0.0040	--	0.0019	--	4.90E-05	0.0026	8.16E-05	4.90E-05	Human Health Water + Organism
ALKALINITY	Alkalinity	--	--	--	--	--	--	--	--	--	--
107-05-1	Allyl chloride	ug/L	2.1	--	--	--	--	800	--	800	WAC 173-340-720 (4)
122-09-8	alpha,alpha-Dimethylphenethylamine	--	--	--	--	--	--	--	--	--	--
319-84-6	Alpha-BHC	ug/L	0.011	--	--	--	0.0026	0.014	0.0079	0.0026	Human Health Water + Organism
5103-71-9	Alpha-Chlordane	ug/L	--	--	--	0.0043	8.00E-04	0.25	0.0013	8.00E-04	Human Health Water + Organism
7429-90-5	Aluminum	ug/L	37,000	50	--	87	--	16,000	--	50	Federal MCL
14596-10-2	Americium-241	pCi/L	--	15	--	--	--	--	--	15	Federal MCL

Table 2-1. Summary of Federal and State Water Quality Criteria for the 100-N Decision Unit

CAS NO.	Analyte Name	Units	Regional Screening Values - Residential Tap Water	Federal MCL or MCLG	WAC 173-201A	Freshwater CCC	Human Health Water + Organism	WAC 173-340-720(4)	WAC 173-340-730(3)	Action Level	Action Level Basis
7664-41-7	Ammonia	--	--	--	--	--	--	--	--	--	--
14798-03-9	Ammonium ion	--	--	--	--	--	--	--	--	--	--
62-53-3	Aniline	ug/L	12	--	--	--	--	7.7	--	7.7	WAC 173-340-720 (4)
120-12-7	Anthracene	ug/L	11,000	--	--	--	8,300	2,400	25,926	2,400	WAC 173-340-720 (4)
7440-36-0	Antimony	ug/L	15	6.0	--	--	5.6	6.4	1,040	5.6	Human Health Water + Organism
14234-35-6	Antimony-125	pCi/L	--	300	--	--	--	--	--	300	Federal MCL
140-57-8	Aramite	ug/L	2.7	--	--	--	--	3.5	--	3.5	WAC 173-340-720 (4)
12674-11-2	Aroclor-1016	ug/L	0.96	--	0.014	0.014	6.40E-05	0.044	1.04E-04	6.40E-05	Human Health Water + Organism
11104-28-2	Aroclor-1221	ug/L	0.0068	--	0.014	0.014	6.40E-05	0.044	1.04E-04	6.40E-05	Human Health Water + Organism
11141-16-5	Aroclor-1232	ug/L	0.0068	--	0.014	0.014	6.40E-05	0.044	1.04E-04	6.40E-05	Human Health Water + Organism
53469-21-9	Aroclor-1242	ug/L	0.034	--	0.014	0.014	6.40E-05	0.044	1.04E-04	6.40E-05	Human Health Water + Organism
12672-29-6	Aroclor-1248	ug/L	0.034	--	0.014	0.014	6.40E-05	0.044	1.04E-04	6.40E-05	Human Health Water + Organism
11097-69-1	Aroclor-1254	ug/L	0.034	--	0.014	0.014	6.40E-05	0.044	1.04E-04	6.40E-05	Human Health Water + Organism
11096-82-5	Aroclor-1260	ug/L	0.034	--	0.014	0.014	6.40E-05	0.044	1.04E-04	6.40E-05	Human Health Water + Organism
7440-38-2	Arsenic	ug/L	0.045	10	190	150	0.018	0.058	0.098	0.018	Human Health Water + Organism
103-33-3	Azobenzene	ug/L	0.12	--	--	--	--	0.80	--	0.80	WAC 173-340-720 (4)
7440-39-3	Barium	ug/L	7,300	2,000	--	--	1,000	3,200	--	1,000	Human Health Water + Organism
14798-08-4	Barium-140	--	--	--	--	--	--	--	--	--	--
71-43-2	Benzene	ug/L	0.41	5.0	--	--	2.2	0.80	23	0.80	WAC 173-340-720 (4)
56-55-3	Benzo(a)anthracene	ug/L	0.029	--	--	--	0.0038	0.12	0.30	0.0038	Human Health Water + Organism
50-32-8	Benzo(a)pyrene	ug/L	0.0029	0.20	--	--	0.0038	0.012	0.030	0.0038	Human Health Water + Organism
205-99-2	Benzo(b)fluoranthene	ug/L	0.029	--	--	--	0.0038	0.12	0.30	0.0038	Human Health Water + Organism
191-24-2	Benzo(ghi)perylene	ug/L	--	--	--	--	--	480	--	480	WAC 173-340-720 (4)
207-08-9	Benzo(k)fluoranthene	ug/L	0.29	--	--	--	0.0038	0.88	2.2	0.0038	Human Health Water + Organism
95-16-9	Benzothiazole	--	--	--	--	--	--	--	--	--	--
100-51-6	Benzyl alcohol	ug/L	18,000	--	--	--	--	4,800	--	4,800	WAC 173-340-720 (4)
7440-41-7	Beryllium	ug/L	73	4.0	--	--	--	32	273	4.0	Federal MCL
13966-02-4	Beryllium-7	--	--	--	--	--	--	--	--	--	--
319-85-7	beta-1,2,3,4,5,6-Hexachlorocyclohexane (beta-BHC)	ug/L	0.037	--	--	--	0.0091	0.049	0.028	0.0091	Human Health Water + Organism
108-60-1	Bis(2-chloro-1-methylethyl)ether	ug/L	0.32	--	--	--	1,400	1.3	38	1.3	WAC 173-340-720 (4)
111-91-1	Bis(2-Chloroethoxy)methane	ug/L	110	--	--	--	--	0.040	0.85	0.040	WAC 173-340-720 (4)
111-44-4	Bis(2-chloroethyl) ether	ug/L	0.012	--	--	--	0.030	0.040	0.85	0.030	Human Health Water + Organism
117-81-7	Bis(2-ethylhexyl) phthalate	ug/L	4.8	6.0	--	--	1.2	6.3	3.6	1.2	Human Health Water + Organism
7440-69-9	Bismuth	ug/L	--	--	--	--	--	--	--	--	--
7440-42-8	Boron	ug/L	7,300	--	--	--	--	3,200	--	3,200	WAC 173-340-720 (4)
24959-67-9	Bromide	--	--	--	--	--	--	--	--	--	--
75-27-4	Bromodichloromethane	ug/L	1.1	--	--	--	0.55	0.71	28	0.55	Human Health Water + Organism
75-25-2	Bromoform	ug/L	8.5	--	--	--	4.3	5.5	219	4.3	Human Health Water + Organism
74-83-9	Bromomethane	ug/L	8.7	--	--	--	47	11	968	11	WAC 173-340-720 (4)
85-68-7	Butylbenzylphthalate	ug/L	35	--	--	--	1,500	3,200	1,252	1,252	WAC 173-430-730 (3)
7440-43-9	Cadmium	ug/L	18	5.0	--	0.25	--	8.0	20	0.25	Freshwater CCC
7440-70-2	Calcium	--	--	--	--	--	--	--	--	--	--
86-74-8	Carbazole	ug/L	--	--	--	--	--	4.4	--	4.4	WAC 173-340-720 (4)

Table 2-1. Summary of Federal and State Water Quality Criteria for the 100-N Decision Unit

CAS NO.	Analyte Name	Units	Regional Screening Values - Residential Tap Water	Federal MCL or MCLG	WAC 173-201A	Freshwater CCC	Human Health Water + Organism	WAC 173-340-720(4)	WAC 173-340-730(3)	Action Level	Action Level Basis
75-15-0	Carbon disulfide	ug/L	1,000	--	--	--	--	800	--	800	WAC 173-340-720 (4)
56-23-5	Carbon tetrachloride	ug/L	0.20	5.0	--	--	0.23	0.34	2.7	0.23	Human Health Water + Organism
14762-75-5	Carbon-14	pCi/L	--	2,000	--	--	--	--	--	2,000	Federal MCL
CE/PR-144	Cerium/Praseodymium-144	--	--	--	--	--	--	--	--	--	--
13967-74-3	Cerium-141	--	--	--	--	--	--	--	--	--	--
14762-78-8	Cerium-144	pCi/L	--	30	--	--	--	--	--	30	Federal MCL
13967-70-9	Cesium-134	pCi/L	--	80	--	--	--	--	--	80	Federal MCL
10045-97-3	Cesium-137	pCi/L	--	200	--	--	--	--	--	200	Federal MCL
COD	Chemical Oxygen Demand	--	--	--	--	--	--	--	--	--	--
57-74-9	Chlordane	ug/L	--	--	0.0043	0.0043	8.00E-04	0.25	0.0013	8.00E-04	Human Health Water + Organism
16887-00-6	Chloride	ug/L	--	250,000	--	230,000	--	--	--	230,000	Freshwater CCC
108-90-7	Chlorobenzene	ug/L	91	100	--	--	130	160	5,034	130	Human Health Water + Organism
510-15-6	Chlorobenzilate	ug/L	0.61	--	--	--	--	0.32	--	0.32	WAC 173-340-720 (4)
75-00-3	Chloroethane	ug/L	21,000	--	--	--	--	--	--	21,000	Regional Screening Values
67-66-3	Chloroform	ug/L	0.19	70	--	--	5.7	7.2	283	5.7	Human Health Water + Organism
74-87-3	Chloromethane	ug/L	1.8	--	--	--	--	3.4	133	3.4	WAC 173-340-720 (4)
126-99-8	Chloroprene	ug/L	14	--	--	--	--	320	--	320	WAC 173-340-720 (4)
7440-47-3	Chromium	ug/L	55,000	100	--	74	--	24,000	243,000	74	Freshwater CCC
14392-02-0	Chromium-51	--	--	--	--	--	--	--	--	--	--
218-01-9	Chrysene	ug/L	2.9	--	--	--	0.0038	8.8	22	0.0038	Human Health Water + Organism
156-59-2	cis-1,2-Dichloroethylene	ug/L	370	70	--	--	--	80	--	70	Federal MCL
10061-01-5	cis-1,3-Dichloropropene	ug/L	0.43	--	--	--	0.34	0.24	19	0.24	WAC 173-340-720 (4)
7440-48-4	Cobalt	ug/L	11	--	--	--	--	4.8	--	4.8	WAC 173-340-720 (4)
13981-38-9	Cobalt-58	--	--	--	--	--	--	--	--	--	--
10198-40-0	Cobalt-60	pCi/L	--	100	--	--	--	--	--	100	Federal MCL
COLIFORM	Coliform Bacteria	--	--	--	--	--	--	--	--	--	--
7440-50-8	Copper	ug/L	1,500	1,300	--	9.0	1,300	640	2,880	9.0	Freshwater CCC
57-12-5	Cyanide	ug/L	730	200	5.2	5.2	140	320	51,852	5.2	Freshwater CCC
124-18-5	Decane	--	--	--	--	--	--	--	--	--	--
319-86-8	Delta-BHC	--	--	--	--	--	--	--	--	--	--
2303-16-4	Diallate	ug/L	1.1	--	--	--	--	1.4	--	1.4	WAC 173-340-720 (4)
53-70-3	Dibenz[a,h]anthracene	ug/L	0.0029	--	--	--	0.0038	0.88	2.2	0.0038	Human Health Water + Organism
132-64-9	Dibenzofuran	ug/L	--	--	--	--	--	32	--	32	WAC 173-340-720 (4)
124-48-1	Dibromochloromethane	ug/L	0.80	--	--	--	0.40	0.52	21	0.40	Human Health Water + Organism
74-95-3	Dibromomethane	ug/L	370	--	--	--	--	80	--	80	WAC 173-340-720 (4)
75-71-8	Dichlorodifluoromethane	ug/L	390	--	--	--	--	1,600	--	1,600	WAC 173-340-720 (4)
60-57-1	Dieldrin	ug/L	0.0042	--	0.0019	0.056	5.20E-05	0.0055	8.67E-05	5.20E-05	Human Health Water + Organism
60-29-7	Diethyl ether	ug/L	7,300	--	--	--	--	1,600	--	1,600	WAC 173-340-720 (4)
84-66-2	Diethylphthalate	ug/L	29,000	--	--	--	17,000	12,800	28,412	12,800	WAC 173-340-720 (4)
60-51-5	Dimethoate	ug/L	7.3	--	--	--	--	3.2	--	3.2	WAC 173-340-720 (4)
131-11-3	Dimethyl phthalate	ug/L	--	--	--	--	270,000	16,000	72,016	16,000	WAC 173-340-720 (4)
84-74-2	Di-n-butylphthalate	ug/L	3,700	--	--	--	2,000	1,600	2,913	1,600	WAC 173-340-720 (4)
117-84-0	Di-n-octylphthalate	ug/L	--	--	--	--	--	320	--	320	WAC 173-340-720 (4)

Table 2-1. Summary of Federal and State Water Quality Criteria for the 100-N Decision Unit

CAS NO.	Analyte Name	Units	Regional Screening Values - Residential Tap Water	Federal MCL or MCLG	WAC 173-201A	Freshwater CCC	Human Health Water + Organism	WAC 173-340-720(4)	WAC 173-340-730(3)	Action Level	Action Level Basis
88-85-7	Dinoseb(2-secButyl-4,6-dinitrophenol)	ug/L	37	7.0	--	--	--	16	--	7.0	Federal MCL
122-39-4	Diphenylamine	ug/L	910	--	--	--	--	400	2,160	400	WAC 173-340-720 (4)
DO	Dissolved oxygen	--	--	--	--	--	--	--	--	--	--
298-04-4	Disulfoton	ug/L	1.5	--	--	--	--	0.64	--	0.64	WAC 173-340-720 (4)
112-40-3	Dodecane	--	--	--	--	--	--	--	--	--	--
959-98-8	Endosulfan I	ug/L	--	--	--	0.056	62	96	58	0.056	Freshwater CCC
33213-65-9	Endosulfan II	ug/L	--	--	--	0.056	62	96	58	0.056	Freshwater CCC
1031-07-8	Endosulfan sulfate	ug/L	--	--	--	--	62	--	--	62	Human Health Water + Organism
72-20-8	Endrin	ug/L	11	2.0	0.0023	0.036	0.059	4.8	0.20	0.0023	WAC 173-201A
7421-93-4	Endrin aldehyde	ug/L	--	--	--	--	0.29	--	--	0.29	Human Health Water + Organism
53494-70-5	Endrin ketone	--	--	--	--	--	--	--	--	--	--
64-17-5	Ethanol	--	--	--	--	--	--	--	--	--	--
141-78-6	Ethyl acetate	ug/L	33,000	--	--	--	--	72,000	--	72,000	WAC 173-340-720 (4)
107-12-0	Ethyl cyanide	--	--	--	--	--	--	--	--	--	--
97-63-2	Ethyl methacrylate	ug/L	3,300	--	--	--	--	720	--	720	WAC 173-340-720 (4)
62-50-0	Ethyl methanesulfonate	--	--	--	--	--	--	--	--	--	--
100-41-4	Ethylbenzene	ug/L	1.5	700	--	--	530	800	6,914	530	Human Health Water + Organism
107-21-1	Ethylene glycol	ug/L	73,000	--	--	--	--	16,000	--	16,000	WAC 173-340-720 (4)
14683-23-9	Europium-152	pCi/L	--	200	--	--	--	--	--	200	Federal MCL
15585-10-1	Europium-154	pCi/L	--	60	--	--	--	--	--	60	Federal MCL
14391-16-3	Europium-155	pCi/L	--	600	--	--	--	--	--	600	Federal MCL
52-85-7	Famphur	--	--	--	--	--	--	--	--	--	--
206-44-0	Fluoranthene	ug/L	1,500	--	--	--	130	640	90	90	WAC 173-430-730 (3)
86-73-7	Fluorene	ug/L	1,500	--	--	--	1,100	640	3,457	640	WAC 173-340-720 (4)
16984-48-8	Fluoride	ug/L	2,200	4,000	--	--	--	960	--	960	WAC 173-340-720 (4)
58-89-9	Gamma-BHC (Lindane)	ug/L	0.061	0.20	0.080	--	0.98	0.067	0.038	0.038	WAC 173-430-730 (3)
12587-46-1	Gross alpha	pCi/L	--	15	--	--	--	--	--	15	Federal MCL
12587-47-2	Gross beta	--	--	--	--	--	--	--	--	--	--
76-44-8	Heptachlor	ug/L	0.015	0.40	0.0038	0.0038	7.90E-05	0.019	1.29E-04	7.90E-05	Human Health Water + Organism
1024-57-3	Heptachlor epoxide	ug/L	0.0074	0.20	--	0.0038	3.90E-05	0.0048	6.36E-05	3.90E-05	Human Health Water + Organism
118-74-1	Hexachlorobenzene	ug/L	0.042	1.0	--	--	2.80E-04	0.055	4.66E-04	2.80E-04	Human Health Water + Organism
87-68-3	Hexachlorobutadiene	ug/L	0.86	--	--	--	0.44	0.56	30	0.44	Human Health Water + Organism
77-47-4	Hexachlorocyclopentadiene	ug/L	220	50	--	--	40	96	3,580	40	Human Health Water + Organism
67-72-1	Hexachloroethane	ug/L	4.8	--	--	--	1.4	3.1	5.3	1.4	Human Health Water + Organism
70-30-4	Hexachlorophene	ug/L	11	--	--	--	--	4.8	--	4.8	WAC 173-340-720 (4)
1888-71-7	Hexachloropropene	--	--	--	--	--	--	--	--	--	--
18540-29-9	Hexavalent Chromium	ug/L	110	--	10	11	--	48	486	10	WAC 173-201A
302-01-2	Hydrazine	ug/L	0.022	--	--	--	--	0.015	--	0.015	WAC 173-340-720 (4)
193-39-5	Indeno(1,2,3-cd)pyrene	ug/L	0.029	--	--	--	0.0038	0.12	0.30	0.0038	Human Health Water + Organism
15046-84-1	Iodine-129	pCi/L	--	1.0	--	--	--	--	--	1.0	Federal MCL
10043-66-0	Iodine-131	--	--	--	--	--	--	--	--	--	--
74-88-4	Iodomethane	--	--	--	--	--	--	--	--	--	--
7439-89-6	Iron	ug/L	26,000	300	--	1,000	300	11,200	--	300	Federal MCL

Table 2-1. Summary of Federal and State Water Quality Criteria for the 100-N Decision Unit

CAS NO.	Analyte Name	Units	Regional Screening Values - Residential Tap Water	Federal MCL or MCLG	WAC 173-201A	Freshwater CCC	Human Health Water + Organism	WAC 173-340-720(4)	WAC 173-340-730(3)	Action Level	Action Level Basis
14596-12-4	Iron-59	--	--	--	--	--	--	--	--	--	--
78-83-1	Isobutyl alcohol	ug/L	11,000	--	--	--	--	2,400	--	2,400	WAC 173-340-720 (4)
465-73-6	Isodrin	--	--	--	--	--	--	--	--	--	--
78-59-1	Isophorone	ug/L	71	--	--	--	35	46	1,558	35	Human Health Water + Organism
120-58-1	Isosafrole	--	--	--	--	--	--	--	--	--	--
143-50-0	Kepone	ug/L	0.0042	--	--	--	--	--	--	0.0042	Regional Screening Values
7439-92-1	Lead	ug/L	--	15	--	2.5	--	--	--	2.5	Freshwater CCC
15092-94-1	Lead-212	--	--	--	--	--	--	--	--	--	--
15067-28-4	Lead-214	--	--	--	--	--	--	--	--	--	--
7439-93-2	Lithium	ug/L	73	--	--	--	--	32	--	32	WAC 173-340-720 (4)
7439-95-4	Magnesium	--	--	--	--	--	--	--	--	--	--
7439-96-5	Manganese	ug/L	880	50	--	--	50	752	--	50	Federal MCL
13966-31-9	Manganese-54	pCi/L	--	300	--	--	--	--	--	300	Federal MCL
99-65-0	m-Dinitrobenzene	ug/L	3.7	--	--	--	--	1.6	--	1.6	WAC 173-340-720 (4)
7439-97-6	Mercury	ug/L	0.63	2.0	0.012	--	--	4.8	--	0.012	WAC 173-201A
126-98-7	Methacrylonitrile	ug/L	1.0	--	--	--	--	0.80	--	0.80	WAC 173-340-720 (4)
67-56-1	Methanol	ug/L	18,000	--	--	--	--	4,000	--	4,000	WAC 173-340-720 (4)
91-80-5	Methapyrilene	--	--	--	--	--	--	--	--	--	--
72-43-5	Methoxychlor	ug/L	180	40	--	0.030	100	80	8.4	0.030	Freshwater CCC
80-62-6	Methyl methacrylate	ug/L	1,400	--	--	--	--	11,200	--	11,200	WAC 173-340-720 (4)
66-27-3	Methyl methanesulfonate	--	--	--	--	--	--	--	--	--	--
298-00-0	Methyl parathion	ug/L	9.1	--	--	--	--	4.0	--	4.0	WAC 173-340-720 (4)
75-09-2	Methylene chloride	ug/L	4.8	5.0	--	--	4.6	5.8	960	4.6	Human Health Water + Organism
7439-98-7	Molybdenum	ug/L	180	--	--	--	--	80	--	80	WAC 173-340-720 (4)
7778-77-0	Monopotassium phosphate	--	--	--	--	--	--	--	--	--	--
91-20-3	Naphthalene	ug/L	0.14	--	--	--	--	160	4,940	160	WAC 173-340-720 (4)
7440-02-0	Nickel	ug/L	730	--	--	52	610	320	1,103	52	Freshwater CCC
14681-63-1	Niobium-94	pCi/L	--	--	--	--	--	--	--	--	--
14797-55-8	Nitrate	ug/L	58,000	10,000	--	--	--	25,600	--	10,000	Federal MCL
14797-65-0	Nitrite	ug/L	3,700	1,000	--	--	--	1,600	--	1,000	Federal MCL
98-95-3	Nitrobenzene	ug/L	3.4	--	--	--	17	16	1,790	16	WAC 173-340-720 (4)
NO2+NO3-N	Nitrogen in Nitrite and Nitrate	--	--	--	--	--	--	--	--	--	--
930-55-2	Nitrosopyrrolidine	ug/L	0.032	--	--	--	0.016	0.042	--	0.016	Human Health Water + Organism
55-18-5	n-Nitrosodiethylamine	ug/L	1.40E-04	--	--	--	8.00E-04	2.92E-04	--	2.92E-04	WAC 173-340-720 (4)
62-75-9	n-Nitrosodimethylamine	ug/L	4.20E-04	--	--	--	6.90E-04	8.58E-04	4.9	6.90E-04	Human Health Water + Organism
924-16-3	n-Nitrosodi-n-butylamine	ug/L	0.0024	--	--	--	0.0063	0.0081	--	0.0063	Human Health Water + Organism
621-64-7	n-Nitrosodi-n-dipropylamine	ug/L	0.0096	--	--	--	0.0050	0.013	0.82	0.0050	Human Health Water + Organism
86-30-6	n-Nitrosodiphenylamine	ug/L	14	--	--	--	3.3	18	9.7	3.3	Human Health Water + Organism
10595-95-6	n-Nitrosomethylethylamine	ug/L	0.0031	--	--	--	--	0.0040	--	0.0040	WAC 173-340-720 (4)
59-89-2	n-Nitrosomorpholine	--	--	--	--	--	--	--	--	--	--
100-75-4	n-Nitrosopiperidine	--	--	--	--	--	--	--	--	--	--
126-68-1	O,O,O-Triethyl phosphorothioate	--	--	--	--	--	--	--	--	--	--
297-97-2	O,O-Diethyl O-2-pyrazinyl phosphorothioate	--	--	--	--	--	--	--	--	--	--

Table 2-1. Summary of Federal and State Water Quality Criteria for the 100-N Decision Unit

CAS NO.	Analyte Name	Units	Regional Screening Values - Residential Tap Water	Federal MCL or MCLG	WAC 173-201A	Freshwater CCC	Human Health Water + Organism	WAC 173-340-720(4)	WAC 173-340-730(3)	Action Level	Action Level Basis
OIL/GREASE	Oil and grease	--	--	--	--	--	--	--	--	--	--
95-53-4	o-Toluidine	ug/L	0.37	--	--	--	--	0.36	--	0.36	WAC 173-340-720 (4)
EH	Oxidation Reduction Potential	--	--	--	--	--	--	--	--	--	--
56-38-2	Parathion	ug/L	220	--	0.013	0.013	--	96	--	0.013	Freshwater CCC
60-11-7	p-Dimethylaminoazobenzene	--	--	--	--	--	--	--	--	--	--
608-93-5	Pentachlorobenzene	ug/L	29	--	--	--	1.4	13	--	1.4	Human Health Water + Organism
76-01-7	Pentachloroethane	ug/L	0.75	--	--	--	--	--	--	0.75	Regional Screening Values
82-68-8	Pentachloronitrobenzene (PCNB)	ug/L	0.26	--	--	--	--	0.34	--	0.34	WAC 173-340-720 (4)
87-86-5	Pentachlorophenol	ug/L	0.56	1.0	--	15	0.27	0.73	4.9	0.27	Human Health Water + Organism
PH	pH Measurement	--	--	--	--	--	--	--	--	--	--
62-44-2	Phenacetin	--	--	--	--	--	--	--	--	--	--
85-01-8	Phenanthrene	ug/L	--	--	--	--	--	2,400	25,926	2,400	WAC 173-340-720 (4)
108-95-2	Phenol	ug/L	11,000	--	--	--	21,000	2,400	556,000	2,400	WAC 173-340-720 (4)
298-02-2	Phorate	ug/L	7.3	--	--	--	--	1.6	--	1.6	WAC 173-340-720 (4)
14265-44-2	Phosphate	--	--	--	--	--	--	--	--	--	--
7723-14-0	Phosphorus	ug/L	0.73	--	--	--	--	0.32	--	0.32	WAC 173-340-720 (4)
13981-16-3	Plutonium-238	pCi/L	--	15	--	--	--	--	--	15	Federal MCL
15117-48-3	Plutonium-239	pCi/L	--	15	--	--	--	--	--	15	Federal MCL
PU-239/240	Plutonium-239/240	pCi/L	--	15	--	--	--	--	--	15	Federal MCL
14119-32-5	Plutonium-241	--	--	--	--	--	--	--	--	--	--
136677-10-6	Polychlorinated dibenzofurans	--	--	--	--	--	--	--	--	--	--
136677-09-3	Polychlorinated dibenzo-p-dioxins	--	--	--	--	--	--	--	--	--	--
7440-09-7	Potassium	--	--	--	--	--	--	--	--	--	--
13966-00-2	Potassium-40	--	--	--	--	--	--	--	--	--	--
106-50-3	p-Phenylenediamine	ug/L	6,900	--	--	--	--	96	--	96	WAC 173-340-720 (4)
23950-58-5	Pronamide	ug/L	2,700	--	--	--	--	1,200	--	1,200	WAC 173-340-720 (4)
129-00-0	Pyrene	ug/L	1,100	--	--	--	830	480	2,593	480	WAC 173-340-720 (4)
110-86-1	Pyridine	ug/L	37	--	--	--	--	8.0	--	8.0	WAC 173-340-720 (4)
7440-14-4	Radium	--	--	--	--	--	--	--	--	--	--
15623-45-7	Radium-223	--	--	--	--	--	--	--	--	--	--
13982-63-3	Radium-226	pCi/L	--	5.0	--	--	--	--	--	5.0	Federal MCL
15262-20-1	Radium-228	pCi/L	--	5.0	--	--	--	--	--	5.0	Federal MCL
13968-53-1	Ruthenium-103	--	--	--	--	--	--	--	--	--	--
13967-48-1	Ruthenium-106	pCi/L	--	30	--	--	--	--	--	30	Federal MCL
94-59-7	Safrol	--	--	--	--	--	--	--	--	--	--
7782-49-2	Selenium	ug/L	180	50	5.0	5.0	170	80	2,700	5.0	Freshwater CCC
7440-21-3	Silicon	--	--	--	--	--	--	--	--	--	--
7440-22-4	Silver	ug/L	180	100	--	--	--	80	25,926	80	WAC 173-340-720 (4)
7440-23-5	Sodium	--	--	--	--	--	--	--	--	--	--
CONDUCT	Specific Conductance	--	--	--	--	--	--	--	--	--	--
7440-24-6	Strontium	ug/L	22,000	--	--	--	--	9,600	--	9,600	WAC 173-340-720 (4)
14158-27-1	Strontium-89	--	--	--	--	--	--	--	--	--	--
10098-97-2	Strontium-90	pCi/L	--	8.0	--	--	--	--	--	8.0	Federal MCL

Table 2-1. Summary of Federal and State Water Quality Criteria for the 100-N Decision Unit

CAS NO.	Analyte Name	Units	Regional Screening Values - Residential Tap Water	Federal MCL or MCLG	WAC 173-201A	Freshwater CCC	Human Health Water + Organism	WAC 173-340-720(4)	WAC 173-340-730(3)	Action Level	Action Level Basis
100-42-5	Styrene	ug/L	1,600	100	--	--	--	1.5	--	1.5	WAC 173-340-720 (4)
14808-79-8	Sulfate	ug/L	--	250,000	--	--	--	--	--	250,000	Federal MCL
18496-25-8	Sulfide	ug/L	--	--	--	2.0	0	--	--	2.0	Freshwater CCC
99-35-4	sym-Trinitrobenzene	ug/L	1,100	--	--	--	--	42,900	--	42,900	WAC 173-340-720 (4)
14133-76-7	Technetium-99	pCi/L	--	900	--	--	--	--	--	900	Federal MCL
TEMPERATURE	Temperature	--	--	--	--	--	--	--	--	--	--
127-18-4	Tetrachloroethene	ug/L	0.11	5.0	--	--	0.69	0.081	0.39	0.081	WAC 173-340-720 (4)
25167-83-3	Tetrachlorophenol	--	--	--	--	--	--	--	--	--	--
629-59-4	Tetradecane	--	--	--	--	--	--	--	--	--	--
3689-24-5	Tetraethyl dithiopyrophosphate (Sulfotepp)	ug/L	18	--	--	--	--	8.0	--	8.0	WAC 173-340-720 (4)
109-99-9	Tetrahydrofuran	--	--	--	--	--	--	--	--	--	--
7440-28-0	Thallium	ug/L	2.4	2.0	--	--	0.24	1.1	1.6	0.24	Human Health Water + Organism
14274-82-9	Thorium-228	pCi/L	--	15	--	--	--	--	--	15	Federal MCL
14269-63-7	Thorium-230	pCi/L	--	15	--	--	--	--	--	15	Federal MCL
TH-232	Thorium-232	pCi/L	--	15	--	--	--	--	--	15	Federal MCL
15065-10-8	Thorium-234	--	--	--	--	--	--	--	--	--	--
7440-31-5	Tin	ug/L	22,000	--	--	--	--	9,600	--	9,600	WAC 173-340-720 (4)
13966-06-8	Tin-113	--	--	--	--	--	--	--	--	--	--
14683-08-0	Tin-125	--	--	--	--	--	--	--	--	--	--
7440-32-6	Titanium	ug/L	--	--	--	--	--	64,000	--	64,000	WAC 173-340-720 (4)
108-88-3	Toluene	ug/L	2,300	1,000	--	--	1,300	640	19,400	640	WAC 173-340-720 (4)
TC	Total carbon	--	--	--	--	--	--	--	--	--	--
1319-77-3	Total cresols	--	--	--	--	--	--	--	--	--	--
TDS	Total dissolved solids	--	--	--	--	--	--	--	--	--	--
TOTHALOGEN	Total halogens (all)	--	--	--	--	--	--	--	--	--	--
TINC	Total Inorganic Carbon	--	--	--	--	--	--	--	--	--	--
TOC	Total organic carbon	--	--	--	--	--	--	--	--	--	--
59473-04-0	Total organic halides	--	--	--	--	--	--	--	--	--	--
TPH	Total petroleum hydrocarbons	--	--	--	--	--	--	--	--	--	--
TPHDIESEL	Total petroleum hydrocarbons - diesel range	ug/L	--	--	--	--	Method A	500	--	500	WAC 173-340-720 (3)
TPHGASOLINE	Total petroleum hydrocarbons - gasoline range	ug/L	--	--	--	--	Method A	1,000	--	1,000	WAC 173-340-720 (3)
TPHKEROSENE	Total petroleum hydrocarbons - kerosene range	ug/L	--	--	--	--	Method A	500	--	500	WAC 173-340-720 (3)
TPH/OILH	Total petroleum hydrocarbons - motor oil (high boiling)	ug/L	--	--	--	--	--	500	--	500	WAC 173-340-720 (3)
8001-35-2	Toxaphene	ug/L	0.061	3.0	2.00E-04	2.00E-04	2.80E-04	0.080	4.50E-04	2.00E-04	Freshwater CCC
156-60-5	trans-1,2-Dichloroethylene	ug/L	110	100	--	--	140	160	32,818	100	Federal MCL
10061-02-6	trans-1,3-Dichloropropene	ug/L	0.43	--	--	--	0.34	0.24	19	0.24	WAC 173-340-720 (4)
110-57-6	trans-1,4-Dichloro-2-butene	--	--	--	--	--	--	--	--	--	--
5103-74-2	trans-Chlordane	ug/L	--	--	--	0.0043	8.00E-04	0.25	0.0013	8.00E-04	Human Health Water + Organism
126-73-8	Tributyl phosphate	ug/L	7.3	--	--	--	--	16	--	16	WAC 173-340-720 (4)
79-01-6	Trichloroethene	ug/L	1.7	5.0	--	--	2.5	0.49	6.9	0.49	WAC 173-340-720 (4)
75-69-4	Trichloromonofluoromethane	ug/L	1,300	--	--	--	--	2,400	--	2,400	WAC 173-340-720 (4)
25167-82-2	Trichlorophenol	--	--	--	--	--	--	--	--	--	--
115-96-8	Tris-2-chloroethyl phosphate	ug/L	4.8	--	--	--	--	--	--	4.8	Regional Screening Values

Table 2-1. Summary of Federal and State Water Quality Criteria for the 100-N Decision Unit

CAS NO.	Analyte Name	Units	Regional Screening Values - Residential Tap Water	Federal MCL or MCLG	WAC 173-201A	Freshwater CCC	Human Health Water + Organism	WAC 173-340-720(4)	WAC 173-340-730(3)	Action Level	Action Level Basis
10028-17-8	Tritium	pCi/L	--	20,000	--	--	--	--	--	20,000	Federal MCL
TURBIDITY	Turbidity	--	--	--	--	--	--	--	--	--	--
7440-61-1	Uranium	ug/L	110	30	--	--	--	48	--	30	Federal MCL
U-233/234	Uranium-233/234	--	--	--	--	--	--	--	--	--	--
13966-29-5	Uranium-234	--	--	--	--	--	--	--	--	--	--
15117-96-1	Uranium-235	--	--	--	--	--	--	--	--	--	--
U-238	Uranium-238	--	--	--	--	--	--	--	--	--	--
7440-62-2	Vanadium	ug/L	260	--	--	--	--	112	--	112	WAC 173-340-720 (4)
108-05-4	Vinyl acetate	ug/L	410	--	--	--	--	8,000	--	8,000	WAC 173-340-720 (4)
75-01-4	Vinyl chloride	ug/L	0.016	2.0	--	--	0.025	0.029	3.7	0.025	Human Health Water + Organism
1330-20-7	Xylenes (total)	ug/L	200	10,000	--	--	--	1,600	--	1,600	WAC 173-340-720 (4)
7440-66-6	Zinc	ug/L	11,000	5,000	--	120	7,400	4,800	16,548	120	Freshwater CCC
13982-39-3	Zinc-65	pCi/L	--	300	--	--	--	--	--	300	Federal MCL
ZR/NB-95	Zirconium/Niobium-95	--	--	--	--	--	--	--	--	--	--
13967-71-0	Zirconium-95	--	--	--	--	--	--	--	--	--	--

Table 5-4. Summary of Groundwater Analytes That Exceed an Action Level for the 100-N Decision Unit

Analyte Name	Analyte Class	Begin Sample Date	End Sample Date	Total Samples	Total Detects	Frequency of Detection	Min Detection Limit	Max Detection Limit	Min Detected Result	Max Detected Result	Action Level	Units	Action Level Basis	Level of Exceedance	COPC?	Basis For Inclusion
Sulfide	WET CHEM	9/18/1992	6/13/1994	15	3	20.00%	100	10000	120	300	2.00E+00	ug/L	Freshwater CCC	1.50E+02	No	Not known to be persistent in the environment; not a vadose zone target analyte

Table 3-1. Summary of Groundwater Monitoring Wells Included in COPC Selection Process for the 100-N Decision Unit

Well Name		
199-K-112A	199-N-37	199-N-69
199-K-151	199-N-39	199-N-70
199-K-152	199-N-40	199-N-71
199-K-153	199-N-41	199-N-72
199-N-2	199-N-42	199-N-73
199-N-3	199-N-43	199-N-74
199-N-6	199-N-44	199-N-76
199-N-7	199-N-45	199-N-77
199-N-14	199-N-47	199-N-80
199-N-15	199-N-48	199-N-81
199-N-16	199-N-49	199-N-92A
199-N-17	199-N-50	199-N-96A
199-N-18	199-N-51	199-N-99A
199-N-19	199-N-52	199-N-119
199-N-20	199-N-53	199-N-120
199-N-21	199-N-54	199-N-121
199-N-22	199-N-55	199-N-165
199-N-23	199-N-56	699-73-61
199-N-24	199-N-57	699-77-54
199-N-25	199-N-58	699-78-62
199-N-26	199-N-59	699-81-58
199-N-27	199-N-60	699-81-84B
199-N-28	199-N-61	699-83-60
199-N-30	199-N-62	699-83-61A
199-N-31	199-N-63	699-83-61B
199-N-32	199-N-64	699-84-62K
199-N-33	199-N-65	699-85-61
199-N-34	199-N-66	699-86-60
199-N-36	199-N-67	699-87-55

Table 5-1. Summary of Groundwater Analytes that Meet General Exclusion Criteria for the 100-N Decision Unit

Analyte Name	Analyte Class	Begin Sample Date	End Sample Date	Total Samples	Total Detects	Frequency of Detection	Min Detection Limit	Max Detection Limit	Min Detected Result	Max Detected Result	Basis for Exclusion
Polychlorinated dibenzofurans	Dioxin/Furan	5/10/1993	5/10/1993	1	0	0.00%	0.002	0.002	--	--	No Action Level
Polychlorinated dibenzo-p-dioxins	Dioxin/Furan	5/10/1993	5/10/1993	1	0	0.00%	0.002	0.002	--	--	No Action Level
Bismuth	METAL	11/1/2005	3/20/2006	11	0	0.00%	5.1	6.1	--	--	No Action Level
Calcium	METAL	1/23/1992	2/18/2009	465	465	100.00%	--	--	2100	256000	Essential Nutrient
Magnesium	METAL	1/23/1992	2/18/2009	466	466	100.00%	--	--	370	57200	Essential Nutrient
Potassium	METAL	1/23/1992	2/18/2009	435	426	97.93%	662	6380	810	15400	Essential Nutrient
Radium	METAL	1/23/1992	1/5/1995	130	34	26.15%	-0.082	0.136	0.00867	2.5	No Action Level
Silicon	METAL	11/1/2005	3/20/2006	11	11	100.00%	--	--	7320	17500	No Action Level
Sodium	METAL	1/23/1992	2/18/2009	435	435	100.00%	--	--	2370	240000	Essential Nutrient
Oil and grease	Oil/Grease	12/1/1992	10/7/2008	163	74	45.40%	700	10000	700	4460000	No Action Level
Delta-BHC	PEST	1/28/1992	3/20/2006	48	1	2.08%	0.001	0.1	0.2	0.2	No Action Level
Endrin ketone	PEST	9/18/1992	3/20/2006	18	2	11.11%	0.04	0.1	0.032	0.044	No Action Level
Actinium-228	RAD	3/3/1995	9/26/1996	5	0	0.00%	-15.8	9.55	--	--	Half-Life less than 3 years
Antimony-125	RAD	1/23/1992	12/8/2008	424	79	18.63%	-31.3	22.1	0	52.4	Half-Life less than 3 years
Barium-140	RAD	6/17/1993	6/26/1993	2	0	0.00%	-4.5	-3.5	--	--	Half-Life less than 3 years
Beryllium-7	RAD	6/17/1993	12/8/2008	213	1	0.47%	-262	136	19	19	Half-Life less than 3 years
Cerium/Praseodymium-144	RAD	3/3/1995	3/3/1995	1	0	0.00%	2.79	2.79	--	--	Half-Life less than 3 years
Cerium-141	RAD	6/17/1993	6/26/1993	2	0	0.00%	-11	-5.9	--	--	Half-Life less than 3 years
Cerium-144	RAD	9/18/1992	6/26/1993	4	0	0.00%	-35	27.1	--	--	Half-Life less than 3 years
Cesium-134	RAD	9/18/1992	12/8/2008	223	2	0.90%	-12.6	10	0.516	0.587	Half-Life less than 3 years
Chromium-51	RAD	9/18/1992	8/16/1994	8	1	12.50%	100	600	121	121	Half-Life less than 3 years
Cobalt-58	RAD	9/18/1992	9/15/2006	116	0	0.00%	-49.3	40.4	--	--	Half-Life less than 3 years
Gross beta	RAD	1/23/1992	12/8/2008	842	827	98.22%	-1.5	8.04	0.0402	50000	No Action Level
Iodine-131	RAD	6/17/1993	6/26/1993	2	0	0.00%	0.47	2.8	--	--	Half-Life less than 3 years
Iron-59	RAD	9/18/1992	9/15/2006	120	0	0.00%	-182	989	--	--	Half-Life less than 3 years
Lead-212	RAD	3/3/1995	9/26/1996	5	0	0.00%	-7.95	4.7	--	--	Half-Life less than 3 years
Lead-214	RAD	3/3/1995	9/26/1996	5	2	40.00%	-5.77	5.97	16.4	41.9	Half-Life less than 3 years
Manganese-54	RAD	6/17/1993	3/6/1997	4	0	0.00%	-2.1	-0.16	--	--	Half-Life less than 3 years
Niobium-94	RAD	2/6/1997	2/6/1997	1	0	0.00%	--	--	--	--	No Action Level
Plutonium-241	RAD	8/16/1994	8/16/1994	1	1	100.00%	--	--	-0.603	-0.603	No Action Level
Potassium-40	RAD	9/18/1992	12/8/2008	257	9	3.50%	-155	200	5.71	283	Background Radiation
Radium-223	RAD	9/18/1992	9/18/1992	1	0	0.00%	1970	1970	--	--	Half-Life less than 3 years
Radium-226	RAD	9/18/1992	12/3/2007	63	1	1.59%	-109	20	102	102	Background Radiation
Ruthenium-103	RAD	6/17/1993	2/6/1997	3	0	0.00%	0	2.4	--	--	Half-Life less than 3 years
Ruthenium-106	RAD	1/23/1992	12/8/2008	438	55	12.56%	-170	102	0	104	Half-Life less than 3 years
Strontium-89	RAD	3/18/1996	12/4/1996	23	1	4.35%	-17.7	2390	69	69	Half-Life less than 3 years
Thorium-228	RAD	9/18/1992	12/3/2007	56	0	0.00%	-0.16	20	--	--	Background Radiation
Thorium-232	RAD	9/18/1992	12/3/2007	57	1	1.75%	-0.013	50	15	15	Background Radiation
Thorium-234	RAD	6/17/1993	6/26/1993	2	0	0.00%	-57	-16	--	--	No Action Level
Tin-113	RAD	6/17/1993	2/6/1997	2	0	0.00%	10	10	--	--	Half-Life less than 3 years
Tin-125	RAD	6/17/1993	6/17/1993	1	0	0.00%	10	10	--	--	Half-Life less than 3 years
Uranium-233/234	RAD	9/18/1992	3/20/2006	18	16	88.89%	0.093	0.203	0.259	2.11	No Action Level

Table 5-1. Summary of Groundwater Analytes that Meet General Exclusion Criteria for the 100-N Decision Unit

Analyte Name	Analyte Class	Begin Sample Date	End Sample Date	Total Samples	Total Detects	Frequency of Detection	Min Detection Limit	Max Detection Limit	Min Detected Result	Max Detected Result	Basis for Exclusion
Uranium-234	RAD	11/19/1992	1/23/1996	26	25	96.15%	0.418	0.418	0.1	3.53	No Action Level
Uranium-235	RAD	9/18/1992	3/27/2006	88	10	11.36%	-32.3	22.3	0.00272	0.183	No Action Level
Uranium-238	RAD	9/18/1992	3/27/2006	83	40	48.19%	0.069	0.387	0.0629	3.31	No Action Level
Zinc-65	RAD	9/18/1992	3/3/1995	9	0	0.00%	-2.1	30	--	--	Half-Life less than 3 years
Zirconium/Niobium-95	RAD	3/3/1995	3/3/1995	1	0	0.00%	-0.713	-0.713	--	--	Half-Life less than 3 years
Zirconium-95	RAD	6/17/1993	6/26/1993	2	0	0.00%	-1.1	0.17	--	--	Half-Life less than 3 years
1,4-Naphthoquinone	SVOC	1/28/1992	2/17/2009	7	0	0.00%	0	10	--	--	No Action Level
1-Naphthylamine	SVOC	1/28/1992	2/17/2009	7	0	0.00%	1	25.3	--	--	No Action Level
2,6-Dichlorophenol	SVOC	1/23/1992	2/17/2009	187	0	0.00%	0.52	10	--	--	No Action Level
2-Acetylaminofluorene	SVOC	1/28/1992	2/17/2009	7	0	0.00%	1	10	--	--	No Action Level
2-Naphthylamine	SVOC	1/28/1992	2/17/2009	7	0	0.00%	1	15.6	--	--	No Action Level
2-Nitrophenol	SVOC	1/23/1992	2/17/2009	208	1	0.48%	0.6	10	27	27	No Action Level
3+4 Methylphenol (cresol, m+p)	SVOC	11/1/2005	2/17/2009	12	0	0.00%	1	10	--	--	No Action Level
3-Methylcholanthrene	SVOC	1/28/1992	2/17/2009	7	0	0.00%	1	10	--	--	No Action Level
4-Aminobiphenyl	SVOC	1/28/1992	2/17/2009	7	0	0.00%	1	10	--	--	No Action Level
4-Bromophenylphenyl ether	SVOC	1/28/1992	2/17/2009	25	0	0.00%	1	10	--	--	No Action Level
4-Chlorophenylphenyl ether	SVOC	1/28/1992	2/17/2009	25	0	0.00%	1	10	--	--	No Action Level
4-Nitroquinoline-1-oxide	SVOC	1/28/1992	2/17/2009	7	0	0.00%	3	10	--	--	No Action Level
7,12-Dimethylbenz[a]anthracene	SVOC	1/28/1992	2/17/2009	7	0	0.00%	1	10	--	--	No Action Level
alpha,alpha-Dimethylphenethylamine	SVOC	1/28/1992	2/17/2009	7	0	0.00%	7.5	37.8	--	--	No Action Level
Benzothiazole	SVOC	5/10/1993	6/23/1998	7	0	0.00%	1.9	10	--	--	No Action Level
Decane	SVOC	12/4/1992	6/23/1998	7	0	0.00%	2.9	1000	--	--	No Action Level
Dodecane	SVOC	12/4/1992	6/23/1998	7	0	0.00%	2.4	1000	--	--	No Action Level
Ethyl methanesulfonate	SVOC	1/28/1992	2/17/2009	7	0	0.00%	1	10	--	--	No Action Level
Famphur	SVOC	1/28/1992	2/17/2009	7	0	0.00%	1.7	50	--	--	No Action Level
Hexachloropropene	SVOC	1/28/1992	2/17/2009	7	0	0.00%	1.3	10	--	--	No Action Level
Isodrin	SVOC	1/28/1992	2/17/2009	7	0	0.00%	1	10	--	--	No Action Level
Isosafrole	SVOC	1/28/1992	2/17/2009	7	0	0.00%	2	10	--	--	No Action Level
Methapyrilene	SVOC	1/28/1992	2/17/2009	7	0	0.00%	2.5	14	--	--	No Action Level
Methyl methanesulfonate	SVOC	1/28/1992	2/17/2009	7	0	0.00%	1.1	10	--	--	No Action Level
n-Nitrosomorpholine	SVOC	1/28/1992	2/17/2009	7	0	0.00%	0.96	10	--	--	No Action Level
n-Nitrosopiperidine	SVOC	1/28/1992	2/17/2009	7	0	0.00%	1	10	--	--	No Action Level
O,O,O-Triethyl phosphorothioate	SVOC	1/28/1992	2/17/2009	7	0	0.00%	1	10	--	--	No Action Level
O,O-Diethyl O-2-pyrazinyl phosphorothioate	SVOC	1/28/1992	2/17/2009	7	0	0.00%	0.99	10	--	--	No Action Level
p-Dimethylaminoazobenzene	SVOC	1/28/1992	2/17/2009	7	0	0.00%	1	10	--	--	No Action Level
Phenacetin	SVOC	1/28/1992	2/17/2009	7	0	0.00%	0.94	10	--	--	No Action Level
Safrol	SVOC	1/28/1992	2/17/2009	7	0	0.00%	1	10	--	--	No Action Level
Tetrachlorophenol	SVOC	1/23/1992	3/28/1996	183	0	0.00%	0.52	10	--	--	No Action Level
Tetradecane	SVOC	12/4/1992	6/23/1998	7	0	0.00%	2.43	1000	--	--	No Action Level
Total cresols	SVOC	1/23/1992	3/28/1996	183	0	0.00%	1.7	10	--	--	No Action Level
Trichlorophenol	SVOC	1/23/1992	3/28/1996	183	0	0.00%	0.56	5	--	--	No Action Level
Total petroleum hydrocarbons	TPH	3/3/1995	9/10/2002	57	11	19.30%	470	2340	550	98500	No Action Level

Table 5-1. Summary of Groundwater Analytes that Meet General Exclusion Criteria for the 100-N Decision Unit

Analyte Name	Analyte Class	Begin Sample Date	End Sample Date	Total Samples	Total Detects	Frequency of Detection	Min Detection Limit	Max Detection Limit	Min Detected Result	Max Detected Result	Basis for Exclusion
2-Picoline	VOC	5/10/1993	2/17/2009	4	0	0.00%	1	5.83	--	--	No Action Level
2-Propanol	VOC	12/22/1994	3/13/1995	9	0	0.00%	500	500	--	--	No Action Level
Ethanol	VOC	3/17/1999	3/17/1999	1	0	0.00%	380	380	--	--	No Action Level
Ethyl cyanide	VOC	5/10/1993	2/17/2009	19	0	0.00%	0.88	5	--	--	No Action Level
Iodomethane	VOC	5/10/1993	2/17/2009	4	0	0.00%	0.13	0.51	--	--	No Action Level
Tetrahydrofuran	VOC	12/4/1992	2/17/2009	29	0	0.00%	0.45	10	--	--	No Action Level
trans-1,4-Dichloro-2-butene	VOC	5/10/1993	2/17/2009	4	0	0.00%	0.43	2.2	--	--	No Action Level
Alkalinity	WATER QUALITY	1/28/1992	2/18/2009	555	553	99.64%	1000	2800	3200	754000	Water Quality
Ammonia	WATER QUALITY	9/18/1992	6/26/1993	8	0	0.00%	50	100	--	--	No Action Level
Bromide	WATER QUALITY	1/23/1992	9/25/2008	485	66	13.61%	11	5000	15	1010	No Action Level
Chemical Oxygen Demand	WATER QUALITY	9/18/1992	8/16/1994	14	5	35.71%	3000	30000	2600	12300	Water Quality
Coliform Bacteria	WATER QUALITY	1/23/1992	1/5/1995	148	6	4.05%	1	1	1	200	Water Quality
Dissolved oxygen	WATER QUALITY	8/1/1995	3/24/2009	492	492	100.00%	--	--	240	741000	Water Quality
Oxidation Reduction Potential	WATER QUALITY	3/6/1997	11/13/2006	73	73	100.00%	--	--	-260.1	450	Water Quality
pH Measurement	WATER QUALITY	1/23/1992	3/24/2009	1575	1575	100.00%	--	--	5.28	9.18	Water Quality
Specific Conductance	WATER QUALITY	1/23/1992	3/24/2009	1581	1581	100.00%	--	--	1.464	1890	Water Quality
Temperature	WATER QUALITY	1/23/1992	3/24/2009	1550	1550	100.00%	--	--	7.5	28.1	Water Quality
Total dissolved solids	WATER QUALITY	9/18/1992	3/27/1996	62	62	100.00%	--	--	160000	930000	Water Quality
Total halogens (all)	WATER QUALITY	10/31/1996	10/31/1996	1	0	0.00%	2.65	2.65	--	--	Water Quality
Total Inorganic Carbon	WATER QUALITY	5/18/1994	5/19/1994	2	2	100.00%	--	--	24300	24500	Water Quality
Total organic carbon	WATER QUALITY	1/23/1992	2/18/2009	628	432	68.79%	140	1000	140	8300	Water Quality
Total organic halides	WATER QUALITY	1/23/1992	2/18/2009	610	455	74.59%	2.2	10	2.4	290	Water Quality
Turbidity	WATER QUALITY	1/23/1992	3/24/2009	1470	1468	99.86%	0.1	0.1	0.01	1000	Water Quality
Ammonium ion	WET CHEM	1/23/1992	9/1/1993	100	51	51.00%	38.5	100	40	700	No Action Level
Monopotassium phosphate	WET CHEM	3/3/1995	3/3/1995	1	1	100.00%	--	--	37	37	No Action Level
Nitrogen in Nitrite and Nitrate	WET CHEM	9/18/1992	3/20/2006	19	19	100.00%	--	--	1600	20700	No Action Level
Phosphate	WET CHEM	1/23/1992	12/8/2008	581	35	6.02%	10	2500	18	910	No Action Level
Total carbon	WET CHEM	8/10/1993	3/13/1995	30	30	100.00%	--	--	13000	52000	No Action Level

Table 5-2. Summary of Groundwater Analytes That Were Not Detected for the 100-N Decision Unit

Analyte Name	Analyte Class	Begin Sample Date	End Sample Date	Total Samples	Total Detects	Frequency of Detection	Min Detection Limit	Max Detection Limit	Action Level	Units	Action Level Basis	Level of Exceedance
2,3,7,8-Tetrachlorodibenzo-p-dioxin	Dioxin/Furan	5/10/1993	5/10/1993	1	0	0.00%	0.001	0.001	5.00E-09	ug/L	Human Health Water + Organism	2.00E+05
2,4,5-T(2,4,5-Trichlorophenoxyacetic acid)	HERB	1/28/1992	6/13/1994	23	0	0.00%	0.018	2	1.60E+02	ug/L	WAC 173-340-720 (4)	1.13E-04
2,4,5-TP(2-(2,4,5-Trichlorophenoxy)propionic acid)Silvex	HERB	1/28/1992	6/13/1994	23	0	0.00%	0.015	2	1.00E+01	ug/L	Human Health Water + Organism	1.50E-03
2,4-D(2,4-Dichlorophenoxyacetic acid)	HERB	1/28/1992	6/13/1994	23	0	0.00%	0.052	10	7.00E+01	ug/L	Federal MCL	7.43E-04
Aroclor-1016	PCB	9/18/1992	3/20/2006	25	0	0.00%	0.059	1	6.40E-05	ug/L	Human Health Water + Organism	9.22E+02
Aroclor-1221	PCB	9/18/1992	3/20/2006	25	0	0.00%	0.06	2	6.40E-05	ug/L	Human Health Water + Organism	9.38E+02
Aroclor-1232	PCB	9/18/1992	3/20/2006	25	0	0.00%	0.094	1	6.40E-05	ug/L	Human Health Water + Organism	1.47E+03
Aroclor-1242	PCB	9/18/1992	3/20/2006	25	0	0.00%	0.11	1	6.40E-05	ug/L	Human Health Water + Organism	1.72E+03
Aroclor-1248	PCB	9/18/1992	3/20/2006	25	0	0.00%	0.04	1	6.40E-05	ug/L	Human Health Water + Organism	6.25E+02
Aroclor-1254	PCB	9/18/1992	3/20/2006	25	0	0.00%	0.092	1	6.40E-05	ug/L	Human Health Water + Organism	1.44E+03
Aroclor-1260	PCB	9/18/1992	3/20/2006	25	0	0.00%	0.079	1	6.40E-05	ug/L	Human Health Water + Organism	1.23E+03
4,4'-DDE (Dichlorodiphenyldichloroethylene)	PEST	1/28/1992	3/20/2006	48	0	0.00%	0.001	0.1	2.20E-04	ug/L	Human Health Water + Organism	4.55E+00
Alpha-Chlordane	PEST	9/18/1992	3/20/2006	18	0	0.00%	0.04	0.051	8.00E-04	ug/L	Human Health Water + Organism	5.00E+01
beta-1,2,3,4,5,6-Hexachlorocyclohexane (beta-BHC)	PEST	1/28/1992	3/20/2006	48	0	0.00%	0.001	0.051	9.10E-03	ug/L	Human Health Water + Organism	1.10E-01
Chlordane	PEST	1/28/1992	8/16/1994	30	0	0.00%	0.006	0.1	8.00E-04	ug/L	Human Health Water + Organism	7.50E+00
Dinoseb(2-secButyl-4,6-dinitrophenol)	PEST	1/23/1992	2/17/2009	187	0	0.00%	0.24	5	7.00E+00	ug/L	Federal MCL	3.43E-02
Endosulfan I	PEST	1/28/1992	3/20/2006	48	0	0.00%	0.002	0.1	5.60E-02	ug/L	Freshwater CCC	3.57E-02
Endosulfan II	PEST	1/28/1992	3/20/2006	48	0	0.00%	0.001	0.1	5.60E-02	ug/L	Freshwater CCC	1.79E-02
Endrin aldehyde	PEST	1/28/1992	3/20/2006	48	0	0.00%	0.004	0.2	2.90E-01	ug/L	Human Health Water + Organism	1.38E-02
Gamma-BHC (Lindane)	PEST	1/28/1992	3/20/2006	48	0	0.00%	0.002	0.051	3.84E-02	ug/L	WAC 173-340-730 (3)	5.21E-02
Methyl parathion	PEST	5/10/1993	2/17/2009	4	0	0.00%	0.24	1	4.00E+00	ug/L	WAC 173-340-720 (4)	6.00E-02
Phorate	PEST	5/10/1993	2/17/2009	4	0	0.00%	0.033	2.9	1.60E+00	ug/L	WAC 173-340-720 (4)	2.06E-02
Toxaphene	PEST	1/28/1992	3/20/2006	48	0	0.00%	0.4	5	2.00E-04	ug/L	Freshwater CCC	2.00E+03
Europium-152	RAD	9/18/1992	12/8/2008	357	0	0.00%	-72.6	30	2.00E+02	pCi/L	Federal MCL	-3.63E-01
Plutonium-238	RAD	9/18/1992	8/16/1994	16	0	0.00%	-0.016	0.033	1.50E+01	pCi/L	Federal MCL	-1.07E-03
Plutonium-239	RAD	6/17/1993	6/26/1993	2	0	0.00%	0.0047	0.0048	1.50E+01	ug/L	Federal MCL	3.13E-04
Thorium-230	RAD	11/1/2005	3/20/2006	11	0	0.00%	-0.1	0.1	1.50E+01	pCi/L	Federal MCL	-6.67E-03
1,2,4,5-Tetrachlorobenzene	SVOC	1/28/1992	2/17/2009	7	0	0.00%	1	10	9.70E-01	ug/L	Human Health Water + Organism	1.03E+00
1,2,4-Trichlorobenzene	SVOC	1/28/1992	2/17/2009	25	0	0.00%	1	10	3.50E+01	ug/L	Human Health Water + Organism	2.86E-02

Table 5-2. Summary of Groundwater Analytes That Were Not Detected for the 100-N Decision Unit

Analyte Name	Analyte Class	Begin Sample Date	End Sample Date	Total Samples	Total Detects	Frequency of Detection	Min Detection Limit	Max Detection Limit	Action Level	Units	Action Level Basis	Level of Exceedance
2,3,4,6-Tetrachlorophenol	SVOC	1/28/1992	2/17/2009	7	0	0.00%	1	10	4.80E+02	ug/L	WAC 173-340-720 (4)	2.08E-03
2,4,5-Trichlorophenol	SVOC	1/28/1992	2/17/2009	25	0	0.00%	2	26	8.00E+02	ug/L	WAC 173-340-720 (4)	2.50E-03
2,4,6-Trichlorophenol	SVOC	1/23/1992	2/17/2009	205	0	0.00%	0.8	10	1.40E+00	ug/L	Human Health Water + Organism	5.71E-01
2,4-Dinitrophenol	SVOC	1/23/1992	2/17/2009	205	0	0.00%	0.96	150	3.20E+01	ug/L	WAC 173-340-720 (4)	3.00E-02
2,4-Dinitrotoluene	SVOC	1/28/1992	2/17/2009	25	0	0.00%	1	10	1.10E-01	ug/L	Human Health Water + Organism	9.09E+00
2,6-Dinitrotoluene	SVOC	1/28/1992	2/17/2009	25	0	0.00%	1	10	1.60E+01	ug/L	WAC 173-340-720 (4)	6.25E-02
2-Chloronaphthalene	SVOC	1/28/1992	2/17/2009	25	0	0.00%	1	10	1.00E+03	ug/L	Human Health Water + Organism	1.00E-03
2-Chlorophenol	SVOC	1/23/1992	2/17/2009	205	0	0.00%	0.6	10	4.00E+01	ug/L	WAC 173-340-720 (4)	1.50E-02
2-Methylphenol (cresol, o-)	SVOC	1/28/1992	2/17/2009	32	0	0.00%	0.85	10	4.00E+02	ug/L	WAC 173-340-720 (4)	2.13E-03
2-Nitroaniline	SVOC	1/28/1992	2/17/2009	25	0	0.00%	2	50	2.40E+01	ug/L	WAC 173-340-720 (4)	8.33E-02
3,3'-Dichlorobenzidine	SVOC	1/28/1992	2/17/2009	25	0	0.00%	1	33.8	2.10E-02	ug/L	Human Health Water + Organism	4.76E+01
3,3'-Dimethylbenzidine	SVOC	1/28/1992	2/17/2009	7	0	0.00%	2.6	10.4	9.51E-03	ug/L	WAC 173-340-720 (4)	2.73E+02
3-Methylphenol (cresol, m-)	SVOC	1/28/1992	8/16/1994	11	0	0.00%	1.44	10	4.00E+02	ug/L	WAC 173-340-720 (4)	3.60E-03
3-Nitroaniline	SVOC	1/28/1992	2/17/2009	25	0	0.00%	1	50	2.08E+00	ug/L	WAC 173-340-720 (4)	4.81E-01
4,6-Dinitro-2-methylphenol	SVOC	1/23/1992	2/17/2009	205	0	0.00%	0.84	200	1.60E+00	ug/L	WAC 173-340-720 (4)	5.25E-01
4-Chloroaniline	SVOC	1/28/1992	2/17/2009	25	0	0.00%	1	20	6.40E+01	ug/L	WAC 173-340-720 (4)	1.56E-02
4-Methylphenol (cresol, p-)	SVOC	1/28/1992	2/17/2009	21	0	0.00%	0.74	10	4.00E+01	ug/L	WAC 173-340-720 (4)	1.85E-02
4-Nitroaniline	SVOC	1/28/1992	2/17/2009	25	0	0.00%	1	50	2.08E+00	ug/L	WAC 173-340-720 (4)	4.81E-01
4-Nitrophenol	SVOC	1/23/1992	2/17/2009	205	0	0.00%	0.49	50	1.28E+02	ug/L	WAC 173-340-720 (4)	3.83E-03
5-Nitro-o-toluidine	SVOC	1/28/1992	2/17/2009	7	0	0.00%	1	10	2.65E+00	ug/L	WAC 173-340-720 (4)	3.77E-01
Acenaphthene	SVOC	1/28/1992	2/17/2009	25	0	0.00%	1	10	6.43E+02	ug/L	WAC 173-340-730 (3)	1.56E-03
Acenaphthylene	SVOC	1/28/1992	2/17/2009	25	0	0.00%	1	10	6.43E+02	ug/L	WAC 173-340-730 (3)	1.56E-03
Acetophenone	SVOC	1/28/1992	2/17/2009	7	0	0.00%	1	10	1.60E+03	ug/L	WAC 173-340-720 (4)	6.25E-04
Aniline	SVOC	1/28/1992	2/17/2009	7	0	0.00%	1	10	7.68E+00	ug/L	WAC 173-340-720 (4)	1.30E-01
Anthracene	SVOC	1/28/1992	2/17/2009	25	0	0.00%	1	10	2.40E+03	ug/L	WAC 173-340-720 (4)	4.17E-04
Aramite	SVOC	1/28/1992	2/17/2009	7	0	0.00%	1	20	3.50E+00	ug/L	WAC 173-340-720 (4)	2.86E-01
Azobenzene	SVOC	1/8/2008	2/17/2009	2	0	0.00%	1	1	7.95E-01	ug/L	WAC 173-340-720 (4)	1.26E+00
Benzo(a)anthracene	SVOC	1/28/1992	2/17/2009	25	0	0.00%	1	10	3.80E-03	ug/L	Human Health Water + Organism	2.63E+02
Benzo(a)pyrene	SVOC	1/28/1992	2/17/2009	25	0	0.00%	1	10	3.80E-03	ug/L	Human Health Water + Organism	2.63E+02
Benzo(b)fluoranthene	SVOC	1/28/1992	2/17/2009	25	0	0.00%	1	10	3.80E-03	ug/L	Human Health Water + Organism	2.63E+02
Benzo(ghi)perylene	SVOC	1/28/1992	2/17/2009	25	0	0.00%	1	10	4.80E+02	ug/L	WAC 173-340-720 (4)	2.08E-03
Benzo(k)fluoranthene	SVOC	1/28/1992	2/17/2009	25	0	0.00%	1	10	3.80E-03	ug/L	Human Health Water + Organism	2.63E+02
Benzyl alcohol	SVOC	1/28/1992	2/17/2009	7	0	0.00%	1	20	4.80E+03	ug/L	WAC 173-340-720 (4)	2.08E-04
Bis(2-chloro-1-methylethyl)ether	SVOC	1/28/1992	2/17/2009	25	0	0.00%	1	10	1.25E+00	ug/L	WAC 173-340-720 (4)	8.00E-01
Bis(2-Chloroethoxy)methane	SVOC	1/28/1992	2/17/2009	25	0	0.00%	1	10	3.98E-02	ug/L	WAC 173-340-720 (4)	2.51E+01
Bis(2-chloroethyl) ether	SVOC	1/28/1992	2/17/2009	25	0	0.00%	1	10	3.00E-02	ug/L	Human Health Water + Organism	3.33E+01

Table 5-2. Summary of Groundwater Analytes That Were Not Detected for the 100-N Decision Unit

Analyte Name	Analyte Class	Begin Sample Date	End Sample Date	Total Samples	Total Detects	Frequency of Detection	Min Detection Limit	Max Detection Limit	Action Level	Units	Action Level Basis	Level of Exceedance
Butylbenzylphthalate	SVOC	1/28/1992	2/17/2009	25	0	0.00%	1	10	1.25E+03	ug/L	WAC 173-340-730 (3)	8.00E-04
Carbazole	SVOC	9/18/1992	3/20/2006	18	0	0.00%	10	10	4.38E+00	ug/L	WAC 173-340-720 (4)	2.28E+00
Chlorobenzilate	SVOC	1/28/1992	2/17/2009	7	0	0.00%	1	10	3.24E-01	ug/L	WAC 173-340-720 (4)	3.09E+00
Chrysene	SVOC	1/28/1992	2/17/2009	25	0	0.00%	1	10	3.80E-03	ug/L	Human Health Water + Organism	2.63E+02
Diallate	SVOC	1/28/1992	2/17/2009	7	0	0.00%	2	10	1.43E+00	ug/L	WAC 173-340-720 (4)	1.40E+00
Dibenz[a,h]anthracene	SVOC	1/28/1992	2/17/2009	25	0	0.00%	1	10	3.80E-03	ug/L	Human Health Water + Organism	2.63E+02
Dibenzofuran	SVOC	1/28/1992	2/17/2009	25	0	0.00%	1	10	3.20E+01	ug/L	WAC 173-340-720 (4)	3.13E-02
Diethylphthalate	SVOC	1/28/1992	2/17/2009	25	0	0.00%	1	10	1.28E+04	ug/L	WAC 173-340-720 (4)	7.81E-05
Dimethoate	SVOC	1/28/1992	2/17/2009	7	0	0.00%	1.1	10	3.20E+00	ug/L	WAC 173-340-720 (4)	3.44E-01
Dimethyl phthalate	SVOC	1/28/1992	2/17/2009	25	0	0.00%	1	10	1.60E+04	ug/L	WAC 173-340-720 (4)	6.25E-05
Di-n-octylphthalate	SVOC	1/28/1992	2/17/2009	25	0	0.00%	1	10	3.20E+02	ug/L	WAC 173-340-720 (4)	3.13E-03
Diphenylamine	SVOC	1/28/1992	6/13/1994	5	0	0.00%	1.7	10	4.00E+02	ug/L	WAC 173-340-720 (4)	4.25E-03
Disulfoton	SVOC	5/10/1993	2/17/2009	4	0	0.00%	0.076	1	6.40E-01	ug/L	WAC 173-340-720 (4)	1.19E-01
Fluoranthene	SVOC	1/28/1992	2/17/2009	25	0	0.00%	1	10	9.02E+01	ug/L	WAC 173-340-730 (3)	1.11E-02
Fluorene	SVOC	1/28/1992	2/17/2009	25	0	0.00%	1	10	6.40E+02	ug/L	WAC 173-340-720 (4)	1.56E-03
Hexachlorobenzene	SVOC	1/28/1992	2/17/2009	25	0	0.00%	1	10	2.80E-04	ug/L	Human Health Water + Organism	3.57E+03
Hexachlorobutadiene	SVOC	1/28/1992	2/17/2009	25	0	0.00%	1	10	4.40E-01	ug/L	Human Health Water + Organism	2.27E+00
Hexachlorocyclopentadiene	SVOC	1/28/1992	2/17/2009	25	0	0.00%	1	10	4.00E+01	ug/L	Human Health Water + Organism	2.50E-02
Hexachloroethane	SVOC	1/28/1992	2/17/2009	25	0	0.00%	1	10	1.40E+00	ug/L	Human Health Water + Organism	7.14E-01
Hexachlorophene	SVOC	1/28/1992	2/17/2009	7	0	0.00%	6.1	19.6	4.80E+00	ug/L	WAC 173-340-720 (4)	1.27E+00
Indeno(1,2,3-cd)pyrene	SVOC	1/28/1992	2/17/2009	25	0	0.00%	1	10	3.80E-03	ug/L	Human Health Water + Organism	2.63E+02
Kepone	SVOC	1/28/1992	2/17/2009	7	0	0.00%	4.1	20	4.20E-03	ug/L	Regional Screening Values	9.76E+02
m-Dinitrobenzene	SVOC	1/28/1992	2/17/2009	7	0	0.00%	1	10	1.60E+00	ug/L	WAC 173-340-720 (4)	6.25E-01
Naphthalene	SVOC	1/28/1992	2/17/2009	32	0	0.00%	1	10	1.60E+02	ug/L	WAC 173-340-720 (4)	6.25E-03
Nitrobenzene	SVOC	1/28/1992	2/17/2009	25	0	0.00%	1	10	1.60E+01	ug/L	WAC 173-340-720 (4)	6.25E-02
Nitrosopyrrolidine	SVOC	1/28/1992	2/17/2009	7	0	0.00%	1	10	1.60E-02	ug/L	Human Health Water + Organism	6.25E+01
n-Nitrosodiethylamine	SVOC	1/28/1992	2/17/2009	7	0	0.00%	1	10	2.92E-04	ug/L	WAC 173-340-720 (4)	3.42E+03
n-Nitrosodimethylamine	SVOC	1/28/1992	2/17/2009	7	0	0.00%	1.2	10	6.90E-04	ug/L	Human Health Water + Organism	1.74E+03
n-Nitrosodi-n-butylamine	SVOC	1/28/1992	2/17/2009	7	0	0.00%	1	10	6.30E-03	ug/L	Human Health Water + Organism	1.59E+02
n-Nitrosodi-n-dipropylamine	SVOC	1/28/1992	2/17/2009	25	0	0.00%	1	10	5.00E-03	ug/L	Human Health Water + Organism	2.00E+02
n-Nitrosodiphenylamine	SVOC	1/28/1992	2/17/2009	25	0	0.00%	1	10	3.30E+00	ug/L	Human Health Water + Organism	3.03E-01
n-Nitrosomethylethylamine	SVOC	1/28/1992	2/17/2009	7	0	0.00%	1	10	3.98E-03	ug/L	WAC 173-340-720 (4)	2.51E+02
o-Toluidine	SVOC	1/28/1992	2/17/2009	7	0	0.00%	1	10	3.65E-01	ug/L	WAC 173-340-720 (4)	2.74E+00
Parathion	SVOC	1/28/1992	2/17/2009	7	0	0.00%	1	10	1.30E-02	ug/L	Freshwater CCC	7.69E+01

Table 5-2. Summary of Groundwater Analytes That Were Not Detected for the 100-N Decision Unit

Analyte Name	Analyte Class	Begin Sample Date	End Sample Date	Total Samples	Total Detects	Frequency of Detection	Min Detection Limit	Max Detection Limit	Action Level	Units	Action Level Basis	Level of Exceedance
Pentachlorobenzene	SVOC	1/28/1992	2/17/2009	7	0	0.00%	1	10	1.40E+00	ug/L	Human Health Water + Organism	7.14E-01
Pentachloronitrobenzene (PCNB)	SVOC	1/28/1992	2/17/2009	7	0	0.00%	1.1	10	3.37E-01	ug/L	WAC 173-340-720 (4)	3.26E+00
Pentachlorophenol	SVOC	1/23/1992	2/17/2009	208	0	0.00%	0.48	100	2.70E-01	ug/L	Human Health Water + Organism	1.78E+00
Phenanthrene	SVOC	1/28/1992	2/17/2009	25	0	0.00%	1	10	2.40E+03	ug/L	WAC 173-340-720 (4)	4.17E-04
p-Phenylenediamine	SVOC	1/28/1992	2/17/2009	7	0	0.00%	1	10	9.60E+01	ug/L	Regional Screening Values	1.04E-02
Pronamide	SVOC	1/28/1992	2/17/2009	7	0	0.00%	1	10	1.20E+03	ug/L	WAC 173-340-720 (4)	8.33E-04
Pyrene	SVOC	1/28/1992	2/17/2009	25	0	0.00%	1	10	4.80E+02	ug/L	WAC 173-340-720 (4)	2.08E-03
sym-Trinitrobenzene	SVOC	1/28/1992	2/17/2009	7	0	0.00%	1.4	10	4.29E+04	ug/L	WAC 173-340-720 (4)	3.26E-05
Tetraethyl dithiopyrophosphate (Sulfotepp)	SVOC	1/28/1992	2/17/2009	7	0	0.00%	1	10	8.00E+00	ug/L	WAC 173-340-720 (4)	1.25E-01
Total petroleum hydrocarbons - kerosene range	SVOC	1/28/1992	12/8/2008	25	0	0.00%	4.03	71000	5.00E+02	ug/L	WAC 173-340-720 (3)	8.06E-03
Tributyl phosphate	SVOC	1/28/1992	2/17/2009	14	0	0.00%	1.1	50	1.62E+01	ug/L	WAC 173-340-720 (4)	6.79E-02
Tris-2-chloroethyl phosphate	SVOC	5/10/1993	6/23/1998	7	0	0.00%	2.2	10	4.80E+00	ug/L	Regional Screening Values	4.58E-01
1,1,1,2-Tetrachloroethane	VOC	5/10/1993	2/17/2009	4	0	0.00%	0.1	0.31	1.68E+00	ug/L	WAC 173-340-720 (4)	5.95E-02
1,1,1-Trichloroethane	VOC	9/18/1992	2/17/2009	79	0	0.00%	0.036	10	2.00E+02	ug/L	Federal MCL	1.80E-04
1,1,2,2-Tetrachloroethane	VOC	9/18/1992	2/17/2009	12	0	0.00%	0.14	10	1.70E-01	ug/L	Human Health Water + Organism	8.24E-01
1,1,2-Trichloroethane	VOC	9/18/1992	2/17/2009	66	0	0.00%	0.043	10	5.90E-01	ug/L	Human Health Water + Organism	7.29E-02
1,1-Dichloroethane	VOC	9/18/1992	2/17/2009	79	0	0.00%	0.046	10	5.50E-01	ug/L	Human Health Water + Organism	8.36E-02
1,1-Dichloroethene	VOC	9/18/1992	2/17/2009	15	0	0.00%	0.04	10	7.29E-02	ug/L	WAC 173-340-720 (4)	5.49E-01
1,2,3-Trichloropropane	VOC	5/10/1993	2/17/2009	4	0	0.00%	0.22	1.9	6.25E-03	ug/L	WAC 173-340-720 (4)	3.52E+01
1,2-Dibromo-3-chloropropane	VOC	5/10/1993	2/17/2009	4	0	0.00%	0.48	3.9	3.13E-02	ug/L	WAC 173-340-720 (4)	1.53E+01
1,2-Dibromoethane	VOC	5/10/1993	2/17/2009	4	0	0.00%	0.13	0.15	4.38E-02	ug/L	WAC 173-340-720 (4)	2.97E+00
1,2-Dichlorobenzene	VOC	1/28/1992	2/17/2009	25	0	0.00%	1	10	4.20E+02	ug/L	Human Health Water + Organism	2.38E-03
1,2-Dichloroethane	VOC	9/18/1992	2/17/2009	79	0	0.00%	0.029	10	3.80E-01	ug/L	Human Health Water + Organism	7.63E-02
1,2-Dichloroethene (Total)	VOC	9/18/1992	2/17/2009	19	0	0.00%	0.1	10	7.20E+01	ug/L	WAC 173-340-720 (4)	1.39E-03
1,2-Dichloropropane	VOC	9/18/1992	2/17/2009	12	0	0.00%	0.077	10	5.00E-01	ug/L	Human Health Water + Organism	1.54E-01
1,3-Dichlorobenzene	VOC	1/28/1992	2/17/2009	25	0	0.00%	1	10	2.40E+02	ug/L	WAC 173-340-720 (4)	4.17E-03
1,4-Dioxane	VOC	5/10/1993	2/17/2009	5	0	0.00%	2.6	88	3.98E+00	ug/L	WAC 173-340-720 (4)	6.53E-01
1-Butanol	VOC	12/4/1992	2/17/2009	21	0	0.00%	1	100	8.00E+02	ug/L	WAC 173-340-720 (4)	1.25E-03
2-Butanone	VOC	9/18/1992	2/17/2009	38	0	0.00%	0.33	100	4.80E+03	ug/L	WAC 173-340-720 (4)	6.88E-05
2-Butoxyethanol	VOC	3/17/1999	3/17/1999	1	0	0.00%	5000	5000	4.00E+03	ug/L	WAC 173-340-720 (4)	1.25E+00
2-Hexanone	VOC	9/18/1992	2/17/2009	12	0	0.00%	0.08	10	6.40E+02	ug/L	WAC 173-340-720 (4)	1.25E-04
2-Pentanone, 4-Methyl	VOC	9/18/1992	2/17/2009	38	0	0.00%	0.1	50	6.40E+02	ug/L	WAC 173-340-720 (4)	1.56E-04
Acetonitrile	VOC	5/10/1993	2/17/2009	4	0	0.00%	1.5	19.4	1.30E+02	ug/L	Regional Screening Values	1.15E-02
Acrolein	VOC	5/10/1993	2/17/2009	4	0	0.00%	0.44	9.72	4.00E+00	ug/L	WAC 173-340-720 (4)	1.10E-01
Acrylonitrile	VOC	5/10/1993	2/17/2009	3	0	0.00%	1.1	4.28	5.10E-02	ug/L	Human Health Water + Organism	2.16E+01
Allyl chloride	VOC	5/10/1993	2/17/2009	4	0	0.00%	0.047	0.84	8.00E+02	ug/L	WAC 173-340-720 (4)	5.88E-05

Table 5-2. Summary of Groundwater Analytes That Were Not Detected for the 100-N Decision Unit

Analyte Name	Analyte Class	Begin Sample Date	End Sample Date	Total Samples	Total Detects	Frequency of Detection	Min Detection Limit	Max Detection Limit	Action Level	Units	Action Level Basis	Level of Exceedance
Bromoform	VOC	9/18/1992	2/17/2009	21	0	0.00%	0.12	10	4.30E+00	ug/L	Human Health Water + Organism	2.79E-02
Bromomethane	VOC	9/18/1992	2/17/2009	12	0	0.00%	0.085	10	1.12E+01	ug/L	WAC 173-340-720 (4)	7.59E-03
Carbon disulfide	VOC	9/18/1992	2/17/2009	27	0	0.00%	0.029	10	8.00E+02	ug/L	WAC 173-340-720 (4)	3.63E-05
Chlorobenzene	VOC	9/18/1992	2/17/2009	13	0	0.00%	0.1	10	1.30E+02	ug/L	Human Health Water + Organism	7.69E-04
Chloroethane	VOC	9/18/1992	2/17/2009	12	0	0.00%	0.085	10	2.10E+04	ug/L	Regional Screening Values	4.05E-06
Chloroprene	VOC	5/10/1993	2/17/2009	4	0	0.00%	0.085	0.77	3.20E+02	ug/L	WAC 173-340-720 (4)	2.66E-04
cis-1,2-Dichloroethylene	VOC	2/11/1993	2/17/2009	62	0	0.00%	0.045	1	7.00E+01	ug/L	Federal MCL	6.43E-04
cis-1,3-Dichloropropene	VOC	9/18/1992	2/17/2009	12	0	0.00%	0.05	10	2.43E-01	ug/L	WAC 173-340-720 (4)	2.06E-01
Dibromochloromethane	VOC	9/18/1992	2/17/2009	21	0	0.00%	0.11	10	4.00E-01	ug/L	Human Health Water + Organism	2.75E-01
Dibromomethane	VOC	5/10/1993	2/17/2009	4	0	0.00%	0.12	0.36	8.00E+01	ug/L	WAC 173-340-720 (4)	1.50E-03
Dichlorodifluoromethane	VOC	5/10/1993	2/17/2009	4	0	0.00%	0.045	1	1.60E+03	ug/L	WAC 173-340-720 (4)	2.81E-05
Diethyl ether	VOC	3/17/1999	3/17/1999	1	0	0.00%	0.5	0.5	1.60E+03	ug/L	WAC 173-340-720 (4)	3.13E-04
Ethyl acetate	VOC	3/17/1999	3/17/1999	1	0	0.00%	5000	5000	7.20E+04	ug/L	WAC 173-340-720 (4)	6.94E-02
Ethyl methacrylate	VOC	5/10/1993	2/17/2009	4	0	0.00%	0.18	0.66	7.20E+02	ug/L	WAC 173-340-720 (4)	2.50E-04
Ethylene glycol	VOC	3/17/1999	3/17/1999	1	0	0.00%	5000	5000	1.60E+04	ug/L	WAC 173-340-720 (4)	3.13E-01
Isobutyl alcohol	VOC	5/10/1993	2/17/2009	4	0	0.00%	6.1	58	2.40E+03	ug/L	WAC 173-340-720 (4)	2.54E-03
Isophorone	VOC	1/28/1992	2/17/2009	25	0	0.00%	1	10	3.50E+01	ug/L	Human Health Water + Organism	2.86E-02
Methacrylonitrile	VOC	5/10/1993	2/17/2009	4	0	0.00%	0.3	1.8	8.00E-01	ug/L	WAC 173-340-720 (4)	3.75E-01
Methanol	VOC	3/17/1999	3/17/1999	1	0	0.00%	930	930	4.00E+03	ug/L	WAC 173-340-720 (4)	2.33E-01
Methyl methacrylate	VOC	5/10/1993	2/17/2009	4	0	0.00%	0.18	0.84	1.12E+04	ug/L	WAC 173-340-720 (4)	1.61E-05
Pentachloroethane	VOC	5/10/1993	2/17/2009	4	0	0.00%	0.51	2.4	7.50E-01	ug/L	Regional Screening Values	6.80E-01
Pyridine	VOC	5/10/1993	2/17/2009	4	0	0.00%	1.4	5.7	8.00E+00	ug/L	WAC 173-340-720 (4)	1.75E-01
Styrene	VOC	9/18/1992	2/17/2009	12	0	0.00%	0.079	10	1.46E+00	ug/L	WAC 173-340-720 (4)	5.41E-02
trans-1,2-Dichloroethylene	VOC	2/11/1993	2/17/2009	62	0	0.00%	0.067	1	1.00E+02	ug/L	Federal MCL	6.70E-04
trans-1,3-Dichloropropene	VOC	9/18/1992	2/17/2009	12	0	0.00%	0.08	10	2.43E-01	ug/L	WAC 173-340-720 (4)	3.29E-01
Trichloromonofluoromethane	VOC	5/10/1993	2/17/2009	4	0	0.00%	0.1	1.41	2.40E+03	ug/L	WAC 173-340-720 (4)	4.17E-05
Vinyl acetate	VOC	5/10/1993	2/17/2009	4	0	0.00%	0.22	2.7	8.00E+03	ug/L	WAC 173-340-720 (4)	2.75E-05
Vinyl chloride	VOC	9/18/1992	2/17/2009	66	0	0.00%	0.044	10	2.92E-02	ug/L	Human Health Water + Organism	1.51E+00

Table 5-3. Summary of Groundwater Analytes That Do Not Exceed an Action Level for the 100-N Decision Unit

Analyte Name	Analyte Class	Begin Sample Date	End Sample Date	Total Samples	Total Detects	Frequency of Detection	Min Detection Limit	Max Detection Limit	Min Detected Result	Max Detected Result	Action Level	Units	Action Level Basis	Level of Exceedance	COPC?	Basis For Exclusion
Barium	METAL	1/23/1992	2/18/2009	435	410	94.25%	20	20	9.8	700	1.00E+03	ug/L	Human Health Water + Organism	7.00E-01	No	Max concentration and MDLs < action level
Boron	METAL	11/1/2005	3/20/2006	11	11	100.00%	--	--	14.4	47.1	3.20E+03	ug/L	WAC 173-340-720 (4)	1.47E-02	No	Max concentration and MDLs < action level
Lithium	METAL	11/1/2005	3/20/2006	11	11	100.00%	--	--	0.62	13.8	3.20E+01	ug/L	WAC 173-340-720 (4)	4.31E-01	No	Max concentration and MDLs < action level
Molybdenum	METAL	11/1/2005	3/20/2006	11	3	27.27%	1.3	2.9	4.9	28	8.00E+01	ug/L	WAC 173-340-720 (4)	3.50E-01	No	Max concentration and MDLs < action level
Silver	METAL	1/23/1992	2/18/2009	435	28	6.44%	0.6	29.8	2.4	24.5	8.00E+01	ug/L	WAC 173-340-720 (4)	3.06E-01	No	Max concentration and MDLs < action level
Strontium	METAL	8/30/1995	2/18/2009	95	95	100.00%	--	--	60.7	1030	9.60E+03	ug/L	WAC 173-340-720 (4)	1.07E-01	No	Max concentration and MDLs < action level
Tin	METAL	1/23/1992	3/20/2006	276	17	6.16%	2.6	100	10.7	110	9.60E+03	ug/L	WAC 173-340-720 (4)	1.15E-02	No	Max concentration and MDLs < action level
Titanium	METAL	3/20/2006	3/20/2006	1	1	100.00%	--	--	171	171	6.40E+04	ug/L	WAC 173-340-720 (4)	2.67E-03	No	Max concentration and MDLs < action level
Uranium	METAL	2/20/1992	3/20/2006	26	16	61.54%	8.8	20.6	0.236	29.4	3.00E+01	ug/L	Federal MCL	9.80E-01	No	Max concentration and MDLs < action level
Endosulfan sulfate	PEST	1/28/1992	3/20/2006	48	2	4.17%	0.002	0.5	0.032	0.054	6.20E+01	ug/L	Human Health Water + Organism	8.71E-04	No	Max concentration and MDLs < action level
Americium-241	RAD	9/18/1992	3/27/2006	65	1	1.54%	-0.014	0.026	0.011	0.011	1.50E+01	pCi/L	Federal MCL	7.33E-04	No	Max concentration and MDLs < action level
Carbon-14	RAD	9/18/1992	12/8/2008	41	16	39.02%	-62	20.8	8.64	422	2.00E+03	pCi/L	Federal MCL	2.11E-01	No	Max concentration and MDLs < action level
Cesium-137	RAD	1/23/1992	12/8/2008	593	48	8.09%	-40.3	10	0	16	2.00E+02	pCi/L	Federal MCL	8.00E-02	No	Max concentration and MDLs < action level
Europium-154	RAD	9/18/1992	12/8/2008	379	3	0.79%	-25.3	24.2	1.12	3.06	6.00E+01	pCi/L	Federal MCL	5.10E-02	No	Max concentration and MDLs < action level
Europium-155	RAD	9/18/1992	12/8/2008	375	2	0.53%	-59	92.2	0.786	26.9	6.00E+02	pCi/L	Federal MCL	4.48E-02	No	Max concentration and MDLs < action level
Iodine-129	RAD	2/28/1994	3/3/1998	10	3	30.00%	-0.472	-0.0584	0.15	0.236	1.00E+00	pCi/L	Federal MCL	2.36E-01	No	Max concentration and MDLs < action level
Plutonium-239/240	RAD	9/18/1992	8/16/1994	16	1	6.25%	-0.003	0.026	0.0709	0.0709	1.50E+01	pCi/L	Federal MCL	4.73E-03	No	Max concentration and MDLs < action level
Radium-228	RAD	9/9/1999	12/3/2007	49	1	2.04%	-4.36	0.585	2.33	2.33	5.00E+00	pCi/L	Federal MCL	4.66E-01	No	Max concentration and MDLs < action level
Technetium-99	RAD	9/18/1992	12/8/2008	39	16	41.03%	-4.9	3.77	0.589	6.75	9.00E+02	pCi/L	Federal MCL	7.50E-03	No	Max concentration and MDLs < action level
1,4-Dichlorobenzene	SVOC	1/28/1992	2/17/2009	79	1	1.27%	0.055	10	1.3	1.3	1.82E+00	ug/L	WAC 173-340-720 (4)	7.14E-01	Yes	Max concentration < action level; vadose zone target analyte
2,4-Dichlorophenol	SVOC	1/23/1992	2/17/2009	208	1	0.48%	0.43	10	34	34	4.80E+01	ug/L	WAC 173-340-720 (4)	7.08E-01	No	Max concentration and MDLs < action level
2,4-Dimethylphenol	SVOC	1/23/1992	2/17/2009	205	3	1.46%	0.62	10	5	16	3.20E+02	ug/L	WAC 173-340-720 (4)	5.00E-02	No	Max concentration and MDLs < action level
2-Methylnaphthalene	SVOC	1/28/1992	2/17/2009	25	1	4.00%	1	10	2	2	3.20E+01	ug/L	WAC 173-340-720 (4)	6.25E-02	No	Max concentration and MDLs < action level
4-Chloro-3-methylphenol	SVOC	1/23/1992	2/17/2009	205	1	0.49%	0.52	20	23	23	8.00E+02	ug/L	WAC 173-340-720 (4)	2.88E-02	No	Max concentration and MDLs < action level
Di-n-butylphthalate	SVOC	1/28/1992	2/17/2009	25	3	12.00%	1	10	0.5	1.282	1.60E+03	ug/L	WAC 173-340-720 (4)	8.01E-04	No	Max concentration and MDLs < action level
Phenol	SVOC	1/23/1992	2/17/2009	208	4	1.92%	0.31	10	0.8	4	4.80E+03	ug/L	WAC 173-340-720 (4)	8.33E-04	No	Max concentration and MDLs < action level

Table 5-3. Summary of Groundwater Analytes That Do Not Exceed an Action Level for the 100-N Decision Unit

Analyte Name	Analyte Class	Begin Sample Date	End Sample Date	Total Samples	Total Detects	Frequency of Detection	Min Detection Limit	Max Detection Limit	Min Detected Result	Max Detected Result	Action Level	Units	Action Level Basis	Level of Exceedance	COPC?	Basis For Exclusion
Acetone	VOC	9/18/1992	2/17/2009	38	6	15.79%	0.33	100	0.44	18	7.20E+03	ug/L	WAC 173-340-720 (4)	2.50E-03	No	Max concentration and MDLs < action level
Chloromethane	VOC	9/18/1992	2/17/2009	12	1	8.33%	0.086	10	0.16	0.16	3.37E+00	ug/L	WAC 173-340-720 (4)	4.75E-02	No	Max concentration < action level
Ethylbenzene	VOC	9/18/1992	2/17/2009	67	4	5.97%	0.043	10	0.05	3.9	5.30E+02	ug/L	Human Health Water + Organism	7.36E-03	No	Max concentration and MDLs < action level
Methylene chloride	VOC	9/18/1992	2/17/2009	79	9	11.39%	0.056	10	0.097	2.6	4.60E+00	ug/L	Human Health Water + Organism	5.65E-01	No	Common lab contaminant
Toluene	VOC	9/18/1992	2/17/2009	79	3	3.80%	0.016	10	0.057	0.14	6.40E+02	ug/L	WAC 173-340-720 (4)	2.19E-04	No	Max concentration and MDLs < action level
Xylenes (total)	VOC	9/18/1992	2/17/2009	79	3	3.80%	0.035	10	0.23	3.7	1.60E+03	ug/L	WAC 173-340-720 (4)	2.31E-03	No	Max concentration and MDLs < action level
Chloride	WET CHEM	1/23/1992	2/18/2009	1011	1009	99.80%	35	84	800	148000	2.30E+05	ug/L	Freshwater CCC	6.43E-01	No	Max concentration and MDLs < action level
Cyanide	WET CHEM	9/18/1992	8/16/1994	14	1	7.14%	1.24	20	2	2	5.20E+00	ug/L	Freshwater CCC	3.85E-01	Yes	Most MDLs > action level; and identified as vadose zone target analyte

Table 5-4. Summary of Groundwater Analytes That Exceed an Action Level for the 100-N Decision Unit

Analyte Name	Analyte Class	Begin Sample Date	End Sample Date	Total Samples	Total Detects	Frequency of Detection	Min Detection Limit	Max Detection Limit	Min Detected Result	Max Detected Result	Action Level	Units	Action Level Basis	Level of Exceedance	COPC?	Basis For Inclusion
Aluminum	METAL	9/18/1992	3/20/2006	255	136	53.33%	15	125	22	46000	5.00E+01	ug/L	Federal MCL	9.20E+02	No	Naturally occurring; not identified as a vadose zone target analyte
Antimony	METAL	1/23/1992	2/18/2009	435	28	6.44%	1.7	200	2.5	130	5.60E+00	ug/L	Human Health Water + Organism	2.32E+01	Yes	All concentrations > action level
Arsenic	METAL	1/23/1992	3/20/2006	250	122	48.80%	0.64	24000	0.93	29	1.80E-02	ug/L	Human Health Water + Organism	1.61E+03	Yes	All concentrations > action level
Beryllium	METAL	1/23/1992	2/18/2009	435	29	6.67%	0.1	4	0.18	5	4.00E+00	ug/L	Federal MCL	1.25E+00	No	Anomalous result
Cadmium	METAL	1/23/1992	2/18/2009	435	11	2.53%	0.3	10	0.83	12	2.50E-01	ug/L	Freshwater CCC	4.80E+01	Yes	All concentrations > action level
Chromium	METAL	1/23/1992	2/18/2009	435	315	72.41%	1.6	20	3.1	2500	7.40E+01	ug/L	Freshwater CCC	3.38E+01	Yes	Max concentration > action level
Cobalt	METAL	1/23/1992	2/18/2009	435	33	7.59%	0.7	20	2.7	56	4.80E+00	ug/L	WAC 173-340-720 (4)	1.17E+01	Yes	Max concentration and MDLs > action level
Copper	METAL	1/23/1992	2/18/2009	435	138	31.72%	1.2	30.1	2.1	370	9.00E+00	ug/L	Freshwater CCC	4.11E+01	Yes	Max concentration and MDLs > action level
Hexavalent Chromium	METAL	11/12/1996	3/24/2009	56	44	78.57%	2	2	2	120	1.00E+01	ug/L	WAC 173-201A	1.20E+01	Yes	Max concentration > action level
Iron	METAL	1/23/1992	2/18/2009	435	397	91.26%	5.3	215	9.2	292000	3.00E+02	ug/L	Federal MCL	9.73E+02	No	Naturally occurring; not identified as a vadose zone target analyte
Lead	METAL	1/23/1992	3/20/2006	252	95	37.70%	0.508	24000	0.6	70	2.50E+00	ug/L	Freshwater CCC	2.80E+01	Yes	Max concentration and MDLs > action level
Manganese	METAL	1/23/1992	2/18/2009	435	321	73.79%	0.3	10	0.22	10900	5.00E+01	ug/L	Federal MCL	2.18E+02	Yes	Max concentration > action level
Mercury	METAL	1/23/1992	3/20/2006	207	2	0.97%	0.05	0.2	0.11	0.13	1.20E-02	ug/L	WAC 173-201A	1.08E+01	Yes	All concentrations > action level
Nickel	METAL	1/23/1992	2/18/2009	435	141	32.41%	1	30	1.8	1300	5.20E+01	ug/L	Freshwater CCC	2.50E+01	Yes	Max concentration > action level
Selenium	METAL	1/23/1992	3/20/2006	210	22	10.48%	0.65	24000	1	10.4	5.00E+00	ug/L	Freshwater CCC	2.08E+00	Yes	Max concentration and MDLs > action level
Thallium	METAL	9/18/1992	3/20/2006	95	2	2.11%	0.9	24000	6.6	74.6	2.40E-01	ug/L	Human Health Water + Organism	3.11E+02	Yes	All concentrations > action level
Vanadium	METAL	1/23/1992	2/18/2009	435	217	49.89%	0.9	39.6	1.7	240	1.12E+02	ug/L	WAC 173-340-720 (4)	2.14E+00	Yes	Max concentration > action level
Zinc	METAL	1/23/1992	2/18/2009	435	292	67.13%	3.44	28.9	0.9	4000	1.20E+02	ug/L	Freshwater CCC	3.33E+01	Yes	Max concentration > action level
4,4'-DDD (Dichlorodiphenyldichloroethane)	PEST	1/28/1992	3/20/2006	48	2	4.17%	0.001	0.1	0.23	1.6	3.10E-04	ug/L	Human Health Water + Organism	5.16E+03	Yes	Max concentration and MDLs > action level
4,4'-DDT (Dichlorodiphenyltrichloroethane)	PEST	1/28/1992	3/20/2006	48	2	4.17%	0.001	0.1	0.063	0.083	2.20E-04	ug/L	Human Health Water + Organism	3.77E+02	Yes	Max concentration and MDLs > action level
Aldrin	PEST	1/28/1992	3/20/2006	48	4	8.33%	0.002	0.051	0.07	0.27	4.90E-05	ug/L	Human Health Water + Organism	5.51E+03	Yes	All concentrations > action level
Alpha-BHC	PEST	1/28/1992	3/20/2006	48	2	4.17%	0.003	0.051	0.037	0.052	2.60E-03	ug/L	Human Health Water + Organism	2.00E+01	Yes	All concentrations > action level
Dieldrin	PEST	1/28/1992	3/20/2006	48	1	2.08%	0.002	0.1	0.024	0.024	5.20E-05	ug/L	Human Health Water + Organism	4.62E+02	Yes	All concentrations > action level
Endrin	PEST	1/28/1992	3/20/2006	48	2	4.17%	0.004	0.1	0.12	0.14	2.30E-03	ug/L	WAC 173-201A	6.09E+01	Yes	All concentrations > action level
Heptachlor	PEST	1/28/1992	3/20/2006	48	2	4.17%	0.002	0.051	0.36	0.41	7.90E-05	ug/L	Human Health Water + Organism	5.19E+03	Yes	All concentrations > action level

Table 5-4. Summary of Groundwater Analytes That Exceed an Action Level for the 100-N Decision Unit

Analyte Name	Analyte Class	Begin Sample Date	End Sample Date	Total Samples	Total Detects	Frequency of Detection	Min Detection Limit	Max Detection Limit	Min Detected Result	Max Detected Result	Action Level	Units	Action Level Basis	Level of Exceedance	COPC?	Basis For Inclusion
Heptachlor epoxide	PEST	1/28/1992	3/20/2006	48	2	4.17%	0.001	1	0.037	0.28	3.90E-05	ug/L	Human Health Water + Organism	7.18E+03	Yes	All concentrations > action level
Methoxychlor	PEST	1/28/1992	3/20/2006	48	1	2.08%	0.022	2	0.055	0.055	3.00E-02	ug/L	Freshwater CCC	1.83E+00	Yes	Max concentration and MDLs > action level
trans-Chlordane	PEST	9/18/1992	3/20/2006	18	2	11.11%	0.04	0.051	0.12	0.5	8.00E-04	ug/L	Human Health Water + Organism	6.25E+02	Yes	All concentrations > action level
Cobalt-60	RAD	1/23/1992	12/8/2008	594	110	18.52%	-56.5	20	0.409	732	1.00E+02	pCi/L	Federal MCL	7.32E+00	Yes	Max concentration > action level
Gross alpha	RAD	1/23/1992	12/8/2008	554	232	41.88%	-340	10.7	0.0209	87.4	1.50E+01	pCi/L	Federal MCL	5.83E+00	No	Indicator parameter
Strontium-90	RAD	1/23/1992	12/8/2008	936	645	68.91%	-7.2	1.57	0.00395	26000	8.00E+00	pCi/L	Federal MCL	3.25E+03	Yes	Max concentration > action level
Tritium	RAD	1/23/1992	12/8/2008	789	681	86.31%	-205	259	17.91	104000	2.00E+04	pCi/L	Federal MCL	5.20E+00	Yes	Max concentration > action level
Bis(2-ethylhexyl) phthalate	SVOC	1/28/1992	2/17/2009	30	12	40.00%	0.45	10	0.7	12	1.20E+00	ug/L	Human Health Water + Organism	1.00E+01	No	Common lab contaminant
Total petroleum hydrocarbons - diesel range	TPH	12/1/1992	12/8/2008	139	40	28.78%	33	5000	67	630000000	5.00E+02	ug/L	WAC 173-340-720 (3)	1.26E+06	Yes	Max concentration and MDLs > action level
Total petroleum hydrocarbons - gasoline range	TPH	6/23/1998	10/7/2008	64	17	26.56%	7.9	250	120	4300000	1.00E+03	ug/L	WAC 173-340-720 (3)	4.30E+03	Yes	Max concentration and MDLs > action level
Total petroleum hydrocarbons - motor oil (high boiling)	TPH	6/23/1998	10/7/2008	5	1	20.00%	71	71000	7400	7400	5.00E+02	ug/L	WAC 173-340-720 (3)	1.48E+01	No	Captured under TPH diesel range analytical suite
Benzene	VOC	9/18/1992	2/17/2009	79	1	1.27%	0.013	10	0.95	0.95	7.95E-01	ug/L	WAC 173-340-720 (4)	1.19E+00	Yes	Detected concentrations and most MDLs are greater than the action level
Bromodichloromethane	VOC	9/18/1992	2/17/2009	21	1	4.76%	0.064	10	2.3	2.3	5.50E-01	ug/L	Human Health Water + Organism	4.18E+00	No	Anomalous results; not a vadose zone target analyte
Carbon tetrachloride	VOC	9/18/1992	2/17/2009	79	3	3.80%	0.042	10	0.49	6.5	2.30E-01	ug/L	Human Health Water + Organism	2.83E+01	Yes	Detected concentrations and most MDLs are greater than the action level
Chloroform	VOC	9/18/1992	2/17/2009	79	62	78.48%	0.05	10	0.76	99	5.70E+00	ug/L	Human Health Water + Organism	1.74E+01	Yes	Max concentrations and MDLs > action level
Tetrachloroethene	VOC	9/18/1992	2/17/2009	79	16	20.25%	0.049	10	0.052	4.3	8.10E-02	ug/L	WAC 173-340-720 (4)	5.31E+01	Yes	Max concentration and MDLs > action level
Trichloroethene	VOC	9/18/1992	2/17/2009	79	2	2.53%	0.043	10	0.32	6.8	4.92E-01	ug/L	WAC 173-340-720 (4)	1.38E+01	Yes	Detected concentrations and most MDLs are greater than the action level
Fluoride	WET CHEM	1/23/1992	2/18/2009	1011	845	83.58%	5.1	5000	20	2000	9.60E+02	ug/L	WAC 173-340-720 (4)	2.08E+00	Yes	Max concentration and MDLs > action level
Hydrazine	WET CHEM	1/23/1992	1/5/1995	155	3	1.94%	1.6	30	2.3	10	1.46E-02	ug/L	WAC 173-340-720 (4)	6.85E+02	No	Not known to be persistent in the environment; not a vadose zone target analyte
Nitrate	WET CHEM	1/23/1992	2/18/2009	1003	988	98.50%	8.85	25000	62	410000	1.00E+04	ug/L	Federal MCL	4.10E+01	Yes	Max concentration and MDLs > action level
Nitrite	WET CHEM	1/23/1992	2/18/2009	972	43	4.42%	2	5000	36.1	3610	1.00E+03	ug/L	Federal MCL	3.61E+00	Yes	Max concentration and MDLs > action level
Phosphorus	WET CHEM	11/1/2005	3/20/2006	11	9	81.82%	8.3	9	17.4	93.6	3.20E-01	ug/L	WAC 173-340-720 (4)	2.93E+02	No	Not known to be persistent in the environment; not a vadose zone target analyte
Sulfate	WET CHEM	1/23/1992	2/18/2009	1050	1046	99.62%	21	203000	13.1	870000	2.50E+05	ug/L	Federal MCL	3.48E+00	Yes	Max concentration > action level

Table 5-4. Summary of Groundwater Analytes That Exceed an Action Level for the 100-N Decision Unit

Analyte Name	Analyte Class	Begin Sample Date	End Sample Date	Total Samples	Total Detects	Frequency of Detection	Min Detection Limit	Max Detection Limit	Min Detected Result	Max Detected Result	Action Level	Units	Action Level Basis	Level of Exceedance	COPC?	Basis For Inclusion
Sulfide	WET CHEM	9/18/1992	6/13/1994	15	3	20.00%	100	10000	120	300	2.00E+00	ug/L	Freshwater CCC	1.50E+02	No	Not known to be persistent in the environment; not a vadose zone target analyte

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100-N Target Analyte List Development for Soil

March 2011

Washington Closure Hanford

Prepared for the U.S. Department of Energy, Richland Operations Office
Office of Assistant Manager for River Corridor

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River Corridor
Closure Contract

100-N Target Analyte List Development for Soil

March 2011

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Prepared for the U.S. Department of Energy, Richland Operations Office
Office of Assistant Manager for River Corridor

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1.0 PURPOSE

This report documents the process used to identify source area target analytes in support of the 100-N remedial investigation/feasibility study (RI/FS) addendum to the *Integrated 100 Area Remedial Investigation/Feasibility Study (RI/FS) Work Plan* (DOE/RL-2008-46). A "target analyte" is defined as a constituent suspected of being site-related that is carried into an investigation plan for characterization through sampling and analysis by approved laboratory methods. Target analytes identified for 100 and 300 Area OUs must support RI/FS nature and extent characterization plus final remedial action decisions for source areas. This report also establishes the analyte exclusion criteria applicable for 100-N use and the analytical methods needed to analyze the target analytes.

2.0 APPROACH

The approach for development of vadose zone soil target analytes consists of two steps. The first step is to develop a master list of target analytes. The second step is to develop location specific (e.g., waste site) target analyte lists where additional characterization is proposed.

Step 1 – 100-N Master Target Analyte Identification

A master target analyte list is developed using the following approach:

- Review remediation and characterization information (historic and current) and identify appropriate information sources. Sources include:
  - Focused feasibility studies (FFS), limited field investigation (LFI) reports
  - Interim action records of decision (IARODs)
  - Cleanup verification documents (cleanup verification packages [CVPs], remaining sites verification packages [RSVPs])
  - Technical baseline reports
  - Dangerous waste permit applications
  - Databases containing analytical data resulting from these activities (i.e., characterization, remediation, waste management information)
  - Other pertinent documents.
- Develop a list of initial target analytes using the reference documents from bullet 1.

- Apply the following generally-accepted exclusion criteria that are listed below to the initial set of target analytes to develop the "master" target analyte list.
  - Radionuclides with half-lives less than 3 years (and no significant "daughters")
  - Naturally occurring radionuclides associated with background radiation (for example, K-40, Th-230, Th-232, and Ra-226)
  - Essential nutrients (minerals)
  - Analytes that have no toxicity values (based on the most-current version of the Cleanup Levels and Risk Calculation [CLARC] table).
- Compare the master target analyte list for vadose zone soil with the groundwater COPC list developed for 100-N. Groundwater COPCs *not* found on the master target analyte list are further evaluated to determine if there is a valid basis for their inclusion.
- Identify appropriate analytical methods for each analyte on the master target analyte list. Determine if the detection limits for each target analyte can achieve the remedial action goals for direct exposure, groundwater protection, and Columbia River protection.

At the conclusion of Step 1, the master 100-N target analyte list is established. This list is comprehensive, including all the contaminants that could potentially be identified as "risk drivers" for waste site remediation at 100-N.

Step 2 – Location Specific Target Analyte Identification

Location specific target analytes are identified using the following approach:

- Identify the contaminants of concern for the specific waste sites where characterization is proposed from the applicable interim action ROD (which reflects information from LFI and technical baseline reports). If the characterization location is not at a waste site, evaluate information from waste sites in the vicinity (where available). Include these analytes on the location specific target analyte list.
- Identify the contaminants of concern for the specific waste site locations from the verification documentation (CVPs or RSVPs). If the characterization location is not at a waste site, evaluate information from waste sites in the vicinity (where available). Include these analytes on the location specific target analyte list.
- Evaluate local groundwater monitoring well data (wells located within waste site "zones of influence"). Determine if groundwater COPCs have been analyzed-for in these local wells.
  - If the groundwater COPCs have been analyzed for but not detected, then these analytes are not included on the location specific target analyte list.
  - If the groundwater COPCs have been analyzed for and have been detected, then these analytes are included on the location specific target analyte list.

- If the groundwater COPCs have not been analyzed-for, then an additional evaluation will be performed to determine if there is a data need. If there is a data need, these COPCs are included on the waste-site specific target analyte list.

3.0 ASSUMPTIONS

- Historical resources (e.g., LFI, qualitative risk assessment, and CVP/RSVP documents) contain contaminant lists that are comprehensive with respect to characterizing environmental impacts from 100 and 300 Area Hanford Site operations.
- Older analytical data (e.g., pre-*Comprehensive Environmental Response, Compensation, and Liability Act of 1980* [CERCLA]) reflect laboratory state-of-the-art procedures. Analytical methods have improved, resulting in lower detection limits for many analytes and better data quality assurance/quality control.
- Characterization activities implemented since initiating remediation under the IARODs may provide additional contaminant information that should be considered during pending RI/FS field investigations.
- Post-remediation characterization and cleanup verification data reflect focused lists of analytes that are unique to each waste site and have been evaluated against IAROD cleanup requirements.
- Examining existing data and waste site process information will be useful in developing laboratory analytical needs for RI/FS characterization tasks.
- Universally-accepted exclusion criteria may be applied to the initial target analyte list to develop a "master" list.
- Additional exclusion criteria (e.g., statistical Hanford Site background comparisons, infrequently detected analytes, and analytes not detected at concentrations/activities exceeding required cleanup levels) may be applied during the RI/FS process as more data become available.

4.0 SOFTWARE CONSIDERATIONS

No statistical or algebraic calculations were performed for this activity. The evaluations conducted included analyte comparisons/sorting using Microsoft® Excel®.

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5.0 SOIL TARGET ANALYTE LIST DEVELOPMENT

Step 1 – 100-N Master Target Analyte Identification

1. The documents listed in Table 1 were used to develop the 100-N target analyte list.

Table 1. Documents Used to Develop the 100-N Analyte List. (2 Pages)

Reference	Document Number	Document Type
1. Cleanup Verification Package/Clean Closure Report for the Soil Column of the 120-N-1 and 120-N-2 Dangerous Waste Treatment and Disposal Sites and the 100-N-58 Site	CVP-2001-00021	CVP
2. Cleanup Verification Package/Clean Closure Report for the Soil Column of the 116-N-3 Trench, Crib, and 100-N-63:1 Pipeline	CVP-2002-00002	CVP
3. Cleanup Verification Package for the JA Jones 1 Site	CVP-2001-00019	CVP
4. Cleanup Verification Package/Clean Closure Report for the Soil Column of the 116-N-1 Crib and Trench	CVP-2006-00004	CVP
5. WA7890008967, Attachment 42, 1324-N Surface Impoundment, Dangerous Waste Permit Application Part A Form (August 2005)	WA7890008967, Attachment 42	Dangerous Waste Permit Application
6. WA7890008967, Attachment 41, 1301-N Liquid Waste Disposal Facility, Dangerous Waste Permit Application Part A Form (July 2005)	WA7890008967, Attachment 41	Dangerous Waste Permit Application
7. WA7890008967, Attachment 42, 1324-NA Percolation Pond, Dangerous Waste Permit Application Part A Form (August 2005)	WA7890008967, Attachment 42	Dangerous Waste Permit Application
8. WA7890008967, Attachment 41, 1325-N Liquid Waste Disposal Facility, Dangerous Waste Permit Application Part A Form (August 2005)	WA7890008967, Attachment 41	Dangerous Waste Permit Application
9. Remedial Design Report/Remedial Action Work Plan for the 100-N Area (October 2006)	DOE/RL-2005-93	RDR/RAWP
10. Remedial Design Report/Remedial Action Work Plan for the 100-NR-1 Treatment, Storage, and disposal Units (September 2000)	DOE/RL-2000-16	RDR/RAWP
11. Remedial Design Report/Remedial Action Work Plan for the 100-NR-2 Operable Unit (June 2002)	DOE/RL-2001-27	RDR/RAWP
12. 100-N Area Technical Baseline Report (July 1994)	WHC-SD-EN-TI-251	Technical Baseline Report
13. 100-NR-1 Qualitative Risk Assessment (March 1995)	BHI-00054	QRA
14. 1301-N and 1325-N Liquid Waste disposal Facilities Limited Field Investigation Report (December 1996)	DOE/RL-96-11	Limited Field Investigation

Table 1. Documents Used to Develop the 100-N Analyte List. (2 Pages)

Reference	Document Number	Document Type
15. Explanation of Significant Difference for the 100-NR-1 Operable Unit Treatment, Storage and Disposal Interim Action Record of Decision and 100-NR-I/I00-NR-2 Operable Unit Interim Action Record of Decision, Hanford Site, Benton County, Washington.	EPA/ESD/R10-03/605	Explanation of Significant Difference
16. Interim Remedial Action Record of Decision for the 100-NR-1 Operable Unit of the Hanford 100-N Area, Hanford Site, Benton County, Washington	EPA/541/R00/120	IAROD
17. Interim Action Record of Decision for the 100-NR-1 and 100-NR-2 Operable Units, Hanford Site, Benton County, Washington	EPA/541/R-99/112	IAROD
18. 100-N Area Sampling and Analysis Plan for CERCLA Waste Sites	DOE/RL-2005-92	SAP
19. Limited Field Investigation Report for the 100-NR-2 Operable Unit	DOE/RL-93-81	Limited Field Investigation
20. Limited Field Investigation Report for the 100-NR-1 Operable Unit (March 1995)	DOE/RL-93-80	Limited Field Investigation
21. Cleanup Verification Package for the Hanford Generating Plan UPR-100-37 Transformer Yard (SWMU #1), 100-N-51 Oil Storage Area (SWMU #2), 185-N Building Drains and Sumps (SWMU #3), and 100-N-50 Turbine Oil Filter Unit (SWMU #4) (June 2004)	HGP-CVP-SWMUs 1, 2, 3, & 4	CVP
22. Cleanup Verification Package for the Hanford Generating Plant 100- N-4 Tile Field (SWMU #5); 100-N-1 Settling Pond (SWMU #6); 1908-NE Outfall (SWMU #7); 1716-NE Maintenance Garage (SWMU #8) and 100-N-52 Underground Storage Tank; 100-N-3 Maintenance Garage French Drain, 100-N-41 Gate House Septic Tank, and 100-N-45 Office Building Septic Tank (SWMU #9); 100-N-5 Bone Yard (SWMU #10); and 100-N-46 Underground Storage Tank	HGP-CVP-SWMUs 5, 6, 7, 8, 9, & 10	CVP

CVP = cleanup verification package
IAROD = interim action record of decision
QRA = qualitative risk assessment
RDR/RAWP = remedial design report/remedial action work plan
SAP = sampling and analysis plan

2. The initial list of target analytes presented in Table 2 was created from the review and evaluation of the Table 1 documents.

Table 2. Summary of 100-N Area Target Analytes and References. (4 Pages)

Analyte	Reference	Analyte	Reference
Radionuclides			
1. Silver-108m	DOE/RL-2005-92	19. Niobium-94	DOE/RL-2005-92
2. Americium-241	CVP-2002-00002	20. Plutonium-238	BHI-00054
3. Antimony-125	EPA/541/R-99/112	21. Plutonium-239/240	CVP-2002-00002
4. Carbon-14	DOE/RL-2005-92	22. Potassium-40	BHI-00054

Table 2. Summary of 100-N Area Target Analytes and References. (4 Pages)

Analyte	Reference	Analyte	Reference
5. Cerium-144	BHI-00054	23. Radium-226	BHI-00054
6. Cesium-134	DOE/RL-2005-93	24. Ruthenium-103	DOE/RL-2005-93
7. Cesium-137	CVP-2002-00002	25. Ruthenium-106	DOE/RL-2005-93
8. Cobalt-60	CVP-2002-00002	26. Sodium-24	DOE/RL-2005-93
9. Curium-243	DOE/RL-2005-92	27. Strontium-90	CVP-2002-00002
10. Europium-152	DOE/RL-2005-93	28. Technetium-99	EPA/541/R-99/112
11. Europium-154	CVP-2002-00002	29. Thorium-228	BHI-00054
12. Europium-155	CVP-2002-00002	30. Thorium-230	DOE/RL-2005-92
13. Iodine-129	DOE/RL-2005-92	31. Thorium-232	BHI-00054
14. Iodine-131	DOE/RL-2005-93	32. Tritium	CVP-2002-00002
15. Manganese-54	BHI-00054	33. Uranium-233/234	BHI-00054
16. Manganese-56	DOE/RL-2005-93	34. Uranium-235	EPA/541/R-99/112
17. Neptunium-237	DOE/RL-2005-92	35. Uranium-238	BHI-00054
18. Nickel-63	CVP-2002-00002		
Nonradionuclides			
1. 2,4,5-Trichloro-phenoxyacetic acid	DOE/RL-2005-92	67. Di-n-butylphthalate	DOE/RL-2005-92
2. Acetone	DOE/RL-2005-92	68. Di-n-octylphthalate	DOE/RL-2005-92
3. Acenaphthene	DOE/RL-2005-92	69. Di-nitro-2-methylphenol; 4,6-	DOE/RL-2005-92
4. Acenaphthylene	DOE/RL-2005-92	70. Dinitrophenol; 2,4-	DOE/RL-2005-92
5. Aldrin	DOE/RL-2005-92	71. Dinitrotoluene; 2,4-	DOE/RL-2005-92
6. Aluminum sulfate (Aluminum)	DOE/RL-2005-93	72. Dinitrotoluene; 2,6-	DOE/RL-2005-92
7. Anthracene	DOE/RL-2005-93	73. Dinoseb (DNBP)	DOE/RL-2005-92
8. Antimony	EPA/541/R-99/112	74. Endosulfan (I, II, sulfate)	DOE/RL-2005-92
9. Arsenic	DOE/RL-2005-93	75. Endrin (and ketone, aldehyde)	DOE/RL-2005-92
10. Asbestos	DOE/RL-2005-93	76. Fluoranthene	DOE/RL-2005-93
11. Barium	CVP-2001-00021	77. Fluorene	DOE/RL-2005-93
12. Benzene	DOE/RL-93-80	78. Fluoride	DOE/RL-93-81
13. Benzo(a)anthrax-cene	DOE/RL-2005-93	79. Heptachlor	DOE/RL-2005-92
14. Benzo(a)pyrene	DOE/RL-2005-93	80. Heptachlor epoxide	DOE/RL-2005-92
15. Benzo(b)fluor-anthene	DOE/RL-2005-93	81. Hexachlorobenzene	DOE/RL-2005-92
16. Benzo(ghi)-perylene	DOE/RL-2005-93	82. Hexachlorobutadiene	DOE/RL-2005-92

Table 2. Summary of 100-N Area Target Analytes and References. (4 Pages)

Analyte	Reference	Analyte	Reference
17. Benzo(k)fluor-anthene	DOE/RL-2005-93	83. Hexachlorocyclopentadiene	DOE/RL-2005-92
18. Beryllium	DOE/RL-2005-93	84. Hexachloroethane	DOE/RL-2005-92
19. BHC; alpha	DOE/RL-2005-92	85. Indeno(1,2,3-cd)pyrene	DOE/RL-2005-93
20. BHC; beta	DOE/RL-2005-92	86. Iron	DOE/RL-93-81
21. BHC; delta	DOE/RL-2005-92	87. Isophorone	DOE/RL-2005-92
22. BHC; gamma (lindane)	DOE/RL-2005-92	88. Lead	CVP-2001-00021
23. Bis(2-chloro-1-methylethyl) ether	DOE/RL-2005-92	89. Lithium	DOE/RL-2005-92
24. Bis(2-chloroethoxy) methane	DOE/RL-2005-92	90. Manganese	DOE/RL-2005-93
25. Bis(2-ethylhexyl) phthalate	DOE/RL-93-80	91. Mercury	CVP-2001-00021
26. Boron	DOE/RL-2005-93	92. Methoxychlor	DOE/RL-2005-92
27. Bromophenyl-phenyl ether; 4-	DOE/RL-2005-92	93. Methylene chloride	DOE/RL-2005-92
28. Butanone; 2-	DOE/RL-2005-92	94. Methylnaphthalene; 2-	DOE/RL-2005-92
29. Butylbenzyl-phthalate	DOE/RL-2005-92	95. Methylphenol; 2- (cresol; o-)	DOE/RL-2005-92
30. Cadmium	CVP-2001-00019	96. Methylphenol; 4- (cresol; p-)	DOE/RL-2005-92
31. Carbon disulfide	DOE/RL-93-80	97. Molybdenum	DOE/RL-2005-92
32. Carbon tetrachloride	EPA/541/R-99/112	98. Naphthalene	DOE/RL-2005-92
33. Carbazole	DOE/RL-2005-92	99. Nickel	CVP-2001-00021
34. Chlordane (alpha, gamma)	DOE/RL-2005-92	100. Nitrate	CVP-2002-00002
35. Chlorine	DOE/RL-2005-93	101. Nitroaniline; 2-	DOE/RL-2005-92
36. Chloro-3-methylphenol;4-	DOE/RL-2005-92	102. Nitroaniline; 3-	DOE/RL-2005-92
37. Chloroanilene;4-	DOE/RL-2005-92	103. Nitroaniline; 4-	DOE/RL-2005-92
38. Chloronaphtha-lene;2-	DOE/RL-2005-92	104. Nitrobenzene	DOE/RL-2005-92
39. Chlorophenol;2-	DOE/RL-2005-92	105. Nitrophenol; 2-	DOE/RL-2005-92
40. Chlorophenyl-phenyl ether;4-	DOE/RL-2005-92	106. Nitrophenol; 4-	DOE/RL-2005-92
41. Chloroform	EPA/541/R-99/112	107. Nitroso-di-n-propylamine; N-	DOE/RL-2005-92
42. Chromium (hexavalent)	DOE/RL-2005-93	108. Nitrosodiphenylamine; N-	DOE/RL-2005-92
43. Chromium (total)	CVP-2001-00021	109. PCBs	DOE/RL-2005-93
44. Chrysene	DOE/RL-2005-93	110. Pentachlorophenol	DOE/RL-2005-92
45. Cobalt	DOE/RL-2005-93	111. Phenanthrene	DOE/RL-2005-93

Table 2. Summary of 100-N Area Target Analytes and References. (4 Pages)

Analyte	Reference	Analyte	Reference
46. Copper	CVP-2001-00021	112. Phenol	DOE/RL-2005-92
47. Cyanide	DOE/RL-2005-92	113. Phosphoric acid	DOE/RL-2005-93
48. Dalapon	DOE/RL-2005-92	114. Pyrene	DOE/RL-2005-93
49. D B 2;4-	DOE/RL-2005-92	115. Selenium	EPA/541/R-99/112
50. DDD; 4,4'-	DOE/RL-2005-92	116. Silver	DOE/RL-2005-92
51. DDE; 4,4'-	DOE/RL-2005-92	117. Silvex (TP; 2,4,5-)	DOE/RL-2005-92
52. DDT; 4,4'-	DOE/RL-2005-92	118. Sodium dichromate	DOE/RL-2005-93
53. Dibenz(a,h)-anthracene	DOE/RL-2005-93	119. Sodium hydroxide	DOE/RL-2005-93
54. Dibenzofuran	DOE/RL-2005-92	120. Sulfate	CVP-2001-00021
55. Dicamba	DOE/RL-2005-92	121. Sulfide	DOE/RL-2005-92
56. Dichlorobenzene; 1,2-	DOE/RL-2005-92	122. Tetrachloroethene	EPA/541/R-99/112
57. Dichlorobenzene; 1,3-	DOE/RL-2005-92	123. Tributyl phosphate	DOE/RL-2005-92
58. Dichlorobenzene; 1,4-	DOE/RL-2005-92	124. Trichlorobenzene; 1,2,4-	DOE/RL-2005-92
59. Dichlorobenzidine; 3,3'-	DOE/RL-2005-92	125. Trichloroethane; 1,1,1-	DOE/RL-93-80
60. Dichlorophenol; 2,4-	DOE/RL-2005-92	126. Trichlorophenol; 2,4,5-	DOE/RL-2005-92
61. Dichlorophenoxy-acetic acid; 2,4-	DOE/RL-2005-92	127. Trichlorophenol; 2,4,6-	DOE/RL-2005-92
62. Dichlorprop	DOE/RL-2005-92	128. Toluene	DOE/RL-2005-92
63. Dieldrin	DOE/RL-2005-92	129. Toxaphene	DOE/RL-2005-92
64. Diethylphthalate	DOE/RL-2005-92	130. TPH/diesel and motor oil	DOE/RL-2005-93
65. Dimethylphthalate	DOE/RL-2005-92	131. Vanadium	DOE/RL-2005-93
66. Dimethylphenol; 2,4-	DOE/RL-2005-92	132. Zinc	CVP-2001-00021

PCB = polychlorinated biphenyl
TPH = total petroleum hydrocarbons

3. The generally accepted exclusion criteria that follow were applied to the initial soil target analyte list to identify the excluded analytes listed in Table 3 and to develop the master target analyte list presented in Table 4.

   - Radionuclides with half-lives less than 3 years (and no significant "daughters")
   - Naturally occurring radionuclides associated with background radiation
   - Essential nutrients (minerals)
   - Analytes that have no toxicity values (per the most current CLARC table).

Table 3. 100-N Area Soil Analytes Excluded from Further Consideration.

Analyte	Exclusion Rationale	Daughters (half-life)
	Radionuclides	
Antimony-125	Half-life less than 3 years (2.76 y)	Te-125m (58d) Te-125 (stable)
Cerium-144	Half-life less than 3 years (284.6d)	Ba-134 (stable)
Cesium-134	Half-life less than 3 years (2.065y)	Ba-134 (stable)
Iodine-131	Half-life less than 3 years (8.02 d)	Xe-131m (11.8d) Xe-131 (stable)
Manganese-54	Half-life less than 3 years (612.2d)	Fe-54 (stable)
Ruthenium-103	Half-life less than 3 years (39.27d)	Rh-103m (56.12m), Rh-103 (stable)
Ruthenium-106	Half-life less than 3 years (1.020y)	Rh-106 (29.9s), Pd-106 (stable)
Manganese-56	Half-life less than 3 years (2.5h)	Fe-56 (stable)
Potassium-40	Naturally occurring background radiation	1.28 E9 years
Radium-226	Only potential source from naturally occurring background radiation (insufficient in-growth time for Hanford introduced U as decay daughter of U-234/Th-230)	1.6 E3 years
Sodium-24	Half-life less than 3 years (15h)	Mg-24 (stable)
Thorium-228	Decay daughter of Th-232/Ra-228. Will be in equilibrium with parent	1.91 years
Thorium-230	Only potential source from naturally occurring background radiation (insufficient in-growth time for Hanford introduced U as decay daughter of U-234)	7.7 E4 years
Thorium-232	Naturally occurring background radiation	1.4 E10 years
	Nonradionuclides	
Acetone	Laboratory contaminant	None
Bis(2-ethylhexyl) phthalate	Laboratory contaminant	None
Fluoride	Essential nutrient (minerals)	None
Iron	Essential nutrient	None
Methylene chloride	Laboratory contaminant	None
Phenol	Naturally occurring, readily biodegradable organic compound	None
Sulfate	No soil toxicity information available	None
Sulfide	No soil toxicity information available	None

Table 4. Master 100-N Area Target Analytes, Analytical Methods, and Laboratory Detection Limits. (7 Pages)

Target Analyte	Practical Quantitation Limits [a]	Preliminary Cleanup Goals [a, b]			Analytical Methods
		Direct Exposure	Groundwater Protection	River Protection	
Radionuclides					
Americium-241 [c]	1	31.1	NV	NV	Am-241/ Cm-244 AEA
Curium-243	1	22.1	NV	NV	Am-241/ Cm-244 AEA
Cesium-137	0.1	6.2	1,465	2,930	GEA
Cobalt-60	0.05	1.4	13,900	27,800	
Europium-152	0.1	3.3	NV	NV	
Europium-154	0.1	3.0	NV	NV	
Europium-155	0.1	125	NV	NV	
Niobium-94	0.2	2.43	NV	NV	
Silver-108m	0.2	2.38	NV	NV	
Strontium-90	1	4.5	27.6	55.2	Gas flow proportional counting
Iodine-129	2	2 [b]	2 [b]	2 [b]	Low energy GEA
Plutonium-238	1	35.1	NV	NV	Isotopic Pu AEA
Plutonium-239/240	1	33.9	NV	NV	
Uranium-233/234	1	1.1 [b]	1.1 [b]	1.1 [b]	Isotopic U AEA
Uranium-235	1	0.61	0.185 [d]	0.185 [d]	
Uranium-238	1	1.1 [b]	1.1 [b]	1.1 [b]	
Carbon-14	2	8.7	NV	NV	Liquid scintillation counting
Nickel-63	30	4,026	83	166	
Technetium-99	0.25	5.7	0.46	0.46	
Tritium	10	510	12.6	25.2	
Neptunium-237	1	2.44	0.9 [d]	1.80 [d]	Np-237 AEA
Nonradionuclides					
Chloride	2	NV	25,000	NA	EPA 300.0 (anions by IC)
Fluoride	5	4,800	2,800	2,890	
Nitrate (as nitrogen)	2.5	128,000	40	40	
Nitrite (as nitrogen)	2.5	8,000	40	4	
Sulfate	5	NV	1,030	1,030	

Table 4. Master 100-N Area Target Analytes, Analytical Methods, and Laboratory Detection Limits. (7 Pages)

Target Analyte	Practical Quantitation Limits [a]	Preliminary Cleanup Goals [a, b]			Analytical Methods
		Direct Exposure	Groundwater Protection	River Protection	
Aluminum	5	80,000	480,000	480,000	EPA 6010 or 200.8 (ICP or ICP/MS)
Antimony	6	32	5.4	12.7	
Arsenic	10	TBD [b]	TBD [b]	TBD [b]	
Barium	2	16,000	1,650	1,600	
Beryllium	0.5	160	63.2	63	
Boron	2	16,000	210	NV	
Cadmium	0.5	80	0.69	0.125 [d]	
Chromium (total)	1	120,000	2,000	1,300	
Cobalt	2	24	15.7	NV	
Copper	1	3,200	284	575	
Lead	5	250	3,000	420	
Lithium	2.5	160	192	NV	
Manganese	5	3,760	512 [b]	256 [b]	
Molybdenum	2	400	32	NV	
Nickel	4	1,600	130	179	
Selenium	10	400	5.2 [d]	0.52 [d]	
Silver	1	400	13.6	0.442	
Thallium	5	5.6	1.59	4.46	
Vanadium	2.5	560	2,240	NV	
Zinc	1	24,000	5,970	226	
Chromium (hexavalent)	0.5	TBD	TBD	TBD	EPA 7196 (hexavalent chromium)
Mercury	0.2	24	2.09	0.33 [b]	EPA 7471 (Hg cold vapor) or 200.8 (ICP/MS)
Ethylene glycol	5.0	160,000	64.3	NV	EPA 8015
Propylene glycol	5	1,600,000	NV	NV	EPA 8015
Methanol	1.0	4,000	16.1	NV	EPA 8015M

Table 4. Master 100-N Area Target Analytes, Analytical Methods, and Laboratory Detection Limits. (7 Pages)

Target Analyte	Practical Quantitation Limits [a]	Preliminary Cleanup Goals [a, b]			Analytical Methods
		Direct Exposure	Groundwater Protection	River Protection	
Aldrin	0.00165	0.0588	0.00504	0.0008 [d]	EPA 8081 (pesticide)
BHC; alpha	0.00165	0.159	0.0005 [d]	0.00031 [d]	
BHC; beta	0.00165	0.556	0.00227	0.00259	
BHC; delta	0.00165	NV	NV	NV	
BHC; gamma (lindane)	0.00165	0.769	0.00209	0.00119	
Chlordane	0.0165	2.86	2.06	0.00055 [d]	
DDD; 4,4'-	0.0033	4.17	0.335	0.00024 [d]	
DDE; 4,4'-	0.0033	2.94	0.446	0.006 [d]	
DDT; 4,4'-	0.0033	2.94	3.49	0.00493	
Dieldrin	0.0033	0.0625	0.0028 [d]	0.00004 [d]	
Endosulfan I	0.00165	480	4.3	0.0417	
Endosulfan II	0.0033	480	4.3	0.0417	
Endosulfan sulfate	0.0033	480	4.3	0.0417	
Endrin	0.0033	24	0.44	0.168	
Endrin aldehyde	0.0033	24	0.44	0.168	
Endrin ketone	0.0033	24	0.44	0.168	
Heptachlor	0.00165	0.222	0.0370	0.000025 [d]	
Heptachlor epoxide	0.00165	0.11	0.008	0.0001 [d]	
Methoxychlor	0.0165	400	64.2	13.4	
Toxaphene	0.165	0.909	0.153	0.0005	
Aroclor-1016 (PCB)	0.0165	0.5	0.094	0.000224 [d]	EPA 8082 (PCBs)
Aroclor-1221 (PCB)	0.0165	0.5	0.00920 [d]	0.0000219 [d]	
Aroclor-1232 (PCB)	0.0165	0.5	0.00920 [d]	0.0000219 [d]	
Aroclor-1242 (PCB)	0.0165	0.5	0.0394	0.0000935 [d]	
Aroclor-1248 (PCB)	0.0165	0.5	0.0386	0.0000935 [d]	
Aroclor-1254 (PCB)	0.0165	0.5	0.0664	0.000158 [d]	
Aroclor-1260 (PCB)	0.0165	0.5	0.721	0.00171 [d]	
Aroclor-1262 (PCB)	0.0165	NV	NV	NV	

Table 4. Master 100-N Area Target Analytes, Analytical Methods, and Laboratory Detection Limits. (7 Pages)

Target Analyte	Practical Quantitation Limits [a]	Preliminary Cleanup Goals [a, b]			Analytical Methods
		Direct Exposure	Groundwater Protection	River Protection	
Dalapon	0.1	2,400	0.811	0.81	EPA 8151 (herbicides)
DB; 2,4-	0.1	640	0.768	NV	
Dicamba	0.1	2,400	2.2	2.20	
Dichlorophenoxyacetic acid; 2,4-	0.4	800	0.321 [d]	0.321	
Dichlorprop	0.1	640	0.321	0.321	
Dinoseb (DNBP){2-sec-butyl-4,6-dinitrophenol}	0.012	80	0.0524	1.05	
TP; 2,4,5- (Silvex)	0.02	640	0.28	0.28	
Trichlorophenoxyacetic acid; 2,4,5-	0.02	800	0.761	0.79	
Acetone	0.02	72,000	28.9	NV	EPA 8260 (VOCs)
Benzene	0.005	18.2	0.004	0.007	
Butanol; 1-	0.1	8,000	3.31	6.6	
Butanone; 2-	0.01	48,000	19.6	NV	
Carbon disulfide	0.005	800	5.65	12.4	
Carbon tetrachloride	0.005	7.69	0.031	0.0023 [d]	
Chloroform	0.005	164	0.038	0.0304	
Cyclohexanone	1	400,000	172	NV	
Ethyl acetate	5	NV	29.8	NV	
Ethyl ether	0.005	16,000	6.68	NV	
Ethylbenzene	0.005	8,000	6.05	26.8	
Methyl isobutyl ketone	0.01	6,400	2.71	NV	
Methylene chloride	0.005	133	0.218	0.0205	
Tetrachloroethene	0.005	1.85	0.008	0.004	
Toluene	0.005	6,400	4.65	49.5	
Trichlorobenzene; 1,2,4-	0.01	800	2.98	1.31	
Trichloroethane; 1,1,1-	0.005	NV	1.58	1.59	
Trichloroethene	0.005	11.2	0.00323	0.0178	
Vinyl chloride	0.005	240	0.00184	0.0126	
Xylenes (total)	0.01	16,000	3.09	5.15	

Table 4. Master 100-N Area Target Analytes, Analytical Methods, and Laboratory Detection Limits. (7 Pages)

Target Analyte	Practical Quantitation Limits [a]	Preliminary Cleanup Goals [a, b]			Analytical Methods
		Direct Exposure	Groundwater Protection	River Protection	
Tributyl phosphate	3.3	185	0.677 [d]	NV	EPA 8270 (SVOCs)
Bis(2-chloro-1-methylethyl) ether	0.33	14.3	NV	0.180	
Bis(2-chloroethoxy) methane	0.33	0.909	NV	NV	
Bis(2-ethylhexyl)phthalate	0.33	71.4	13.9	4.01	
Bromophenylphenyl ether; 4-	0.33	NV	NV	NV	
Butylbenzylphthalate	0.33	16,000	893	349	
Carbazole	0.33	50	0.314 [d]	NV	
Chloro-3-methylphenol;4-	0.33	4,000	NV	NV	
Chlorophenylphenyl ether;4-	0.33	4,000	NV	NV	
Dibenzofuran	0.33	160	7.36	NV	
Diethylphthalate	0.33	64,000	72.2	130	
Di-n-butylphthalate	0.33	8,000	56.5	95.5	
Di-n-octylphthalate	0.33	1,600	532,000	NV	
Isophorone	0.33	1,050	0.228 [d]	7.7	
Methylnaphthalene; 2-	0.33	320	2.03	2.04	
Methylphenol; 4-(cresol; p-)	0.33	400	0.507	0.505	
Chloroaniline;4-	0.33	320	0.264 [d]	NV	
Chloronaphthalene;2-	0.33	6,400	40.7	56.5	
Chlorophenol;2-	0.33	400	0.472	2.28	
Dichlorobenzene; 1,2-	0.33	7,200	7.03	31.7	
Dichlorobenzene; 1,3-	0.33	2,400	3.09	5.15	
Dichlorobenzene; 1,4-	0.33	41.7	0.030 [d]	0.080 [d]	
Dichlorobenzidine; 3,3'-	0.33	2.22	0.003 [d]	0.0005 [d]	
Dichlorophenol; 2,4-	0.33	240	NV	2.65	
Dimethylphenol; 2,4-	0.33	1,600	2.62	4.52	
Dimethylphthalate	0.33	64,000	72.2	130	
Di-nitro-2-methylphenol; 4,6-	0.33	8.00	0.0256 [d]	NV	
Dinitrophenol; 2,4-	0.825	160	0.125 [d]	0.560 [d]	
Dinitrotoluene; 2,4-	0.33	160	0.189 [d]	0.0005 [d]	

Table 4. Master 100-N Area Target Analytes, Analytical Methods, and Laboratory Detection Limits. (7 Pages)

Target Analyte	Practical Quantitation Limits [a]	Preliminary Cleanup Goals [a, b]			Analytical Methods
		Direct Exposure	Groundwater Protection	River Protection	
Dinitrotoluene; 2,6-	0.33	80	NV	NV	EPA 8270 (SVOCs)
Hexachlorobenzene	0.33	0.625	0.015 [d]	0.001 [d]	
Hexachlorobutadiene	0.33	12.8	0.605	0.475	
Hexachlorocyclopentadiene	0.33	480	NV	960	
Hexachloroethane	0.33	71.4	0.125	0.076	
Methylphenol; 2-(cresol; o-)	0.33	4,000	5.14	5.15	
Nitroaniline; 2-	0.33	240	0.121	NV	
Nitroaniline; 3-	0.33	47.6	0.010	NV	
Nitroaniline; 4-	0.33	47.6	0.010	NV	
Nitrobenzene	0.33	160	0.102 [d]	0.109 [d]	
Nitrophenol; 2-	0.66	NV	NV	NV	
Nitrophenol; 4-	0.66	640	1.30	128	
Nitroso-di-n-propylamine; N-	0.33	0.143 [d]	0.000056	0.0035	
Pentachlorophenol	0.33	8.33	0.016 [d]	0.00444 [d]	
Trichlorophenol; 2,4,5-	0.33	8,000	28.8	NV	
Trichlorophenol; 2,4,6-	0.33	90.9	0.0462 [d]	0.049 [d]	
Nitrosodiphenylamine; N-	0.33	204	NV	NV	
Acenaphthene	0.1	4,800	97.9	65.5	EPA-8310 (PAHs)
Acenaphthylene	0.1	4,800	97.9	65.5	
Anthracene	0.05	24,000	2.270	4,550	
Benzo(a)anthracene	0.015	1.37	0.856	0.02400	
Benzo(a)pyrene	0.015	0.137	2.33	0.0545	
Benzo(b)fluoranthene	0.015	1.37	2.95	0.069	
Benzo(ghi)perylene	0.03	2,400	25,700	3,540	
Benzo(k)fluoranthene	0.015	1.37	21.5	0.069	
Chrysene	0.1	13.7	9.56	0.0223 [d]	
Dibenz(a,h)anthracene	0.3	1.37	4.29	0.1	
Fluoranthene	0.05	3,200	631	89	
Fluorene	0.03	3,200	101	206	
Indeno(1,2,3-cd)pyrene	0.03	1.37	8.33	0.195	

Table 4. Master 100-N Area Target Analytes, Analytical Methods, and Laboratory Detection Limits. (7 Pages)

Target Analyte	Practical Quantitation Limits [a]	Preliminary Cleanup Goals [a, b]			Analytical Methods
		Direct Exposure	Groundwater Protection	River Protection	
Naphthalene	0.1	1,600	4.46	138	EPA-8310 (PAHs)
Phenanthrene	0.05	24,000	1,140	4,5500	
Pyrene	0.05	2,400	655	1,3100	
Cyanide	0.5	1,600	0.80	0.8	EPA 9010 or 9012
Asbestos	1%	NA	NA	NA	Microscopy
TPH/diesel and motor oil	5	2,000	2,000	NV	NWTPH-D+
TPH/gasoline range	5	30	30	30	NWTPH-G

[a] Units are mg/kg (nonradionuclides) and pCi/g (radionuclides) unless otherwise noted. Cleanup levels are established in the most current CLARC table (updated February 12, 2009) calculated per *Washington Administrative Code* 173-340 (Ecology 2007) using input parameters stated in the CLARC table.

[b] Where cleanup levels are less than background, cleanup levels default to background as discussed in Section 2.1.2.1 of the 100 Area RDR/RAWP (DOE-RL-96-17, Rev 5).

[c] If strong gamma emissions interfere with analysis of Am-241, Am-241 can be analyzed using Cm/Am Alpha Emission Analysis method.

[d] Where cleanup levels are less than PQLs, cleanup levels default to PQLs as discussed in Section 2.1.2.1 of the 100 Area RDR/RAWP (DOE-RL-96-17, Rev 5).

Reference: Ecology, 2007, "Model Toxics Control Act Statute and Regulation," Publication No. 94-06, revised November 2007, Washington State Department of Ecology, Olympia, Washington.

AEA = alpha energy analysis
CLARC = Cleanup Levels and Risk Calculation
EPA = U.S. Environmental Protection Agency
GC = gas chromatograph
GEA = gamma energy analysis
IC = ion chromatograph
ICP = inductively coupled plasma
MS = mass spectroscopy
NA = not applicable
NWTPH = Northwest total petroleum hydrocarbons
PAH = polycyclic aromatic hydrocarbons
PCB = polychlorinated biphenyl
PQL = practical quantitation limit
RDR/RAWP = remedial design report/remedial action work plan
SVOA = semivolatile organic analysis
TBD = to be determined
TPH = total petroleum hydrocarbons
VOC = volatile organic compound
NV = No value. The generic RESidual RADioactivity modeling reported in the 100 Area RDR/RAWP predicts the contaminant will not reach groundwater within 1,000 years.

4. This step reconciles the master soil target analytes with the groundwater COPCs developed for the OU. Groundwater COPCs *not* found on the master soils list are further evaluated. The default action is to include all groundwater COPCs on the master soil target analyte list, unless there is a valid basis for their exclusion.

5. The appropriate analytical methods for the master target analytes, taking into account action levels and detection limits, are presented in Table 5.

Step 2 – Location Specific Target Analyte Identification (per agreement with regulators, Step 2 was not completed.)

1. Identify the contaminants of concern for the specific waste sites where characterization is proposed from the applicable interim action ROD (which reflects information from LFI and

technical baseline reports). If the characterization location is not at a waste site, evaluate information from waste sites in the vicinity (where available). Include these analytes on the location specific target analyte list (Tables 5 through 8).

2. Identify the contaminants of concern for the specific waste site locations from the verification documentation (CVPs or RSVPs). If the characterization location is not at a waste site, evaluate information from waste sites in the vicinity (where available). Include these analytes on the location specific target analyte list (Tables 5 through 8).

3. Evaluate local groundwater monitoring well data (wells located within waste site "zones of influence"). Determine if groundwater COPCs have been analyzed for in these wells.

   a. If the groundwater COPCs have been analyzed for but not detected, then these analytes will not be included on the location specific target analyte list.

   b. If the groundwater COPCs have been analyzed for and have been detected, then these analytes are included on the location specific target analyte list.

   c. If the groundwater COPCs have not been analyzed for, then an additional evaluation will be performed to determine if there is a data need. If there is a data need, these COPCs are included on the location specific target analyte list.

Table 5. Wells #1 and #R1 Target Analytes, Analytical Methods, and Contract-Required Detection Limits. (4 Pages)

Target Analyte	Practical Quantitation Limits [a]	Preliminary Cleanup Goals [a, b]			Analytical Methods
		Direct Exposure	Groundwater Protection	River Protection	
Radionuclides					
Cesium-137	0.1	6.2	1,465	2,930	EPA 8310 (PAHs)
Cobalt-60	0.05	1.4	13,900	27,800	EPA 8310 (PAHs)
Strontium-90	1	4.5	27.6	55.2	Gas flow proportional counting
Iodine-129	2	2 [b]	2 [b]	2 [b]	Low energy GEA
Plutonium-239/240	1	33.9	NV	NV	Isotopic Pu AEA
Carbon-14	2	8.7	NV	NV	Liquid scintillation counting
Technetium-99	0.25	5.7	0.46	0.46	Liquid scintillation counting
Tritium	10	510	12.6	25.2	Liquid scintillation counting
Nonradionuclides					
Fluoride	5	4,800	2,800	2,890	EPA 300.0

Table 5. Wells #1 and #R1 Target Analytes, Analytical Methods, and Contract-Required Detection Limits. (4 Pages)

Target Analyte	Practical Quantitation Limits [a]	Preliminary Cleanup Goals [a, b]			Analytical Methods
		Direct Exposure	Groundwater Protection	River Protection	
					(anions by IC)
Nitrate (as nitrogen)	2.5	128,000	40	40	EPA 300.0 (anions by IC)
Nitrite (as nitrogen)	2.5	8,000	40	4	EPA 300.0 (anions by IC)
Sulfate	5	NV	1,030	1,030	EPA 300.0 (anions by IC)
Aluminum	5	80,000	480,000	480,000	EPA 6010 or 200.8 (ICP or ICP/MS)
Antimony	6	32	5.4	12.7	EPA 6010 or 200.8 (ICP or ICP/MS)
Arsenic	10	TBD [b]	TBD [b]	TBD [b]	EPA 6010 or 200.8 (ICP or ICP/MS)
Barium	2	16,000	1,650	1,600	EPA 6010 or 200.8 (ICP or ICP/MS)
Beryllium	0.5	160	63.2	63	EPA 6010 or 200.8 (ICP or ICP/MS)
Boron	2	16,000	210	NV	EPA 6010 or 200.8 (ICP or ICP/MS)
Chromium (total)	1	120,000	2,000	1,300	EPA 6010 or 200.8 (ICP or ICP/MS)
Cobalt	2	24	15.7	NV	EPA 6010 or 200.8 (ICP or ICP/MS)
Copper	1	3,200	284	575	EPA 6010 or 200.8 (ICP or ICP/MS)
Lead	5	250	3,000	420	EPA 6010 or 200.8 (ICP or ICP/MS)
Lithium	2.5	160	192	NV	EPA 6010 or 200.8 (ICP or ICP/MS)
Manganese	5	3,760	512 [b]	256 [b]	EPA 6010 or 200.8 (ICP or ICP/MS)
Nickel	4	1,600	130	179	EPA 6010 or 200.8 (ICP or ICP/MS)
Selenium	10	400	5.2[c]	0.52[c]	EPA 6010 or 200.8 (ICP or

Table 5. Wells #1 and #R1 Target Analytes, Analytical Methods, and Contract-Required Detection Limits. (4 Pages)

Target Analyte	Practical Quantitation Limits [a]	Preliminary Cleanup Goals [a, b]			Analytical Methods
		Direct Exposure	Groundwater Protection	River Protection	
					ICP/MS)
Silver	1	400	13.6	0.442	EPA 6010 or 200.8 (ICP or ICP/MS)
Vanadium	2.5	560	2,240	NV	EPA 6010 or 200.8 (ICP or ICP/MS)
Zinc	1	24,000	5,970	226	EPA 6010 or 200.8 (ICP or ICP/MS)
Chromium (hexavalent)	0.5	TBD	TBD	TBD	EPA 7196 (hexavalent chromium)
Mercury	0.2	24	2.09	0.33[b]	EPA 7471 (Hg cold vapor) or 200.8 (ICP/MS)
Chloroform	0.005	164	0.038	0.0304	EPA 8260 (VOCs)
Tetrachloroethene	0.005	1.85	0.008	0.004	EPA 8260 (VOCs)
Acenaphthene	0.1	4,800	97.9	65.5	EPA 8310 (PAHs)
Acenaphthylene	0.1	4,800	97.9	65.5	EPA 8310 (PAHs)
Anthracene	0.05	24,000	2.270	4,550	EPA 8310 (PAHs)
Benzo(a)anthracene	0.015	1.37	0.856	0.02400	EPA 8310 (PAHs)
Benzo(a)pyrene	0.015	0.137	2.33	0.0545	EPA 8310 (PAHs)
Benzo(b)fluoranthene	0.015	1.37	2.95	0.069	EPA 8310 (PAHs)
Benzo(ghi)perylene	0.03	2,400	25,700	3,540	EPA 8310 (PAHs)
Benzo(k)fluoranthene	0.015	1.37	21.5	0.069	EPA 8310 (PAHs)
Chrysene	0.1	13.7	9.56	0.0223 [c]	EPA 8310 (PAHs)
Dibenz(a,h)anthracene	0.3	1.37	4.29	0.1	EPA 8310 (PAHs)
Fluoranthene	0.05	3,200	631	89	EPA 8310 (PAHs)
Fluorene	0.03	3,200	101	206	EPA 8310 (PAHs)
Indeno(1,2,3-cd)pyrene	0.03	1.37	8.33	0.195	EPA 8310 (PAHs)
Naphthalene	0.1	1,600	4.46	138	EPA 8310 (PAHs)

Table 5. Wells #1 and #R1 Target Analytes, Analytical Methods, and Contract-Required Detection Limits. (4 Pages)

Target Analyte	Practical Quantitation Limits [a]	Preliminary Cleanup Goals [a, b]			Analytical Methods
		Direct Exposure	Groundwater Protection	River Protection	
Phenanthrene	0.05	24,000	1,140	4,5500	EPA 8310 (PAHs)
Pyrene	0.05	2,400	655	1,3100	EPA 8310 (PAHs)
Cyanide	0.5	1,600	0.80	0.8	EPA 9010 or 9012
TPH/diesel and motor oil	5	2,000	2,000	NV	NWTPH-D+

[a] Units are mg/kg (nonradionuclides) and pCi/g (radionuclides) unless otherwise noted. Cleanup levels are established in the most current CLARC table (updated February 12, 2009) calculated per *Washington Administrative Code* 173-340 (Ecology 2007) using input parameters stated in the CLARC table.

[b] Where cleanup levels are less than background, cleanup levels default to background as discussed in Section 2.1.2.1 of the 100 Area RDR/RAWP (DOE-RL-96-17, Rev 5).

[c] Where cleanup levels are less than PQLs, cleanup levels default to PQLs as discussed in Section 2.1.2.1 of the 100 Area RDR/RAWP (DOE-RL-96-17, Rev 5).

Reference: Ecology, 2007, "Model Toxics Control Act Statute and Regulation," Publication No. 94-06, revised November 2007, Washington State Department of Ecology, Olympia, Washington.

AEA = alpha energy analysis
CLARC = Cleanup Levels and Risk Calculation
EPA = U.S. Environmental Protection Agency
GEA = gamma energy analysis
IC = ion chromatograph
ICP = inductively coupled plasma
MS = mass spectroscopy
NWTPH = Northwest total petroleum hydrocarbons
PAH = polycyclic aromatic hydrocarbons
PQL = practical quantitation limit
RDR/RAWP = remedial design report/remedial action work plan
TPH = total petroleum hydrocarbons
TBD = to be determined
VOC = volatile organic compound

NV = No value. The generic RESidual RADioactivity modeling reported in the 100 Area RDR/RAWP predicts the contaminant will not reach groundwater within 1,000 years.

Table 6. Well #2 Target Analytes, Analytical Methods, and Contract-Required Detection Limits. (4 Pages)

Target Analyte	Practical Quantitation Limits [a]	Preliminary Cleanup Goals [a, b]			Analytical Methods
		Direct Exposure	Groundwater Protection	River Protection	
Radionuclides					
Cesium-137	0.1	6.2	1,465	2,930	GEA
Cobalt-60	0.05	1.4	13,900	27,800	GEA
Strontium-90	1	4.5	27.6	55.2	Gas flow proportional counting
Iodine-129	2	2 [b]	2 [b]	2 [b]	Low energy GEA
Plutonium-239/240	1	33.9	NV	NV	Isotopic Pu AEA
Carbon-14	2	8.7	NV	NV	Liquid scintillation counting

Table 6. Well #2 Target Analytes, Analytical Methods, and Contract-Required Detection Limits. (4 Pages)

Target Analyte	Practical Quantitation Limits [a]	Preliminary Cleanup Goals [a, b]			Analytical Methods
		Direct Exposure	Groundwater Protection	River Protection	
Technetium-99	0.25	5.7	0.46	0.46	Liquid scintillation counting
Tritium	10	510	12.6	25.2	Liquid scintillation counting
Nonradionuclides					
Fluoride	5	4,800	2,800	2,890	EPA 300.0 (anions by IC)
Nitrate (as nitrogen)	2.5	128,000	40	40	EPA 300.0 (anions by IC)
Nitrite (as nitrogen)	2.5	8,000	40	4	EPA 300.0 (anions by IC)
Sulfate	5	NV	1,030	1,030	EPA 300.0 (anions by IC)
Aluminum	5	80,000	480,000	480,000	EPA 6010 or 200.8 (ICP or ICP/MS)
Antimony	6	32	5.4	12.7	EPA 6010 or 200.8 (ICP or ICP/MS)
Arsenic	10	TBD [b]	TBD [b]	TBD [b]	EPA 6010 or 200.8 (ICP or ICP/MS)
Barium	2	16,000	1,650	1,600	EPA 6010 or 200.8 (ICP or ICP/MS)
Beryllium	0.5	160	63.2	63	EPA 6010 or 200.8 (ICP or ICP/MS)
Boron	2	16,000	210	NV	EPA 6010 or 200.8 (ICP or ICP/MS)
Chromium (total)	1	120,000	2,000	1,300	EPA 6010 or 200.8 (ICP or ICP/MS)
Cobalt	2	24	15.7	NV	EPA 6010 or 200.8 (ICP or ICP/MS)
Copper	1	3,200	284	575	EPA 6010 or 200.8 (ICP or ICP/MS)
Lead	5	250	3,000	420	EPA 6010 or 200.8 (ICP or ICP/MS)
Lithium	2.5	160	192	NV	EPA 6010 or 200.8 (ICP or ICP/MS)

Table 6. Well #2 Target Analytes, Analytical Methods, and Contract-Required Detection Limits. (4 Pages)

Target Analyte	Practical Quantitation Limits [a]	Preliminary Cleanup Goals [a, b]			Analytical Methods
		Direct Exposure	Groundwater Protection	River Protection	
Manganese	5	3,760	512 [b]	256 [b]	EPA 6010 or 200.8 (ICP or ICP/MS)
Nickel	4	1,600	130	179	EPA 6010 or 200.8 (ICP or ICP/MS)
Selenium	10	400	5.2 [c]	0.52 [c]	EPA 6010 or 200.8 (ICP or ICP/MS)
Silver	1	400	13.6	0.442	EPA 6010 or 200.8 (ICP or ICP/MS)
Vanadium	2.5	560	2,240	NV	EPA 6010 or 200.8 (ICP or ICP/MS)
Zinc	1	24,000	5,970	226	EPA 6010 or 200.8 (ICP or ICP/MS)
Chromium (hexavalent)	0.5	TBD	TBD	TBD	EPA 7196 (hexavalent chromium)
Mercury	0.2	24	2.09	0.33 [b]	EPA 7471 (Hg cold vapor)
Benzene	0.005	18.2	0.004	0.007	EPA 8260 (VOCs)
Ethylbenzene	0.005	8,000	6.05	26.8	EPA 8260 (VOCs)
Toluene	0.005	6,400	4.65	49.5	EPA 8260 (VOCs)
Xylenes (total)	0.01	16,000	3.09	5.15	EPA 8260 (VOCs)
Acenaphthene	0.1	4,800	97.9	65.5	EPA-8310 (PAHs)
Acenaphthylene	0.1	4,800	97.9	65.5	EPA-8310 (PAHs)
Anthracene	0.05	24,000	2.270	4,550	EPA-8310 (PAHs)
Benzo(a)anthracene	0.015	1.37	0.856	0.02400	EPA-8310 (PAHs)
Benzo(a)pyrene	0.015	0.137	2.33	0.0545	EPA-8310 (PAHs)
Benzo(b)fluoranthene	0.015	1.37	2.95	0.069	EPA-8310 (PAHs)
Benzo(ghi)perylene	0.03	2,400	25,700	3,540	EPA-8310 (PAHs)
Benzo(k)fluoranthene	0.015	1.37	21.5	0.069	EPA-8310 (PAHs)

Table 6. Well #2 Target Analytes, Analytical Methods, and Contract-Required Detection Limits. (4 Pages)

Target Analyte	Practical Quantitation Limits [a]	Preliminary Cleanup Goals [a, b]			Analytical Methods
		Direct Exposure	Groundwater Protection	River Protection	
Chrysene	0.1	13.7	9.56	0.0223 [c]	EPA-8310 (PAHs)
Dibenz(a,h)anthracene	0.3	1.37	4.29	0.1	EPA-8310 (PAHs)
Fluoranthene	0.05	3,200	631	89	EPA-8310 (PAHs)
Fluorene	0.03	3,200	101	206	EPA-8310 (PAHs)
Indeno(1,2,3-cd) pyrene	0.03	1.37	8.33	0.195	EPA-8310 (PAHs)
Naphthalene	0.1	1,600	4.46	138	EPA-8310 (PAHs)
Phenanthrene	0.05	24,000	1,140	4,5500	EPA-8310 (PAHs)
Pyrene	0.05	2,400	655	1,3100	EPA-8310 (PAHs)
TPH/diesel and motor oil	5	2,000	2,000	NV	NWTPH-D+
TPH/gasoline range	5	30	30	30	NWTPH-G

[a] Units are mg/kg (nonradionuclides) and pCi/g (radionuclides) unless otherwise noted. Cleanup levels are established in the most current CLARC table (updated February 12, 2009) calculated per *Washington Administrative Code* 173-340 (Ecology 2007) using input parameters stated in the CLARC table.

[b] Where cleanup levels are less than background, cleanup levels default to background as discussed in Section 2.1.2.1 of the 100 Area RDR/RAWP (DOE-RL-96-17, Rev 5).

[c] Where cleanup levels are less than PQLs, cleanup levels default to PQLs as discussed in Section 2.1.2.1 of the 100 Area RDR/RAWP (DOE-RL-96-17, Rev 5).

Reference: Washington State Department of Ecology, 2007, "Model Toxics Control Act Statute and Regulation," Publication No. 94-06, revised November 2007, Washington State Department of Ecology, Olympia, Washington.

AEA = alpha energy analysis
CLARC = Cleanup Levels and Risk Calculation
EPA = U.S. Environmental Protection Agency
GEA = gamma energy analysis
IC = ion chromatograph
ICP = inductively coupled plasma
MS = mass spectroscopy
NWTPH = northwest total petroleum hydrocarbons
PAH = polycyclic aromatic hydrocarbons
PQL = practical quantitation limit
RDR/RAWP = remedial design report/remedial action work plan
TBD = to be determined
TPH = total petroleum hydrocarbons
VOC = volatile organic compound

NV = No value. The generic RESidual RADioactivity modeling reported in the 100 Area RDR/RAWP predicts the contaminant will not reach groundwater within 1,000 years.

Table 7. Wells #6 and #R2 Target Analytes, Analytical Methods, and Contract-Required Detection Limits. (2 Pages)

Target Analyte	Practical Quantitation Limits [a]	Preliminary Cleanup Goals [a, b]			Analytical Methods
		Direct Exposure	Groundwater Protection	River Protection	
Radionuclides					
Cesium-137	0.1	6.2	1,465	2,930	GEA
Cobalt-60	0.05	1.4	13,900	27,800	GEA
Europium-152	0.1	3.3	NV	NV	GEA
Europium-154	0.1	3.0	NV	NV	GEA
Strontium-90	1	4.5	27.6	55.2	Gas flow proportional counting
Tritium	10	510	12.6	25.2	Liquid scintillation counting
Nonradionuclides					
Antimony	6	32	5.4	12.7	EPA 6010 or 200.8 (ICP or ICP/MS)
Arsenic	10	TBD [b]	TBD [b]	TBD [b]	EPA 6010 or 200.8 (ICP or ICP/MS)
Beryllium	0.5	160	63.2	63	EPA 6010 or 200.8 (ICP or ICP/MS)
Cadmium	0.5	80	0.69	0.125 [c]	EPA 6010 or 200.8 (ICP or ICP/MS)
Chromium (total)	1	120,000	2,000	1,300	EPA 6010 or 200.8 (ICP or ICP/MS)
Cobalt	2	24	15.7	NV	EPA 6010 or 200.8 (ICP or ICP/MS)
Copper	1	3,200	284	575	EPA 6010 or 200.8 (ICP or ICP/MS)
Lead	5	250	3,000	420	EPA 6010 or 200.8 (ICP or ICP/MS)
Manganese	5	3,760	512 [b]	256 [b]	EPA 6010 or 200.8 (ICP or ICP/MS)
Nickel	4	1,600	130	179	EPA 6010 or 200.8 (ICP or ICP/MS)

Table 7. Wells #6 and #R2 Target Analytes, Analytical Methods, and Contract-Required Detection Limits. (2 Pages)

Target Analyte	Practical Quantitation Limits [a]	Preliminary Cleanup Goals [a, b]			Analytical Methods
		Direct Exposure	Groundwater Protection	River Protection	
Selenium	10	400	5.2 [c]	0.52 [c]	EPA 6010 or 200.8 (ICP or ICP/MS)
Silver	1	400	13.6	0.442	EPA 6010 or 200.8 (ICP or ICP/MS)
Thallium	5	5.6	1.59	4.46	EPA 6010 or 200.8 (ICP or ICP/MS)
Vanadium	2.5	560	2,240	NV	EPA 6010 or 200.8 (ICP or ICP/MS)
Zinc	1	24,000	5,970	226	EPA 6010 or 200.8 (ICP or ICP/MS)
Chromium (hexavalent)	0.5	TBD	TBD	TBD	EPA 7196 (hexavalent chromium)

[a] Units are mg/kg (nonradionuclides) and pCi/g (radionuclides) unless otherwise noted. Cleanup levels are established in the most current CLARC table (updated February 12, 2009) calculated per *Washington Administrative Code* 173-340 (Ecology 2007) using input parameters stated in the CLARC table.

[b] Where cleanup levels are less than background, cleanup levels default to background as discussed in Section 2.1.2.1 of the 100 Area RDR/RAWP (DOE-RL-96-17, Rev 5).

[c] Where cleanup levels are less than PQLs, cleanup levels default to PQLs as discussed in Section 2.1.2.1 of the 100 Area RDR/RAWP (DOE-RL-96-17, Rev 5).

Reference: Washington State Department of Ecology, 2007, "Model Toxics Control Act Statute and Regulation," Publication No. 94-06, revised November 2007, Washington State Department of Ecology, Olympia, Washington.

CLARC = Cleanup Levels and Risk Calculation
EPA = U.S. Environmental Protection Agency
GEA = gamma energy analysis
ICP = inductively coupled plasma
MS = mass spectroscopy
PQL = practical quantitation limit
RDR/RAWP = remedial design/remedial action work plan
TBD = to be determined

NV = No value. The generic RESidual RADioactivity modeling reported in the 100 Area RDR/RAWP predicts the contaminant will not reach groundwater within 1,000 years.

Table 8. Wells #3, #4, and #5 Target Analytes, Analytical Methods, and Contract-Required Detection Limits. (9 Pages)

Target Analyte	Practical Quantitation Limits [a]	Preliminary Cleanup Goals [a, b]			Analytical Methods
		Direct Exposure	Groundwater Protection	River Protection	
Radionuclides					
Americium-241 [c]	1	31.1	NV	NV	Am-241/ Cm-244 AEA
Curium-243	1	22.1	NV	NV	Am-241/ Cm-244 AEA
Cesium-137	0.1	6.2	1,465	2,930	GEA

Table 8. Wells #3, #4, and #5 Target Analytes, Analytical Methods, and Contract-Required Detection Limits. (9 Pages)

Target Analyte	Practical Quantitation Limits [a]	Preliminary Cleanup Goals [a, b]			Analytical Methods
		Direct Exposure	Groundwater Protection	River Protection	
Cobalt-60	0.05	1.4	13,900	27,800	GEA
Europium-152	0.1	3.3	NV	NV	GEA
Europium-154	0.1	3.0	NV	NV	GEA
Europium-155	0.1	125	NV	NV	GEA
Niobium-94	0.2	2.43	NV	NV	GEA
Silver-108m	0.2	2.38	NV	NV	GEA
Strontium-90	1	4.5	27.6	55.2	Gas flow proportional counting
Iodine-129	2	2 [b]	2 [b]	2 [b]	Low energy GEA
Plutonium-238	1	35.1	NV	NV	Isotopic Pu AEA
Plutonium-239/240	1	33.9	NV	NV	
Uranium-233/234	1	1.1 [b]	1.1 [b]	1.1 [b]	Isotopic U AEA
Uranium-235	1	0.61	0.185 [d]	0.185 [d]	Isotopic U AEA
Uranium-238	1	1.1 [b]	1.1 [b]	1.1 [b]	Isotopic U AEA
Carbon-14	2	8.7	NV	NV	Liquid scintillation counting
Nickel-63	30	4,026	83	166	Liquid scintillation counting
Technetium-99	0.25	5.7	0.46	0.46	Liquid scintillation counting
Tritium	10	510	12.6	25.2	Liquid scintillation counting
Neptunium-237	1	2.44	0.9 [d]	1.80 [d]	Np-237 AEA
Nonradionuclides					
Chloride	2	NV	25,000	NA	EPA 300.0 (anions by IC)
Fluoride	5	4,800	2,800	2,890	EPA 300.0 (anions by IC)
Nitrate (as nitrogen)	2.5	128,000	40	40	EPA 300.0 (anions by IC)
Nitrite (as nitrogen)	2.5	8,000	40	4	EPA 300.0 (anions by IC)
Sulfate	5	NV	1,030	1,030	EPA 300.0 (anions by IC)

Table 8. Wells #3, #4, and #5 Target Analytes, Analytical Methods, and Contract-Required Detection Limits. (9 Pages)

Target Analyte	Practical Quantitation Limits [a]	Preliminary Cleanup Goals [a, b]			Analytical Methods
		Direct Exposure	Groundwater Protection	River Protection	
Aluminum	5	80,000	480,000	480,000	EPA 6010 or 200.8 (ICP or ICP/MS)
Antimony	6	32	5.4	12.7	EPA 6010 or 200.8 (ICP or ICP/MS)
Arsenic	10	TBD [b]	TBD [b]	TBD [b]	EPA 6010 or 200.8 (ICP or ICP/MS)
Barium	2	16,000	1,650	1,600	EPA 6010 or 200.8 (ICP or ICP/MS)
Beryllium	0.5	160	63.2	63	EPA 6010 or 200.8 (ICP or ICP/MS)
Boron	2	16,000	210	NV	EPA 6010 or 200.8 (ICP or ICP/MS)
Cadmium	0.5	80	0.69	0.125 [d]	EPA 6010 or 200.8 (ICP or ICP/MS)
Chromium (total)	1	120,000	2,000	1,300	EPA 6010 or 200.8 (ICP or ICP/MS)
Cobalt	2	24	15.7	NV	EPA 6010 or 200.8 (ICP or ICP/MS)
Copper	1	3,200	284	575	EPA 6010 or 200.8 (ICP or ICP/MS)
Lead	5	250	3,000	420	EPA 6010 or 200.8 (ICP or ICP/MS)
Lithium	2.5	160	192	NV	EPA 6010 or 200.8 (ICP or ICP/MS)
Manganese	5	3,760	512 [b]	256 [b]	EPA 6010 or 200.8 (ICP or ICP/MS)
Molybdenum	2	400	32	NV	EPA 6010 or 200.8 (ICP or ICP/MS)
Nickel	4	1,600	130	179	EPA 6010 or 200.8 (ICP or ICP/MS)
Selenium	10	400	5.2 [d]	0.52 [d]	EPA 6010 or 200.8 (ICP or ICP/MS)

Table 8. Wells #3, #4, and #5 Target Analytes, Analytical Methods, and Contract-Required Detection Limits. (9 Pages)

Target Analyte	Practical Quantitation Limits [a]	Preliminary Cleanup Goals [a, b]			Analytical Methods
		Direct Exposure	Groundwater Protection	River Protection	
Silver	1	400	13.6	0.442	EPA 6010 or 200.8 (ICP or ICP/MS)
Thallium	5	5.6	1.59	4.46	EPA 6010 or 200.8 (ICP or ICP/MS)
Vanadium	2.5	560	2,240	NV	EPA 6010 or 200.8 (ICP or ICP/MS)
Zinc	1	24,000	5,970	226	EPA 6010 or 200.8 (ICP or ICP/MS)
Chromium (hexavalent)	0.5	TBD	TBD	TBD	EPA 7196 (hexavalent chromium)
Mercury	0.2	24	2.09	0.33 [b]	EPA 7471 (Hg cold vapor)
Ethylene glycol	5.0	160,000	64.3	NV	EPA 8015
Propylene glycol	5	1,600,000	NV	NV	EPA 8015
Methanol	1.0	4,000	16.1	NV	EPA 8015M
Aldrin	0.00165	0.0588	0.00504	0.0008 [d]	EPA 8081 (pesticides)
BHC; alpha	0.00165	0.159	0.0005 [d]	0.00031 [d]	EPA 8081 (pesticides)
BHC; beta	0.00165	0.556	0.00227	0.00259	EPA 8081 (pesticides)
BHC; delta	0.00165	NV	NV	NV	EPA 8081 (pesticides)
BHC; gamma (lindane)	0.00165	0.769	0.00209	0.00119	EPA 8081 (pesticides)
Chlordane	0.0165	2.86	2.06	0.00055 [d]	EPA 8081 (pesticides)
DDD; 4,4'-	0.0033	4.17	0.335	0.00024 [d]	EPA 8081 (pesticides)
DDE; 4,4'-	0.0033	2.94	0.446	0.006 [d]	EPA 8081 (pesticides)
DDT; 4,4'-	0.0033	2.94	3.49	0.00493	EPA 8081 (pesticides)
Dieldrin	0.0033	0.0625	0.0028 [d]	0.00004 [d]	EPA 8081 (pesticides)
Endosulfan I	0.00165	480	4.3	0.0417	EPA 8081 (pesticides)
Endosulfan II	0.0033	480	4.3	0.0417	EPA 8081 (pesticides)
Endosulfan sulfate	0.0033	480	4.3	0.0417	EPA 8081 (pesticides)

Table 8. Wells #3, #4, and #5 Target Analytes, Analytical Methods, and Contract-Required Detection Limits. (9 Pages)

Target Analyte	Practical Quantitation Limits [a]	Preliminary Cleanup Goals [a, b]			Analytical Methods
		Direct Exposure	Groundwater Protection	River Protection	
Endrin	0.0033	24	0.44	0.168	EPA 8081 (pesticides)
Endrin aldehyde	0.0033	24	0.44	0.168	EPA 8081 (pesticides)
Endrin ketone	0.0033	24	0.44	0.168	EPA 8081 (pesticides)
Heptachlor	0.00165	0.222	0.0370	0.000025 [d]	EPA 8081 (pesticides)
Heptachlor epoxide	0.00165	0.11	0.008	0.0001 [d]	EPA 8081 (pesticides)
Methoxychlor	0.0165	400	64.2	13.4	EPA 8081 (pesticides)
Toxaphene	0.165	0.909	0.153	0.0005	EPA 8081 (pesticides)
Aroclor-1016 (PCB)	0.0165	0.5	0.094	0.000224 [d]	EPA 8082 (PCBs)
Aroclor-1221 (PCB)	0.0165	0.5	0.00920[d]	0.0000219 [d]	EPA 8082 (PCBs)
Aroclor-1232 (PCB)	0.0165	0.5	0.00920 [d]	0.0000219 [d]	EPA 8082 (PCBs)
Aroclor-1242 (PCB)	0.0165	0.5	0.0394	0.0000935 [d]	EPA 8082 (PCBs)
Aroclor-1248 (PCB)	0.0165	0.5	0.0386	0.0000935 [d]	EPA 8082 (PCBs)
Aroclor-1254 (PCB)	0.0165	0.5	0.0664	0.000158 [d]	EPA 8082 (PCBs)
Aroclor-1260 (PCB)	0.0165	0.5	0.721	0.00171 [d]	EPA 8082 (PCBs)
Aroclor-1262 (PCB)	0.0165	NV	NV	NV	EPA 8082 (PCBs)
Dalapon	0.1	2,400	0.811	0.81	EPA 8151 (herbicides)
DB; 2,4-	0.1	640	0.768	NV	EPA 8151 (herbicides)
Dicamba	0.1	2,400	2.2	2.20	EPA 8151 (herbicides)
Dichlorophenoxyacetic acid; 2,4-	0.4	800	0.321 [d]	0.321	EPA 8151 (herbicides)
Dichlorprop	0.1	640	0.321	0.321	EPA 8151 (herbicides)
Dinoseb (DNBP){2-sec-butyl-4,6-dinitrophenol}	0.012	80	0.0524	1.05	EPA 8151 (herbicides)
TP; 2,4,5- (Silvex)	0.02	640	0.28	0.28	EPA 8151 (herbicides)
Trichlorophenoxyacetic acid; 2,4,5-	0.02	800	0.761	0.79	EPA 8151 (herbicides)
Acetone	0.02	72,000	28.9	NV	EPA 8260 (VOCs)

Table 8. Wells #3, #4, and #5 Target Analytes, Analytical Methods, and Contract-Required Detection Limits. (9 Pages)

Target Analyte	Practical Quantitation Limits [a]	Preliminary Cleanup Goals [a, b]			Analytical Methods
		Direct Exposure	Groundwater Protection	River Protection	
Benzene	0.005	18.2	0.004	0.007	EPA 8260 (VOCs)
Butanol; 1-	0.1	8,000	3.31	6.6	EPA 8260 (VOCs)
Butanone; 2-	0.01	48,000	19.6	NV	EPA 8260 (VOCs)
Carbon disulfide	0.005	800	5.65	12.4	EPA 8260 (VOCs)
Carbon tetrachloride	0.005	7.69	0.031	0.0023 [d]	EPA 8260 (VOCs)
Chloroform	0.005	164	0.038	0.0304	EPA 8260 (VOCs)
Cyclohexanone	1	400,000	172	NV	EPA 8260 (VOCs)
Ethyl acetate	5	NV	29.8	NV	EPA 8260 (VOCs)
Ethyl ether	0.005	16,000	6.68	NV	EPA 8260 (VOCs)
Ethylbenzene	0.005	8,000	6.05	26.8	EPA 8260 (VOCs)
Methyl isobutyl ketone	0.01	6,400	2.71	NV	EPA 8260 (VOCs)
Methylene chloride	0.005	133	0.218	0.0205	EPA 8260 (VOCs)
Tetrachloroethene	0.005	1.85	0.008	0.004	EPA 8260 (VOCs)
Toluene	0.005	6,400	4.65	49.5	EPA 8260 (VOCs)
Trichlorobenzene; 1,2,4-	0.01	800	2.98	1.31	EPA 8260 (VOCs)
Trichloroethane; 1,1,1-	0.005	NV	1.58	1.59	EPA 8260 (VOCs)
Trichloroethene	0.005	11.2	0.00323	0.0178	EPA 8260 (VOCs)
Vinyl chloride	0.005	240	0.00184	0.0126	EPA 8260 (VOCs)
Xylenes (total)	0.01	16,000	3.09	5.15	EPA 8260 (VOCs)
Tributyl phosphate	3.3	185	0.677 [d]	NV	EPA 8270 (SVOCs)
Bis(2-chloro-1-methylethyl) ether	0.33	14.3	NV	0.180	EPA 8270 (SVOCs)
Bis(2-chloroethoxy) methane	0.33	0.909	NV	NV	EPA 8270 (SVOCs)
Bis(2-ethylhexyl)phthalate	0.33	71.4	13.9	4.01	EPA 8270 (SVOCs)
Bromophenylphenyl ether;4-	0.33	NV	NV	NV	EPA 8270 (SVOCs)

Table 8. Wells #3, #4, and #5 Target Analytes, Analytical Methods, and Contract-Required Detection Limits. (9 Pages)

Target Analyte	Practical Quantitation Limits [a]	Preliminary Cleanup Goals [a, b]			Analytical Methods
		Direct Exposure	Groundwater Protection	River Protection	
Butylbenzylphthalate	0.33	16,000	893	349	EPA 8270 (SVOCs)
Carbazole	0.33	50	0.314 [d]	NV	EPA 8270 (SVOCs)
Chloro-3-methylphenol;4-	0.33	4,000	NV	NV	EPA 8270 (SVOCs)
Chlorophenylphenyl ether;4-	0.33	4,000	NV	NV	EPA 8270 (SVOCs)
Dibenzofuran	0.33	160	7.36	NV	EPA 8270 (SVOCs)
Diethylphthalate	0.33	64,000	72.2	130	EPA 8270 (SVOCs)
Di-n-butylphthalate	0.33	8,000	56.5	95.5	EPA 8270 (SVOCs)
Di-n-octylphthalate	0.33	1,600	532,000	NV	EPA 8270 (SVOCs)
Isophorone	0.33	1,050	0.228 [d]	7.7	EPA 8270 (SVOCs)
Methylnaphthalene; 2-	0.33	320	2.03	2.04	EPA 8270 (SVOCs)
Methylphenol; 4-(cresol; p-)	0.33	400	0.507	0.505	EPA 8270 (SVOCs)
Chloroaniline;4-	0.33	320	0.264 [d]	NV	EPA 8270 (SVOCs)
Chloronaphthalene;2-	0.33	6,400	40.7	56.5	EPA 8270 (SVOCs)
Chlorophenol;2-	0.33	400	0.472	2.28	EPA 8270 (SVOCs)
Dichlorobenzene; 1,2-	0.33	7,200	7.03	31.7	EPA 8270 (SVOCs)
Dichlorobenzene; 1,3-	0.33	2,400	3.09	5.15	EPA 8270 (SVOCs)
Dichlorobenzene; 1,4-	0.33	41.7	0.030 [d]	0.080 [d]	EPA 8270 (SVOCs)
Dichlorobenzidine; 3,3'-	0.33	2.22	0.003 [d]	0.0005 [d]	EPA 8270 (SVOCs)
Dichlorophenol; 2,4-	0.33	240	NV	2.65	EPA 8270 (SVOCs)
Dimethylphenol; 2,4-	0.33	1,600	2.62	4.52	EPA 8270 (SVOCs)
Dimethylphthalate	0.33	64,000	72.2	130	EPA 8270 (SVOCs)
Di-nitro-2-methylphenol; 4,6-	0.33	8.00	0.0256 [d]	NV	EPA 8270 (SVOCs)
Dinitrophenol; 2,4-	0.825	160	0.125 [d]	0.560 [d]	EPA 8270 (SVOCs)
Dinitrotoluene; 2,4-	0.33	160	0.189 [d]	0.0005 [d]	EPA 8270 (SVOCs)

Table 8. Wells #3, #4, and #5 Target Analytes, Analytical Methods, and Contract-Required Detection Limits. (9 Pages)

Target Analyte	Practical Quantitation Limits [a]	Preliminary Cleanup Goals [a, b]			Analytical Methods
		Direct Exposure	Groundwater Protection	River Protection	
Dinitrotoluene; 2,6-	0.33	80	NV	NV	EPA 8270 (SVOCs)
Hexachlorobenzene	0.33	0.625	0.015 [d]	0.001 [d]	EPA 8270 (SVOCs)
Hexachlorobutadiene	0.33	12.8	0.605	0.475	EPA 8270 (SVOCs)
Hexachlorocyclopentadiene	0.33	480	NV	960	EPA 8270 (SVOCs)
Hexachloroethane	0.33	71.4	0.125	0.076	EPA 8270 (SVOCs)
Methylphenol; 2-(cresol; o-)	0.33	4,000	5.14	5.15	EPA 8270 (SVOCs)
Nitroaniline; 2-	0.33	240	0.121	NV	EPA 8270 (SVOCs)
Nitroaniline; 3-	0.33	47.6	0.010	NV	EPA 8270 (SVOCs)
Nitroaniline; 4-	0.33	47.6	0.010	NV	EPA 8270 (SVOCs)
Nitrobenzene	0.33	160	0.102 [d]	0.109 [d]	EPA 8270 (SVOCs)
Nitrophenol; 2-	0.66	NV	NV	NV	EPA 8270 (SVOCs)
Nitrophenol; 4-	0.66	640	1.30	128	EPA 8270 (SVOCs)
Nitroso-di-n-propylamine; N-	0.33	0.143 [d]	0.000056	0.0035	EPA 8270 (SVOCs)
Nitrosodiphenylamine; N-	0.33	204	NV	NV	EPA 8270 (SVOCs)
Pentachlorophenol	0.33	8.33	0.016 [d]	0.00444 [d]	EPA 8270 (SVOCs)
Trichlorophenol; 2,4,5-	0.33	8,000	28.8	NV	EPA 8270 (SVOCs)
Trichlorophenol; 2,4,6-	0.33	90.9	0.0462 [d]	0.049 [d]	EPA 8270 (SVOCs)
Acenaphthene	0.1	4,800	97.9	65.5	EPA 8310 (PAHs)
Acenaphthylene	0.1	4,800	97.9	65.5	EPA 8310 (PAHs)
Anthracene	0.05	24,000	2.270	4,550	EPA 8310 (PAHs)
Benzo(a)anthracene	0.015	1.37	0.856	0.02400	EPA 8310 (PAHs)
Benzo(a)pyrene	0.015	0.137	2.33	0.0545	EPA 8310 (PAHs)
Benzo(b)fluoranthene	0.015	1.37	2.95	0.069	EPA 8310 (PAHs)
Benzo(ghi)perylene	0.03	2,400	25,700	3,540	EPA 8310 (PAHs)

Table 8. Wells #3, #4, and #5 Target Analytes, Analytical Methods, and Contract-Required Detection Limits. (9 Pages)

Target Analyte	Practical Quantitation Limits [a]	Preliminary Cleanup Goals [a, b]			Analytical Methods
		Direct Exposure	Groundwater Protection	River Protection	
Benzo(k)fluoranthene	0.015	1.37	21.5	0.069	EPA 8310 (PAHs)
Chrysene	0.1	13.7	9.56	0.0223 [d]	EPA 8310 (PAHs)
Dibenz(a,h)anthracene	0.3	1.37	4.29	0.1	EPA 8310 (PAHs)
Fluoranthene	0.05	3,200	631	89	EPA 8310 (PAHs)
Fluorene	0.03	3,200	101	206	EPA 8310 (PAHs)
Indeno(1,2,3-cd)pyrene	0.03	1.37	8.33	0.195	EPA 8310 (PAHs)
Naphthalene	0.1	1,600	4.46	138	EPA 8310 (PAHs)
Phenanthrene	0.05	24,000	1,140	9,100	EPA 8310 (PAHs)
Pyrene	0.05	2,400	655	2,620	EPA 8310 (PAHs)
Cyanide	0.5	1,600	0.80	0.8	EPA 9010 or 9012
Asbestos	1%	NA	NA	NA	Microscopy
TPH/diesel and motor oil	5	2,000	2,000	NV	NWTPH-D+
TPH/gasoline range	5	30	30	30	NWTPH-G

[a] Units are mg/kg (nonradionuclides) and pCi/g (radionuclides) unless otherwise noted. Cleanup levels are established in the most current CLARC table (updated February 12, 2009) calculated per *Washington Administrative Code* 173-340 (Ecology 2007) using input parameters stated in the CLARC table.

[b] Where cleanup levels are less than background, cleanup levels default to background as discussed in Section 2.1.2.1 of the 100 Area RDR/RAWP (DOE-RL-96-17, Rev 5).

[c] If strong gamma emissions interfere with analysis of Am-241, Am-241 can be analyzed using Cm/Am Alpha Emission Analysis method.

[d] Where cleanup levels are less than PQLs, cleanup levels default to PQLs as discussed in Section 2.1.2.1 of the 100 Area RDR/RAWP (DOE-RL-96-17, Rev 5).

Reference: Washington State Department of Ecology, 2007, "Model Toxics Control Act Statute and Regulation," Publication No. 94-06, revised November 2007, Washington State Department of Ecology, Olympia, Washington.

AEA = alpha energy analysis
CLARC = Cleanup Levels and Risk Calculation
EPA = U.S. Environmental Protection Agency
GEA = gamma energy analysis
IC = ion chromatograph
ICP = inductively coupled plasma
MS = mass spectography
NA = not applicable
NWTPH = Northwest total petroleum hydrocarbons
PAH = polycyclic aromatic hydrocarbons
PCB = polychlorinated biphenyl
PQL = practical quantitation limit
RDR/RAWP = remedial design report/remedial action work plan
SVOC = semivolatile organic compound
TBD = to be determined
VOC = volatile organic compound

NV = No value. The generic RESidual RADioactivity modeling reported in the 100 Area RDR/RAWP predicts the contaminant will not reach groundwater within 1,000 years.

6.0 CONCLUSIONS

This approach should be followed to identify target analytes for the other 100 and 300 Area RI/FS Work Plans under development.

The analytical methods in Table 4, particularly those identified for radionuclides, should be verified and documented in the quality assurance project plan section of the sampling and analysis plan for 100-N. As additional soil data become available, other suitable exclusion criteria should be considered and evaluated for use in the target analyte list development process.

7.0 REFERENCES

The references used in this document are listed in Table 1.

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