2013 YRWWTP INFLUENT AND EFFLUENT METALS

DATE	FLOW (MGD)	ANTIMONY		ARSENIC		BERYLLIUM		CADMIUM		CHROMIUM		COPPER		LEAD	
		Total conc., ug/L	Total mass, lbs	Total conc., ug/L	Total mass, lbs	Total conc., ug/L	Total mass, lbs	Total conc., ug/L	Total mass, lbs	Total conc., ug/L	Total mass, lbs	Total conc., ug/L	Total mass, lbs	Total conc., ug/L	Total mass, lbs
3/5/2013	7.82	0.050	0.003	2.25	0.147	0	0	0.106	0.007	2.68	0.175	23.4	1.53	2.93	0.191
6/4/2013	8.18	0.045	0.003	1.46	0.100	0	0	0.097	0.007	2.09	0.143	24.0	1.64	3.19	0.218
9/4/2013	10.71	0.195	0.017	2.28	0.204	0	0	0.121	0.011	2.14	0.191	19.9	1.78	1.99	0.178
10/8/2013	10.48	0.156	0.014	1.60	0.140	0	0	0.085	0.007	0.93	0.081	11.7	1.02	1.14	0.100
INFLUENT AVERAGE		**0.112**	**0.009**	**1.90**	**0.147**	**0**	**0**	**0.102**	**0.008**	**1.96**	**0.147**	**19.8**	**1.49**	**2.31**	**0.172**
3/5/2013	8.13	0.477	0.032	2.10	0.142	0	0	0.042	0.003	0.89	0.060	6.12	0.415	0.649	0.044
6/4/2013	9.27	0.409	0.032	1.24	0.096	0	0	0.047	0.004	0.67	0.052	5.97	0.462	0.641	0.050
9/4/2013	11.21	0.375	0.035	2.11	0.197	0	0	0.032	0.003	0.73	0.068	5.98	0.559	0.331	0.031
10/8/2013	11.00	0.340	0.031	1.66	0.152	0	0	0.038	0.003	0.66	0.061	6.33	0.581	0.379	0.035
EFFLUENT AVERAGE		**0.400**	**0.033**	**1.78**	**0.147**	**0**	**0**	**0.040**	**0.003**	**0.74**	**0.060**	**6.10**	**0.504**	**0.500**	**0.040**
REMOVAL RATE (%)		*		**0.34**		-		**59.2**		**59.1**		**66.2**		**76.8**	

DATE	FLOW (MGD)	MERCURY		MOLYBDENUM		NICKEL		SELENIUM		SILVER		THALLIUM		ZINC	
		Total conc., ug/L	Total mass, lbs	Total conc., ug/L	Total mass, lbs	Total conc., ug/L	Total mass, lbs	Total conc., ug/L	Total mass, lbs	Total conc., ug/L	Total mass, lbs	Total conc., ug/L	Total mass, lbs	Total conc., ug/L	Total mass, lbs
3/5/2013	7.82	0.0637	0.0042	0.892	0.058	2.57	0.168	1.50	0.098	0.050	0.003	0	0	132	8.61
6/4/2013	8.18	0.0576	0.0039	0.827	0.056	2.31	0.158	2.16	0.147	0.020	0.001	0	0	111	7.57
9/4/2013	10.71	0.0761	0.0068	0.847	0.076	1.87	0.167	5.36	0.479	0.044	0.004	0	0	83.7	7.48
10/8/2013	10.48	0.0059	0.0005	1.00	0.087	1.19	0.104	0.60	0.052	0.020	0.002	0	0	70.3	6.14
INFLUENT AVERAGE		**0.0508**	**0.0038**	**0.89**	**0.069**	**1.99**	**0.149**	**2.41**	**0.19**	**0.034**	**0.003**	**0**	**0**	**99.3**	**7.45**
3/5/2013	8.13	0.0048	0.0003	1.68	0.114	1.82	0.123	0.660	0.045	0.154	0.010	0	0	65.5	4.44
6/4/2013	9.27	0.0037	0.0003	2.23	0.172	1.38	0.107	0.800	0.062	0.025	0.002	0	0	61.8	4.78
9/4/2013	11.21	0.0032	0.0003	9.15	0.855	1.64	0.153	1.14	0.107	0.041	0.004	0	0	46.2	4.32
10/8/2013	11.00	0.0048	0.0004	1.22	0.112	1.44	0.132	0.300	0.028	0.045	0.004	0	0	50.2	4.61
EFFLUENT AVERAGE		**0.0041**	**0.0003**	**3.57**	**0.313**	**1.57**	**0.129**	**0.725**	**0.060**	**0.066**	**0.005**	**0**	**0**	**55.9**	**4.54**
REMOVAL RATE (%)		**91.2**		*		**13.5**		**69.0**		*		-		**39.1**	

In accordance with Section S6A. of the City's NPDES permit, the City calculates the removal rates for each pollutant and the adequacy of the existing local limits to prevent treatment plant interference, pass through of pollutants that affect receiving water quality, and sludge contamination. For values reported below detection, zero was used when the parameter was not detected in another sample for the reporting period and one-half the detection was used when the parameter was detected in another sample for the reporting period (values shown in red).
*Note: Antimony, molybdenum, and silver concentrations showed a negative removal rate. Influent and effluent molybdenum and silver concentrations were far below the local limit of 1.14 mg/L and 0.0002 mg/L, respectively.

2013 YRWWTP PRIORITY POLLUTANT REMOVAL RATES (%)

DATE 10/08/2013	INFLUENT FLOW (MGD) 10.48		EFFLUENT FLOW (MGD) 11.00		
VOLATILE ORGANIC COMPOUNDS	Total conc., ug/L	Total mass, lbs	Total conc., ug/L	Total mass, lbs	REMOVAL RATE (%)
CHLOROFORM	**2.9**	**0.25**	**<1.0**	**<0.092**	**>63**
1,4-DICHLOROBENZENE	1.2	0.10	<1.0	<0.092	>8.0
SEMIVOLATILE ORGANIC COMPOUNDS	Total conc., ug/L	Total mass, lbs	Total conc., ug/L	Total mass, lbs	REMOVAL RATE (%)
BIS(2-ETHYLHEXYL) PHTHALATE	**<16**	**<1.4**	**54**	**5.0**	*
DIETHYL PHTHALATE	2.7	0.24	<0.43	<0.039	>84
N-NITROSODIMETHYLAMINE	**16**	**1.4**	**<2.2**	**<0.20**	**>86**
PHENOL	22	1.9	<0.65	<0.060	>97
ORGANOCHLORINE PESTICIDES/ POLYCHLORINATED BIPHENYLS (PCBs)	Total conc., ug/L	Total mass, lbs	Total conc., ug/L	Total mass, lbs	REMOVAL RATE (%)
ENDOSULFAN II	**0.026**	**0.002**	**<0.022**	**<0.002**	**>12**
ENDRIN	0.026	0.002	<0.022	<0.002	>12
GENERAL CHEMISTRY	Total conc., mg/L	Total mass, lbs	Total conc., mg/L	Total mass, lbs	REMOVAL RATE (%)
TOTAL PHENOLS	**<0.0070**	**<0.61**	**<0.0070**	**<0.64**	*
TOTAL CYANIDE	0.011	0.96	<0.01	<0.92	4.6
FOG	**35**	**3059**	**2**	**183**	**94**
pH	6.75		6.99		
TOTAL DISSOLVED SOLIDS (TDS)	-		548 mg/L		

Numerous non-detects (ND) were reported in the influent and effluent for VOCs, Semi-VOCs, and Pesticides/PCBs. Percentage removal rates were calculated for only those pollutants that were detected. Greater than removal rates were determined from detects in the influent and non-dectects in the effluent.

*Negative removal rate.

2013 YRWWTP BIOSOLIDS PRIORITY POLLUTANT METALS

DATE	PERCENT SOLIDS (%)	ANTIMONY		ARSENIC		BERYLLIUM		CADMIUM		CHROMIUM		COPPER		LEAD	
		Dry Weight mg/kg	Detection Limit	Dry Weight mg/kg	Detection Limit	Dry Weight mg/kg	Detection Limit	Dry Weight mg/kg	Detection Limit	Dry Weight mg/kg	Detection Limit	Dry Weight mg/kg	Detection Limit	Dry Weight mg/kg	Detection Limit
3/6/2012	24.5	1.29	1	0.785	2	0.228	0.5	1.95	0.1	22.6	0.2	260	2	79.7	2
6/4/2013	**20.0**	**0**	**1**	0.358	**2**	**1.20**	**0.5**	**1.38**	**0.1**	**20.1**	**0.2**	**368**	**2**	**50.1**	**2**
9/4/2013	19.7	0	1	6.55	2	1.19	0.5	1.60	0.1	43.1	0.2	353	2	95.4	2
10/8/2013	**19.2**	**1.24**	**1**	**5.59**	**2**	0.217	**0.5**	**1.30**	**0.1**	**44.1**	**0.2**	**294**	**2**	**53.8**	**2**
AVERAGE (mg/kg)		0.63		3.32		0.709		1.56		32.5		319		69.8	

DATE	PERCENT SOLIDS (%)	MERCURY		NICKEL		SELENIUM		SILVER		THALLIUM		ZINC	
		Dry Weight mg/kg	Detection Limit	Dry Weight mg/kg	Detection Limit	Dry Weight mg/kg	Detection Limit	Dry Weight mg/kg	Detection Limit	Dry Weight mg/kg	Detection Limit	Dry Weight mg/kg	Detection Limit
3/6/2011	24.5	0	0.9	21.4	1	6.88	3	4.26	1	0	0.5	835	2
6/4/2013	**20.0**	**0**	**0.9**	**9.92**	**1**	**3.44**	**3**	**3.51**	**1**	**0**	**0.5**	**982**	**2**
9/4/2013	19.7	0	0.9	14.0	1	0	3	4.81	1	0	0.5	1005	2
10/8/2013	**19.2**	**0**	**0.9**	**7.69**	**1**	0.193	**3**	**3.33**	**1**	**0**	**0.5**	**832**	**2**
AVERAGE (mg/kg)		0.044		13.3		2.63		3.98		0		914	

All metals were analyzed according to SM3030D and SM3113B, except mercury (SM3112B). For values reported below detection, zero was used when the parameter was not detected in another sample for the reporting period and one-half the detection was used when the parameter was detected in another sample for the reporting period (values shown in red).

2013 YRWWTP BIOSOLIDS ORGANIC PRIORITY POLLUTANTS

DATE 10/08/2013	PERCENT SOLIDS 19.4%
SEMI VOLATILE ORGANIC COMPOUNDS	Total conc., mg/kg
PHENOL	**6.800**
N-NITROSODIPHENYLAMINE	1.400
BIS(2-ETHYLHEXYL) PHTHALATE	**53.00**
INDENO[1,2,3-CD]PYRENE	1.100
GENERAL CHEMISTRY	Total conc., mg/kg
TOTAL PHENOLS	**<13**
TOTAL CYANIDE	<4.9

Numerous non-detects (ND) were reported in the biosolids for VOCs, Semi-VOCs, and Pesticides/PCBs. Those pollutants that were detected are shown.

CITY OF YAKIMA
WASTEWATER DIVISION
2220 East Viola
Yakima, Washington 98901
Phone: 575-6077 • Fax (509) 575-6116

March 28, 2013

Ian Laseke
Department of Ecology
Central Regional Office
15 W. Yakima Ave. Suite 200
Yakima, WA 98902

Dear Mr. Laseke,

Enclosed are the influent, effluent, and biosolid priority pollutant and organic priority pollutant analytical reports for the first calendar quarter of 2013.

These reports have been submitted to the Department of Ecology within forty-five (45) days of the end of the sampling period. Therefore, the report satisfies the requirements in § S3 A. of the City of Yakima's National Pollution Discharge Elimination System (NPDES) permit WA-002402-03, Sampling and Reporting Requirements.

If you have any questions, please call me at (509) 575-6133.

Sincerely,

Michael A Price

Mike Price
Process Control Supervisor

Yakima
All-America City
1994

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11720 North Creek Parkway North, Suite 400
Bothell, WA 98011
Phone: 425-686-1996
www.frontiergs.com

20 March 2013

Jennifer Key
City of Yakima
2220 E. Viola
Yakima, WA 98901

RE: NDPES Metals Monitoring 2012

Enclosed are the analytical results for samples received by Eurofins Frontier Global Sciences. All quality control measurements are within established control limits and there were no analytical difficulties encountered with the exception of those listed in the case narrative section of this report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Liz Siska

Liz Siska
Project Manager

eurofins | Frontier Global Sciences

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Bothell, WA 98011
Phone: 425-686-1996
www.frontiergs.com

ANALYTICAL REPORT FOR SAMPLES

Laboratory: Eurofins Frontier Global Sciences, Inc.
SDG:
Client: City of Yakima
Project: NDPES Metals Monitoring 2012

Sample ID	Lab ID	Matrix	Date Sampled	Date Received
Field Blank	1303133-01	Water	05-Mar-13 08:15	06-Mar-13 09:30
YRWWTP Influent	1303133-02	Water	05-Mar-13 08:45	06-Mar-13 09:30
YRWWTP Effluent	1303133-03	Water	05-Mar-13 08:30	06-Mar-13 09:30

Eurofins Frontier Global Sciences

Liz Siska

Liz Siska, Project Manager

The results in this report only 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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CASE NARRATIVE

SAMPLE RECEIPT

Two (2) water samples and one (1) field blank were received March 6th, 2013 at Eurofrins Frontier Global Sciences (EFGS). The samples were received intact, within a cooler at ambient temperature.

SAMPLE PREPARATION/ANALYSIS

Samples were prepared and analyzed for total mercury by cold vapor atomic fluorescence spectroscopy (CV-AFS) in accordance with EPA Method 1631E.

Samples were prepared and analyzed for trace metals by inductively coupled plasma mass spectroscopy (ICP-MS) in accordance with EPA Method 1638.

ANALYTICAL AND QUALITY CONTROL ISSUES

Sample YRWWTP Effluent has a higher concentration of Molyebebdenum than YRWWTP Influent, this was confirmed with re-analysis.

There were no analytical difficulties and all quality control analyses were within acceptable limits except as flagged and described in the following report.

Eurofins Frontier Global Sciences

Liz Siska, Project Manager

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CHAIN OF CUSTODY FORMS

Chain of Custody Record & Laboratory Analysis Request:
Air, Water, Sediments, Plant and Animal Tissue,
Hydrocarbon & Other Samples

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Page 1 of 1

1303133

Client: City of Yakima Wastewater	Contact: Jennifer Key		FGS PM:
Address: 2220 East Viola Yakima WA 98901	Phone: same Fax:		Date:
Project Name: NPDES Metals Monitoring	E-mail: same		TAT (business days): **20** (std) **15 10 5 4 3 2 24 hrs.** (For TAT < 10 days, contact PM. Surcharges apply for expedited TAT)
Report To: Jennifer Key	Contract/PO: 1385		Saturday delivery? ☐ Y ☐ N (If yes, please contact PM)
Address: same	Invoice To: YRWWTP		EDD ☐ Y ☐ N
Phone: 575 6133 Fax:	Address: 2220 East Viola Yakima, WA 98901		QA ☐ Standard ☐ High
E-mail: jkey@ci.yakima.wa.us	Phone: same Fax: 575 6116		
	E-mail: same		

No.	Engraved Bottle ID	Sample ID	# of Bottles	Matrix	Date & Time	Sampled By	Field Filtered (Y/N)	Field Preserved: HNO_3 HCl BrCl Other (%)	Analyses Requested: ICP-MS* Total metals	Hg-AFS Total Mercury	Comments
1	B-8452	Field Blank	1 PET6	W	3/5/13 0815	JK/CT	N	N/A	X		Total metals Analyte List: Copper, Molybdenum, Arsenic, Antimony, Chromium, Lead, Zinc, Thallium, Cadmium, Beryllium, Nickel, Selenium, Silver
2	B-8464	"	"	W	3/5/13 0815	JK/CT	N	N/A		X	
3	B-8467	YRWWTP Influent	"	WW	3/5/13 0845	JK/CT	N	N/A	X		
4	B-8469	"	"	WW	3/5/13 0845	JK/CT	N	N/A		X	
5	B-8476	YRWWTP Effluent	"	WW	3/5/13 0830	JK/CT	N	N/A	X		
6	B-8479	"	"	WW	3/5/13 0830	JK/CT	N	N/A		X	
7											
8											
9											
10											
11											
12											

Note Field Blank was poured into sample vessel.

For Laboratory Use Only		Matrix Codes:	Relinquished By:	Received By:	Received By:
COC Seal: yes ✓	Comments:	FW: Fresh Water WW: Waste Water SB: Sea and Brackish Water SS: Soil and Sediment TS: Plant and Animal Tissue HC: Hydrocarbons TR: Trap OT: Other	Jennifer Key	A Bath	
Cooler Temp: ambient			Name: Jennifer Key	Name: A. BATH	Name:
Carrier: FedEx			Organization: City of Yakima	Organization: EFGS	Organization:
VTSR: 0930			Date & Time: 3/5/13 0900	Date & Time: 3/6/13 0930	Date & Time:
# of Coolers: 1			Tracking number: 8709 8032 5046 via AMB 3/6/13		

Sample Disposal:
☐ Return (shipping fees may apply)
☒ Standard Disposal – 30 Days after report
☐ Retain for ___ weeks after report (storage fees may apply)

By signing, you declare that you agree with FGS' terms and conditions, and that you authorize FGS to perform the specified analyses.

Customer Approval: Jennifer Key Date: 3/5/13

Eurofins Frontier Global Sciences

Liz Siska

Liz Siska, Project Manager

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CHAIN OF CUSTODY FORMS

FGS Work Order: 1303133

Sample Receipt Checklist

Frontier Global Sciences

Client: City of Yakima Date & Time Received: 3/6/13 0930 Date Logged In: 3/7/13 Date Labeled: 3/7/13

Project: ____ Received By: AMB Logged By: CD Labeled By: CD

# of Coolers Received: 1 Samples Arrived By: ✓ Shipping Service ____ Courier ____ Hand ____ Other (Specify: ____)

Tracking/Airbill Number(s): 8709 8032 5046

Thermal Preservation: ✓ None (Ambient) ____ Loose Ice ____ Gel/Blue Ice ____ Other (Specify: ____) Thermal Preservation Required: Y (N)

Cooler Information:	Y/N	Comments
The coolers do not appear to be tampered with:	Y	
Custody Seals are present and intact:	N	not intact - See below AMB 3/6/13
Custody seals signed by:		signature not visible, part of seal missing. AMB 3/6/13

Thermometer ID: —	CF: —			
Cooler 1: °C	Cooler 4: °C	Cooler 7: °C	Cooler 10: °C	
Cooler 2: °C	Cooler 5: °C	Cooler 8: °C	Cooler 11: °C	
Cooler 3: °C	Cooler 6: °C	Cooler 9: °C	Cooler 12: °C	

Chain of Custody:	Y/N	Comments
Sample ID/Description:	Y	
Date/Time of collection:	Y	
Sampled by:	Y	
Preservation type:	N/A	
Requested analyses:	Y	
Required signatures:	Y	
Internal COC required:	N	

Sample Condition/Integrity:	Y/N	Comments
Sample containers intact:	Y	
Sample labels are present and legible:	Y	
Sample ID on container matches COC:	Y	
Correct sample containers used:	Y	
Samples received within holding times:	Y	
Sample volume sufficient for requested analyses:	Y	
Correct preservative used for requested analyses:	N/A	
pH of preserved samples verified and recorded:	N/A	

Client Contacted: ____ Date/Time: ____ Method: ____

Anomalies/Non-conformances (attach additional pages if needed):

2/3 of custody seal was missing/torn from cooler. Photo documentation made. Remainder of seal is attached to back of SRC. AMB 3/6/13
(The cooler was taped shut on either side by clear packing tape. It did not look damaged. AMB 3/6/13)

Discussion/Resolution:

FGS Sample Receipt Checklist Revision 2; 07/09/2012

Eurofins Frontier Global Sciences

Liz Siska

Liz Siska, Project Manager

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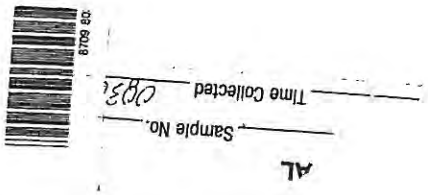
CHAIN OF CUSTODY FORMS



Eurofins Frontier Global Sciences

Liz Siska

Liz Siska, Project Manager

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ANALYTICAL RESULTS

Field Blank

Matrix: Water **Laboratory ID:** 1303133-01

Analyte	Result	MDL	MRL	Units	Dilution	Batch	Sequence	Analyzed	Method	Notes
Antimony	ND	-	0.020	µg/L	1	F303074	3C13003	03/12/13	EPA 1638	FB, U
Arsenic	ND	-	0.15	µg/L	1	F303074	3C13003	03/12/13	EPA 1638	FB, U
Beryllium	ND	-	0.060	µg/L	1	F303074	3C13003	03/12/13	EPA 1638	FB, U
Cadmium	ND	-	0.020	µg/L	1	F303074	3C13003	03/12/13	EPA 1638	FB, U
Chromium	ND	-	0.10	µg/L	1	F303074	3C13003	03/12/13	EPA 1638	FB, U
Copper	ND	-	0.10	µg/L	1	F303074	3C13003	03/12/13	EPA 1638	FB, U
Lead	ND	-	0.040	µg/L	1	F303074	3C13003	03/12/13	EPA 1638	FB, U
Mercury	ND	-	0.50	ng/L	1	F303072	3C12015	03/12/13	EPA 1631E	U
Molybdenum	ND	-	0.060	µg/L	1	F303108	3C18006	03/16/13	EPA 1638	U
Nickel	ND	-	0.10	µg/L	1	F303074	3C13003	03/12/13	EPA 1638	FB, U
Selenium	ND	-	0.60	µg/L	1	F303074	3C20005	03/19/13	EPA 1638	U
Silver	ND	-	0.020	µg/L	1	F303074	3C13003	03/12/13	EPA 1638	FB, U
Thallium	ND	-	0.010	µg/L	1	F303108	3C18006	03/16/13	EPA 1638	U
Zinc	ND	-	0.20	µg/L	1	F303074	3C13003	03/12/13	EPA 1638	FB, U

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Liz Siska

Liz Siska, Project Manager

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ANALYTICAL RESULTS

YRWWTP Influent

Matrix: Water **Laboratory ID:** 1303133-02

Analyte	Result	MDL	MRL	Units	Dilution	Batch	Sequence	Analyzed	Method	Notes
Antimony	ND	-	0.100	µg/L	5	F303074	3C13003	03/12/13	EPA 1638	R-05, U
Arsenic	**2.25**	-	0.75	µg/L	5	F303074	3C13003	03/12/13	EPA 1638	R-05
Beryllium	ND	-	0.300	µg/L	5	F303074	3C13003	03/12/13	EPA 1638	R-05, U
Cadmium	**0.106**	-	0.100	µg/L	5	F303074	3C13003	03/12/13	EPA 1638	R-05
Chromium	**2.68**	-	0.50	µg/L	5	F303074	3C13003	03/12/13	EPA 1638	R-05
Copper	**23.4**	-	0.50	µg/L	5	F303074	3C13003	03/12/13	EPA 1638	R-05
Lead	**2.93**	-	0.200	µg/L	5	F303074	3C13003	03/12/13	EPA 1638	R-05
Mercury	**63.7**	-	25.2	ng/L	50	F303072	3C12015	03/12/13	EPA 1631E	
Molybdenum	**0.892**	-	0.300	µg/L	5	F303108	3C20004	03/19/13	EPA 1638	
Nickel	**2.57**	-	0.50	µg/L	5	F303074	3C13003	03/12/13	EPA 1638	R-05
Selenium	ND	-	3.00	µg/L	5	F303074	3C20005	03/19/13	EPA 1638	U
Silver	ND	-	0.100	µg/L	5	F303074	3C13003	03/12/13	EPA 1638	R-05, U
Thallium	ND	-	0.050	µg/L	5	F303108	3C18006	03/16/13	EPA 1638	U
Zinc	**132**	-	1.00	µg/L	5	F303074	3C13003	03/12/13	EPA 1638	R-05

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ANALYTICAL RESULTS

YRWWTP Effluent

Matrix: Water **Laboratory ID:** 1303133-03

Analyte	Result	MDL	MRL	Units	Dilution	Batch	Sequence	Analyzed	Method	Notes
Antimony	**0.477**	-	0.100	µg/L	5	F303074	3C13003	03/13/13	EPA 1638	R-05
Arsenic	**2.10**	-	0.75	µg/L	5	F303074	3C13003	03/13/13	EPA 1638	R-05
Beryllium	ND	-	0.060	µg/L	1	F303074	3C14010	03/13/13	EPA 1638	U
Cadmium	**0.042**	-	0.020	µg/L	1	F303074	3C14010	03/13/13	EPA 1638	
Chromium	**0.89**	-	0.50	µg/L	5	F303074	3C13003	03/13/13	EPA 1638	R-05
Copper	**6.12**	-	0.50	µg/L	5	F303074	3C13003	03/13/13	EPA 1638	R-05
Lead	**0.649**	-	0.200	µg/L	5	F303074	3C13003	03/13/13	EPA 1638	R-05
Mercury	**4.77**	-	0.50	ng/L	1	F303072	3C12015	03/12/13	EPA 1631E	
Molybdenum	**1.68**	-	0.060	µg/L	1	F303108	3C20004	03/19/13	EPA 1638	
Nickel	**1.82**	-	0.50	µg/L	5	F303074	3C13003	03/13/13	EPA 1638	R-05
Selenium	**0.66**	-	0.60	µg/L	1	F303074	3C20005	03/19/13	EPA 1638	
Silver	**0.154**	-	0.100	µg/L	5	F303074	3C13003	03/13/13	EPA 1638	R-05
Thallium	ND	-	0.010	µg/L	1	F303108	3C18006	03/16/13	EPA 1638	U
Zinc	**65.5**	-	1.00	µg/L	5	F303074	3C13003	03/13/13	EPA 1638	R-05

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MATRIX DUPLICATES/TRIPLICATES

SOURCE: 1303133-03

Batch: F303072

Preparation: BrCl Oxidation

Sequence: 3C12015

Lab Number: F303072-DUP1

Analyte	Sample Concentration ng/L	Duplicate Concentration ng/L	MRL	% RPD	RPD Limit	Method	Notes
Mercury	4.77	4.77	0.50	0.0225	24	EPA 1631E	

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MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY AND RPD

SOURCE: 1303133-03

Batch: F303072 **Sequence:** 3C12015

Preparation: BrCl Oxidation **Lab Number:** F303072-MS/MSD1

Analyte	Sample Concentration (ng/L)	Spike Added (ng/L)	MS Concentration (ng/L)	MS % Recovery	Recovery Limits	Method	Notes
Mercury	4.77	20.400	22.54	87.1	71 - 125	EPA 1631E	

Analyte	Spike Added (ng/L)	MSD Concentration (ng/L)	MSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Mercury	20.400	23.79	93.2	5.40	71 - 125	24	EPA 1631E	

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MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY AND RPD

SOURCE: 1303163-02

Batch: F303072 **Sequence:** 3C12015

Preparation: BrCl Oxidation **Lab Number:** F303072-MS/MSD2

Analyte	Sample Concentration (ng/L)	Spike Added (ng/L)	MS Concentration (ng/L)	MS % Recovery	Recovery Limits	Method	Notes
Mercury	132.6	204.00	322.7	93.2	71 - 125	EPA 1631E	

Analyte	Spike Added (ng/L)	MSD Concentration (ng/L)	MSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Mercury	204.00	326.3	95.0	1.09	71 - 125	24	EPA 1631E	

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MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY AND RPD

SOURCE: 1303133-02

Batch: F303074 **Sequence:** 3C13003

Preparation: Closed Vessel Nitric Oven Digestion **Lab Number:** F303074-MS/MSD1

Analyte	Sample Concentration (µg/L)	Spike Added (µg/L)	MS Concentration (µg/L)	MS % Recovery	Recovery Limits	Method	Notes
Beryllium	ND	2.0300	1.833	90.3	75 - 125	EPA 1638	
Chromium	2.68	7.1050	9.16	91.2	85 - 115	EPA 1638	
Nickel	2.57	4.0600	6.18	88.9	68 - 134	EPA 1638	
Copper	23.41	4.0600	26.47	75.5	51 - 145	EPA 1638	
Zinc	131.8	10.150	137.4	55.5	46 - 146	EPA 1638	
Arsenic	2.25	15.225	16.03	90.5	85 - 115	EPA 1638	
Selenium	3.12	30.450	9.78	21.9	59 - 149	EPA 1638	QB-01, QM-07
Silver	ND	1.5225	0.229	15.0	74 - 119	EPA 1638	QM-05
Cadmium	0.106	0.81200	0.946	103	84 - 113	EPA 1638	
Antimony	0.037	0.81200	0.188	18.7	79 - 122	EPA 1638	QM-07
Lead	2.928	1.5225	4.299	90.0	72 - 143	EPA 1638	

Analyte	Spike Added (µg/L)	MSD Concentration (µg/L)	MSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Beryllium	2.0300	1.874	92.3	2.17	75 - 125	20	EPA 1638	
Chromium	7.1050	8.90	87.6	2.86	85 - 115	20	EPA 1638	
Nickel	4.0600	6.25	90.7	1.17	68 - 134	20	EPA 1638	
Copper	4.0600	26.66	80.0	0.694	51 - 145	20	EPA 1638	
Zinc	10.150	137.6	57.1	0.123	46 - 146	20	EPA 1638	
Arsenic	15.225	17.05	97.2	6.13	85 - 115	20	EPA 1638	
Selenium	30.450	9.21	20.0	6.03	59 - 149	20	EPA 1638	QB-01, QM-07
Silver	1.5225	0.198	13.0	14.3	74 - 119	20	EPA 1638	QM-05
Cadmium	0.81200	0.964	106	1.84	84 - 113	20	EPA 1638	
Antimony	0.81200	0.208	21.0	9.77	79 - 122	20	EPA 1638	QM-07
Lead	1.5225	4.299	90.1	0.0178	72 - 143	20	EPA 1638	

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MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY AND RPD

SOURCE: 1303135-01

Batch: F303074 **Sequence:** 3C13003

Preparation: Closed Vessel Nitric Oven Digestion **Lab Number:** F303074-MS/MSD2

Analyte	Sample Concentration (µg/L)	Spike Added (µg/L)	MS Concentration (µg/L)	MS % Recovery	Recovery Limits	Method	Notes
Beryllium	ND	2.0300	1.844	90.8	75 - 125	EPA 1638	
Chromium	0.20	7.1050	6.48	88.4	85 - 115	EPA 1638	
Nickel	2.35	4.0600	5.80	85.1	68 - 134	EPA 1638	
Copper	2.77	4.0600	6.68	96.3	51 - 145	EPA 1638	
Zinc	32.37	10.150	42.44	99.2	46 - 146	EPA 1638	
Arsenic	0.93	15.225	15.66	96.8	85 - 115	EPA 1638	
Selenium	2.34	30.450	32.84	100	59 - 149	EPA 1638	QB-01
Silver	0.032	1.5225	1.421	91.2	74 - 119	EPA 1638	
Cadmium	0.080	0.81200	0.958	108	84 - 113	EPA 1638	
Antimony	0.328	0.81200	1.094	94.3	79 - 122	EPA 1638	
Lead	0.384	1.5225	1.794	92.6	72 - 143	EPA 1638	

Analyte	Spike Added (µg/L)	MSD Concentration (µg/L)	MSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Beryllium	2.0300	1.920	94.6	4.06	75 - 125	20	EPA 1638	
Chromium	7.1050	6.31	86.0	2.68	85 - 115	20	EPA 1638	
Nickel	4.0600	5.81	85.3	0.129	68 - 134	20	EPA 1638	
Copper	4.0600	6.45	90.7	3.47	51 - 145	20	EPA 1638	
Zinc	10.150	41.50	89.9	2.25	46 - 146	20	EPA 1638	
Arsenic	15.225	15.74	97.3	0.569	85 - 115	20	EPA 1638	
Selenium	30.450	30.25	91.7	8.21	59 - 149	20	EPA 1638	QB-01
Silver	1.5225	1.397	89.6	1.71	74 - 119	20	EPA 1638	
Cadmium	0.81200	0.921	104	3.92	84 - 113	20	EPA 1638	
Antimony	0.81200	1.152	101	5.18	79 - 122	20	EPA 1638	
Lead	1.5225	1.845	95.9	2.79	72 - 143	20	EPA 1638	

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Liz Siska

Liz Siska, Project Manager

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MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY AND RPD

SOURCE: 1303133-02

Batch: F303074 **Sequence:** 3C13003

Preparation: Closed Vessel Nitric Oven Digestion **Lab Number:** F303074-MS/MSD3

Analyte	Sample Concentration (µg/L)	Spike Added (µg/L)	MS Concentration (µg/L)	MS % Recovery	Recovery Limits	Method	Notes
Beryllium	ND	5.0750	4.734	93.3	75 - 125	EPA 1638	AS
Chromium	2.68	101.50	95.33	91.3	85 - 115	EPA 1638	AS
Nickel	2.57	126.88	119.2	91.9	68 - 134	EPA 1638	AS
Copper	23.41	126.88	140.6	92.4	51 - 145	EPA 1638	AS
Zinc	131.8	253.75	376.2	96.3	46 - 146	EPA 1638	AS
Arsenic	2.25	101.50	99.98	96.3	85 - 115	EPA 1638	AS
Selenium	3.12	101.50	88.87	84.5	59 - 149	EPA 1638	AS, QB-01
Silver	ND	5.0750	2.957	58.3	74 - 119	EPA 1638	AS, QM-05
Cadmium	0.106	10.150	9.469	92.2	84 - 113	EPA 1638	AS
Antimony	0.037	5.0750	4.985	97.5	79 - 122	EPA 1638	AS
Lead	2.928	25.375	27.39	96.4	72 - 143	EPA 1638	AS

Analyte	Spike Added (µg/L)	MSD Concentration (µg/L)	MSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Beryllium	5.0750	4.728	93.2	0.112	75 - 125	20	EPA 1638	AS
Chromium	101.50	94.61	90.6	0.754	85 - 115	20	EPA 1638	AS
Nickel	126.88	118.1	91.0	0.910	68 - 134	20	EPA 1638	AS
Copper	126.88	140.2	92.1	0.300	51 - 145	20	EPA 1638	AS
Zinc	253.75	377.3	96.8	0.302	46 - 146	20	EPA 1638	AS
Arsenic	101.50	101.4	97.6	1.36	85 - 115	20	EPA 1638	AS
Selenium	101.50	90.16	85.8	1.43	59 - 149	20	EPA 1638	AS, QB-01
Silver	5.0750	3.071	60.5	3.80	74 - 119	20	EPA 1638	AS, QM-05
Cadmium	10.150	9.593	93.5	1.29	84 - 113	20	EPA 1638	AS
Antimony	5.0750	4.939	96.6	0.925	79 - 122	20	EPA 1638	AS
Lead	25.375	27.10	95.2	1.06	72 - 143	20	EPA 1638	AS

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MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY AND RPD

SOURCE: 1303135-01

Batch: F303074 **Sequence:** 3C13003

Preparation: Closed Vessel Nitric Oven Digestion **Lab Number:** F303074-MS/MSD4

Analyte	Sample Concentration (µg/L)	Spike Added (µg/L)	MS Concentration (µg/L)	MS % Recovery	Recovery Limits	Method	Notes
Beryllium	ND	5.0750	4.819	95.0	75 - 125	EPA 1638	AS
Chromium	0.20	101.50	91.19	89.6	85 - 115	EPA 1638	AS
Nickel	2.35	126.88	116.6	90.0	68 - 134	EPA 1638	AS
Copper	2.77	126.88	119.9	92.3	51 - 145	EPA 1638	AS
Zinc	32.37	253.75	281.4	98.1	46 - 146	EPA 1638	AS
Arsenic	0.93	101.50	101.0	98.6	85 - 115	EPA 1638	AS
Selenium	2.34	101.50	101.8	98.0	59 - 149	EPA 1638	AS, QB-01
Silver	0.032	5.0750	4.739	92.7	74 - 119	EPA 1638	AS
Cadmium	0.080	10.150	9.524	93.0	84 - 113	EPA 1638	AS
Antimony	0.328	5.0750	5.128	94.6	79 - 122	EPA 1638	AS
Lead	0.384	25.375	24.18	93.8	72 - 143	EPA 1638	AS

Analyte	Spike Added (µg/L)	MSD Concentration (µg/L)	MSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Beryllium	5.0750	4.919	96.9	2.05	75 - 125	20	EPA 1638	AS
Chromium	101.50	90.77	89.2	0.454	85 - 115	20	EPA 1638	AS
Nickel	126.88	117.3	90.6	0.640	68 - 134	20	EPA 1638	AS
Copper	126.88	120.9	93.1	0.855	51 - 145	20	EPA 1638	AS
Zinc	253.75	280.7	97.9	0.249	46 - 146	20	EPA 1638	AS
Arsenic	101.50	100.2	97.8	0.825	85 - 115	20	EPA 1638	AS
Selenium	101.50	101.9	98.1	0.0915	59 - 149	20	EPA 1638	AS, QB-01
Silver	5.0750	4.634	90.7	2.24	74 - 119	20	EPA 1638	AS
Cadmium	10.150	9.315	91.0	2.22	84 - 113	20	EPA 1638	AS
Antimony	5.0750	5.253	97.0	2.42	79 - 122	20	EPA 1638	AS
Lead	25.375	24.88	96.5	2.85	72 - 143	20	EPA 1638	AS

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MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY AND RPD

SOURCE: 1303133-02RE1

Batch: F303108 **Sequence:** 3C18006

Preparation: Closed Vessel Nitric Oven Digestion **Lab Number:** F303108-MS/MSD1

Analyte	Sample Concentration (µg/L)	Spike Added (µg/L)	MS Concentration (µg/L)	MS % Recovery	Recovery Limits	Method	Notes
Molybdenum	0.911	2.0300	2.636	85.0	80 - 115	EPA 1638	
Thallium	0.007	0.40600	0.407	98.4	64 - 137	EPA 1638	

Analyte	Spike Added (µg/L)	MSD Concentration (µg/L)	MSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Molybdenum	2.0300	2.704	88.3	2.53	80 - 115	20	EPA 1638	
Thallium	0.40600	0.417	101	2.45	64 - 137	20	EPA 1638	

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MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY AND RPD

SOURCE: 1303135-01RE1

Batch: F303108 **Sequence:** 3C18006

Preparation: Closed Vessel Nitric Oven Digestion **Lab Number:** F303108-MS/MSD2

Analyte	Sample Concentration (µg/L)	Spike Added (µg/L)	MS Concentration (µg/L)	MS % Recovery	Recovery Limits	Method	Notes
Molybdenum	3.014	2.0300	5.182	107	80 - 115	EPA 1638	
Thallium	ND	0.40600	0.413	102	64 - 137	EPA 1638	

Analyte	Spike Added (µg/L)	MSD Concentration (µg/L)	MSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Molybdenum	2.0300	5.061	101	2.36	80 - 115	20	EPA 1638	
Thallium	0.40600	0.407	100	1.67	64 - 137	20	EPA 1638	

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MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY AND RPD

SOURCE: 1303133-02RE1

Batch: F303108 **Sequence:** 3C18006

Preparation: Closed Vessel Nitric Oven Digestion **Lab Number:** F303108-MS/MSD3

Analyte	Sample Concentration (µg/L)	Spike Added (µg/L)	MS Concentration (µg/L)	MS % Recovery	Recovery Limits	Method	Notes
Molybdenum	0.911	50.250	50.13	98.0	80 - 115	EPA 1638	AS
Thallium	0.007	5.0250	4.990	99.2	64 - 137	EPA 1638	AS

Analyte	Spike Added (µg/L)	MSD Concentration (µg/L)	MSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Molybdenum	50.250	52.76	103	5.09	80 - 115	20	EPA 1638	AS
Thallium	5.0250	5.201	103	4.14	64 - 137	20	EPA 1638	AS

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MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY AND RPD

SOURCE: 1303135-01RE1

Batch: F303108 **Sequence:** 3C18006

Preparation: Closed Vessel Nitric Oven Digestion **Lab Number:** F303108-MS/MSD4

Analyte	Sample Concentration (µg/L)	Spike Added (µg/L)	MS Concentration (µg/L)	MS % Recovery	Recovery Limits	Method	Notes
Molybdenum	3.014	50.250	53.37	100	80 - 115	EPA 1638	AS
Thallium	ND	5.0250	5.111	102	64 - 137	EPA 1638	AS

Analyte	Spike Added (µg/L)	MSD Concentration (µg/L)	MSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Molybdenum	50.250	53.72	101	0.644	80 - 115	20	EPA 1638	AS
Thallium	5.0250	5.073	101	0.739	64 - 137	20	EPA 1638	AS

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LABORATORY CONTROL SAMPLE/ LABORATORY CONTROL SAMPLE DUPLICATE

RECOVERY AND RPD

Batch: F303072
Preparation: BrCl Oxidation
Sequence: 3C12015
Lab Number: F303072-BS/BSD1
LCS Source: LCS

Analyte	Spike Added (ng/L)	LCS Concentration (ng/L)	LCS % Recovery	Recovery Limits	Method	Notes
Mercury	15.679	15.88	101	77 - 123	EPA 1631E	

Analyte	Spike Added (ng/L)	LCSD Concentration (ng/L)	LCSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Mercury	15.679	15.96	102	0.480	77 - 123	24	EPA 1631E	

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Liz Siska, Project Manager

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Bothell, WA 98011
Phone: 425-686-1996
www.frontiergs.com

LABORATORY CONTROL SAMPLE/ LABORATORY CONTROL SAMPLE DUPLICATE

RECOVERY AND RPD

Batch: F303074

Preparation: Closed Vessel Nitric Oven Digestion

Sequence: 3C13003

Lab Number: F303074-BS/BSD1

LCS Source: Blank Spike

Analyte	Spike Added (µg/L)	LCS Concentration (µg/L)	LCS % Recovery	Recovery Limits	Method	Notes
Beryllium	2.0000	1.961	98.0	75 - 125	EPA 1638	
Chromium	7.0000	6.37	91.0	85 - 115	EPA 1638	
Nickel	4.0000	3.83	95.8	68 - 134	EPA 1638	
Copper	4.0000	3.87	96.7	51 - 145	EPA 1638	
Zinc	10.000	9.96	99.6	46 - 146	EPA 1638	
Arsenic	15.000	14.36	95.7	85 - 115	EPA 1638	
Selenium	30.000	29.04	96.8	59 - 149	EPA 1638	
Silver	1.5000	1.445	96.3	74 - 119	EPA 1638	
Cadmium	0.80000	0.888	111	84 - 113	EPA 1638	
Antimony	0.80000	0.776	97.0	79 - 122	EPA 1638	
Lead	1.5000	1.439	95.9	72 - 143	EPA 1638	

Analyte	Spike Added (µg/L)	LCSD Concentration (µg/L)	LCSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Beryllium	2.0000	1.986	99.3	1.26	75 - 125	20	EPA 1638	
Chromium	7.0000	6.39	91.3	0.301	85 - 115	20	EPA 1638	
Nickel	4.0000	3.83	95.8	0.0275	68 - 134	20	EPA 1638	
Copper	4.0000	3.87	96.8	0.117	51 - 145	20	EPA 1638	
Zinc	10.000	9.88	98.8	0.821	46 - 146	20	EPA 1638	
Arsenic	15.000	14.26	95.0	0.730	85 - 115	20	EPA 1638	
Selenium	30.000	29.76	99.2	2.44	59 - 149	20	EPA 1638	
Silver	1.5000	1.449	96.6	0.300	74 - 119	20	EPA 1638	
Cadmium	0.80000	0.899	112	1.15	84 - 113	20	EPA 1638	
Antimony	0.80000	0.794	99.2	2.28	79 - 122	20	EPA 1638	
Lead	1.5000	1.429	95.3	0.691	72 - 143	20	EPA 1638	

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Liz Siska

Liz Siska, Project Manager

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LABORATORY CONTROL SAMPLE/ LABORATORY CONTROL SAMPLE DUPLICATE

RECOVERY AND RPD

Batch: F303108
Preparation: Closed Vessel Nitric Oven Digestion
Sequence: 3C18006
Lab Number: F303108-BS/BSD1
LCS Source: Blank Spike

Analyte	Spike Added (µg/L)	LCS Concentration (µg/L)	LCS % Recovery	Recovery Limits	Method	Notes
Molybdenum	2.0000	1.731	86.5	85 - 115	EPA 1638	
Thallium	0.40000	0.349	87.3	64 - 137	EPA 1638	

Analyte	Spike Added (µg/L)	LCSD Concentration (µg/L)	LCSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Molybdenum	2.0000	1.755	87.8	1.42	85 - 115	20	EPA 1638	
Thallium	0.40000	0.350	87.5	0.129	64 - 137	20	EPA 1638	

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Liz Siska

Liz Siska, Project Manager

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PREPARATION BLANKS

Instrument: Hg2600-2

Sequence: 3C12015

Preparation: BrCl Oxidation

Lab Sample ID	Analyte	Found	MDL	MRL	Units	Batch	Method	Notes
F303072-BLK1	Mercury	0.01	0.08	0.50	ng/L	F303072	EPA 1631E	U
F303072-BLK2	Mercury	-0.01	0.08	0.50	ng/L	F303072	EPA 1631E	U
F303072-BLK3	Mercury	-0.006	0.08	0.50	ng/L	F303072	EPA 1631E	U
F303072-BLK4	Mercury	0.01	0.08	0.50	ng/L	F303072	EPA 1631E	QB-04, U

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Liz Siska, Project Manager

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PREPARATION BLANKS

Instrument: ICPMS-6

Sequence: 3C13003

Preparation: Closed Vessel Nitric Oven Digestion

Lab Sample ID	Analyte	Found	MDL	MRL	Units	Batch	Method	Notes
F303074-BLK1	Beryllium	-0.003	0.006	0.060	µg/L	F303074	EPA 1638	U
F303074-BLK2	Beryllium	-0.004	0.006	0.060	µg/L	F303074	EPA 1638	U
F303074-BLK1	Chromium	0.003	0.01	0.10	µg/L	F303074	EPA 1638	U
F303074-BLK2	Chromium	0.002	0.01	0.10	µg/L	F303074	EPA 1638	U
F303074-BLK1	Nickel	0.004	0.01	0.10	µg/L	F303074	EPA 1638	U
F303074-BLK2	Nickel	-0.0001	0.01	0.10	µg/L	F303074	EPA 1638	U
F303074-BLK1	Copper	0.002	0.01	0.10	µg/L	F303074	EPA 1638	U
F303074-BLK2	Copper	0.004	0.01	0.10	µg/L	F303074	EPA 1638	U
F303074-BLK1	Zinc	-0.04	0.03	0.20	µg/L	F303074	EPA 1638	U
F303074-BLK2	Zinc	-0.03	0.03	0.20	µg/L	F303074	EPA 1638	U
F303074-BLK1	Arsenic	0.09	0.04	0.15	µg/L	F303074	EPA 1638	U
F303074-BLK2	Arsenic	0.06	0.04	0.15	µg/L	F303074	EPA 1638	U
F303074-BLK1	Selenium	0.26	0.31	1.20	µg/L	F303074	EPA 1638	U
F303074-BLK2	Selenium	0.26	0.31	1.20	µg/L	F303074	EPA 1638	U
F303074-BLK1	Silver	0.001	0.002	0.020	µg/L	F303074	EPA 1638	U
F303074-BLK2	Silver	0.0004	0.002	0.020	µg/L	F303074	EPA 1638	U
F303074-BLK1	Cadmium	0.004	0.003	0.020	µg/L	F303074	EPA 1638	U
F303074-BLK2	Cadmium	0.006	0.003	0.020	µg/L	F303074	EPA 1638	U
F303074-BLK1	Antimony	0.0002	0.006	0.020	µg/L	F303074	EPA 1638	U
F303074-BLK2	Antimony	0.0005	0.006	0.020	µg/L	F303074	EPA 1638	U
F303074-BLK1	Lead	-0.0002	0.003	0.040	µg/L	F303074	EPA 1638	U
F303074-BLK2	Lead	-0.0004	0.003	0.040	µg/L	F303074	EPA 1638	U

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Liz Siska, Project Manager

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PREPARATION BLANKS

Instrument: ICPMS-6

Sequence: 3C14010

Preparation: Closed Vessel Nitric Oven Digestion

Lab Sample ID	Analyte	Found	MDL	MRL	Units	Batch	Method	Notes
F303074-BLK3	Beryllium	0.0005	0.006	0.060	µg/L	F303074	EPA 1638	U
F303074-BLK4	Beryllium	0.0001	0.006	0.060	µg/L	F303074	EPA 1638	U
F303074-BLK3	Copper	0.002	0.01	0.10	µg/L	F303074	EPA 1638	U
F303074-BLK4	Copper	-0.0005	0.01	0.10	µg/L	F303074	EPA 1638	U
F303074-BLK3	Zinc	-0.02	0.03	0.20	µg/L	F303074	EPA 1638	U
F303074-BLK4	Zinc	-0.02	0.03	0.20	µg/L	F303074	EPA 1638	U
F303074-BLK3	Cadmium	-0.006	0.003	0.020	µg/L	F303074	EPA 1638	U
F303074-BLK4	Cadmium	-0.004	0.003	0.020	µg/L	F303074	EPA 1638	U
F303074-BLK3	Lead	0.0001	0.003	0.040	µg/L	F303074	EPA 1638	U
F303074-BLK4	Lead	-0.0009	0.003	0.040	µg/L	F303074	EPA 1638	U

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PREPARATION BLANKS

Instrument: ICPMS-3

Sequence: 3C18006

Preparation: Closed Vessel Nitric Oven Digestion

Lab Sample ID	Analyte	Found	MDL	MRL	Units	Batch	Method	Notes
F303108-BLK1	Molybdenum	0.003	0.008	0.060	µg/L	F303108	EPA 1638	U
F303108-BLK2	Molybdenum	0.001	0.008	0.060	µg/L	F303108	EPA 1638	U
F303108-BLK1	Thallium	0.0007	0.0009	0.010	µg/L	F303108	EPA 1638	U
F303108-BLK2	Thallium	0.0006	0.0009	0.010	µg/L	F303108	EPA 1638	U

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Liz Siska

Liz Siska, Project Manager

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PREPARATION BLANKS

Instrument: ICPMS-3

Sequence: 3C20005

Preparation: Closed Vessel Nitric Oven Digestion

Lab Sample ID	Analyte	Found	MDL	MRL	Units	Batch	Method	Notes
F303074-BLK5	Selenium	0.06	0.31	0.60	µg/L	F303074	EPA 1638	U
F303074-BLK6	Selenium	0.03	0.31	0.60	µg/L	F303074	EPA 1638	U

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Liz Siska

Liz Siska, Project Manager

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Notes and Definitions

U	Analyte included in the analysis, but not detected
R-05	The sample was diluted due to the presence of high levels of non-target analytes or particulates resulting in elevated reporting limits.
QM-07	The spike recovery was outside control limits for the MS and/or MSD. The batch was accepted based on LCS and LCSD recoveries within control limits and, when analysis permits, acceptable AS/ASD.
QM-05	The spike recovery was outside acceptance limits for the MS/MSD and or AS/ASD due to matrix interference. The LCS and/or LCSD were within acceptance limits showing that the laboratory is in control and the data is acceptable.
QB-04	The blank was preserved to 2% BrCl rather than 1%. The control limit for blanks preserved to greater than 1% BrCl is the preservation percentage multiplied by the MRL.
QB-02	The method blank and/or initial/continuing calibration blank contains analyte at a concentration above the MRL. However, the sample concentrations are less than the MRL.
QB-01	The method blank and/or initial/continuing calibration blank contains analyte at a concentration above the MRL. However, the blank concentration(s) are less than 10% of the sample result.
AS	This MS and/or MSD is an analytical spike and/or an analytical spike duplicate.
DET	Analyte Detected
MDL	Minimum Detection Limit
MRL	Minimum Reporting Limit
ND	Analyte Not Detected at or above the reporting limit
wet	Sample results reported on a wet weight basis
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
RSD	Relative Standard Deviation

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Liz Siska

Liz Siska, Project Manager

YAKIMA REGIONAL WASTE[illegible]TER TREATMENT PLANT
ANALYTICAL RESULTS

Sample Origin: BIOSOLIDS PRIORITY POLLUTANT METALS
Sample Description: CENTRIFUGE CONVEYOR GRAB
Matrix: BIOSOLIDS
Date Received by Lab: 3/6/2013
Lab Sample No: 2013 Q1 BS PP

A) Pollutants	Analytical Method	Results (Dry wt.)	Units	Detection Limit	Date Analyzed
Antimony	SM3030D/SM3113B	1.29	mg/kg	1	03/12/13
Arsenic	SM3030D/SM3113B	ND	mg/kg	2	03/12/13
Beryllium	SM3030D/SM3113B	ND	mg/kg	0.5	03/21/13
Cadmium	SM3030D/SM3113B	1.95	mg/kg	0.1	03/12/13
Chromium	SM3030D/SM3113B	22.6	mg/kg	0.2	03/12/13
Copper	SM3030D/SM3113B	260	mg/kg	2	03/13/13
Lead	SM3030D/SM3113B	79.7	mg/kg	2	03/12/13
Mercury	SM3112B	ND	mg/kg	0.9	03/26/13
Nickel	SM3030D/SM3113B	21.4	mg/kg	1	03/12/13
Selenium	SM3030D/SM3113B	6.88	mg/kg	3	03/12/13
Silver	SM3030D/SM3113B	4.26	mg/kg	1	03/12/13
Thallium	SM3030D/SM3113B	ND	mg/kg	0.5	03/14/13
Zinc	SM3030D/SM3113B	835	mg/kg	2	03/13/13

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Chain of Custody Record & Laboratory Analysis Request: Air, Water, Sediments, Plant and Animal Tissue, Hydrocarbon & Other Samples

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Bothell, WA 98011
Phone: 425-686-1996
Fax: 425-686-3096
info@FrontierGS.com
http://www.FrontierGS.com

Client: City of Yakima Wastewater	Contact: Jennifer Key
Address: 2220 East Viola Yakima WA 98901	Phone: same Fax:
	E-mail: same
Project Name: NPDES Metals Monitoring	Contract/PO: 1385
Report To: Jennifer Key	Invoice To: YRWWTP
Address: same	Address: 2220 East Viola Yakima, WA 98901
Phone: 575 6133 Fax:	Phone: same Fax: 575 6116
E-mail: jkey@ci.yakima.wa.us	E-mail: same

No.	Engraved Bottle ID	Sample ID	# of Bottles	Matrix	Date & Time	Sampled By	Field Filtered (Y/N)	Field Preserved: HNO_3 HCl BrCl Other (%)	Analyses Requested: ICP-MS Total metals	Analyses Requested: Hg-AFS Total Mercury
1	B-8452	Field Blank	1 PETG	W	3/5/13 0815	JW/CT	N	N/A	X	
2	B-8464	"	"	W	3/5/13 0815	JW/CT	N	N/A		X
3	B-8467	YRWWTP Influent	"	WW	3/5/13 0845	JW/CT	N	N/A	X	
4	B-8469	"	"	WW	3/5/13 0845	JW/CT	N	N/A		X
5	B-8476	YRWWTP Effluent	"	WW	3/5/13 0836	JW/CT	N	N/A	X	
6	B-8479	"	"	WW	3/5/13 0836	JW/CT	N	N/A		X
7										
8										
9										
10										
11										
12										

FGS PM:
Date:
TAT (business days): **20** (std) **15 10 5 4 3 2 24 hrs.**
(For TAT < 10 days, contact PM. Surcharges apply for expedited TAT)
Saturday delivery? ☐ Y ☐ N
(If yes, please contact PM)
EDD ☐ Y ☐ N
QA ☐ Standard ☐ High

Comments

Total Metals Analyte List:
Copper
Molybdenum
Arsenic
Antimony
Chromium
Lead
Zinc
Thallium
Cadmium
Beryllium
Nickel
Selenium
Silver

Note: Field Blank was poured into sampling vessel.

For Laboratory Use Only

COC Seal:	Comments:
Cooler Temp:	
Carrier:	
VTSR:	
# of Coolers:	

Matrix Codes:
FW: Fresh Water
WW: Waste Water
SB: Sea and Brackish Water
SS: Soil and Sediment
TS: Plant and Animal Tissue
HC: Hydrocarbons
TR: Trap
OT: Other

Relinquished By:	Received By:	Received By:
Jennifer Key		
Name: Jennifer Key	Name:	Name:
Organization: City of Yakima	Organization:	Organization:
Date & Time: 3/5/13 0900	Date & Time:	Date & Time:

Tracking number: 8709 8032 5046

Sample Disposal:
☐ Return (shipping fees may apply)
☒ Standard Disposal – 30 Days after report
☐ Retain for ___ weeks after report (storage fees may apply)

By signing, you declare that you agree with FGS' terms and conditions, and that you authorize FGS to perform the specified analyses.

Customer Approval: Jennifer Key Date: 3/5/13

CITY OF YAKIMA
WASTEWATER DIVISION
2220 East Viola
Yakima, Washington 98901
Phone: 575-6077 • Fax (509) 575-6116

July 24, 2013

Ian Laseke
Department of Ecology
Central Regional Office
15 W. Yakima Ave. Suite 200
Yakima, WA 98902

Dear Mr. Laseke,

Enclosed are the influent, effluent, and biosolid priority pollutant analytical reports for the second calendar quarter of 2013.

These reports have been submitted to the Department of Ecology within forty-five (45) days of the end of the sampling period. Therefore, the report satisfies the requirements in § S3 A. of the City of Yakima's National Pollution Discharge Elimination System (NPDES) permit WA-002402-03, Sampling and Reporting Requirements.

If you have any questions, please call me at (509) 575-6133.

Sincerely,

Michael A Price

Mike Price
Process Control Supervisor

Yakima
All-America City
1994

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Bothell, WA 98011
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12 July 2013

Jennifer Key
City of Yakima
2220 E. Viola
Yakima, WA 98901

RE: NDPES Metals Monitoring 2012

Enclosed are the analytical results for samples received by Eurofins Frontier Global Sciences. All quality control measurements are within established control limits and there were no analytical difficulties encountered with the exception of those listed in the case narrative section of this report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Liz Siska

Liz Siska
Project Manager

eurofins | Frontier Global Sciences

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Bothell, WA 98011
Phone: 425-686-1996
www.frontiergs.cor

ANALYTICAL REPORT FOR SAMPLES

Laboratory: Eurofins Frontier Global Sciences, Inc.
SDG:
Client: City of Yakima
Project: NDPES Metals Monitoring 2012

Sample ID	Lab ID	Matrix	Date Sampled	Date Received
Field Blank	1306088-01	Water	04-Jun-13 08:15	05-Jun-13 09:30
YRWWTP Influent	1306088-02	Water	04-Jun-13 08:45	05-Jun-13 09:30
YRWWTP Effluent	1306088-03	Water	04-Jun-13 08:30	05-Jun-13 09:30

Eurofins Frontier Global Sciences

Liz Siska

Liz Siska, Project Manager

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CASE NARRATIVE

SAMPLE RECEIPT

Two (2) water samples and one (1) field blank were received June 5th, 2013 at Eurofrins Frontier Global Sciences (EFGS). The samples were received intact, within a cooler at ambient temperature.

SAMPLE PREPARATION/ANALYSIS

Samples were prepared and analyzed for total mercury by cold vapor atomic fluorescence spectroscopy (CV-AFS) in accordance with EPA Method 1631E.

Samples were prepared and analyzed for trace metals by inductively coupled plasma mass spectroscopy (ICP-MS) in accordance with EPA Method 1638.

ANALYTICAL AND QUALITY CONTROL ISSUES

Sample YRWWTP Effluent has a higher concentration of Molyebebdenum than YRWWTP Influent, this was confirmed with re-analysis.

There were no analytical difficulties and all quality control analyses were within acceptable limits except as flagged and described in the following report.

Eurofins Frontier Global Sciences

Liz Siska

Liz Siska, Project Manager

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CHAIN OF CUSTODY FORMS

EFGS Work Order: 1306088

Sample Receipt Checklist

Eurofins Frontier Global Sciences

Client: City of Yakima Date & Time Received: 6/5/13 1930 Date Logged In: 6.5.13 Date Labeled: 6/6/13

Project: _____ Received By: AMB Logged By: OB Labeled By: AF

# of Coolers Received: 1 Samples Arrived By: ✓ Shipping Service ____ Courier ____ Hand ____ Other (Specify: _____)

Tracking/Airbill #: 8709 8032 5057

Coolant: ☒ None/Ambient ☐ Loose Ice ☐ Gel Ice ☐ Dry Ice

Coolant Required: Y /(N) Temp Blank Used: Y/(N) for Cooler(s): —

Cooler Information:	Y/N/NA	Comments
The coolers do not appear to be tampered with:	Y	
Custody Seals are present and intact:	N/A	
Custody seals signed by:	N/A	

TID: —	CF: —	°C	Date/time: —	By: —
Cooler 1: °C	w/ CF: °C		Cooler 4: °C	w/ CF: °C
Cooler 2: °C	w/ CF: °C		Cooler 5: °C	w/ CF: °C
Cooler 3: °C	w/ CF: °C		Cooler 6: °C	w/ CF: °C

Chain of Custody:	Y/N/NA	Comments
Sample ID/Description:	Y	
Date and time of collection:	Y	
Sampled by:	Y	
Preservation type:	NA	
Requested analyses:	Y	
Required signatures:	N	
Internal COC required:	N	

Sample Condition/Integrity:	Y/N/NA	Comments
Sample containers intact/present:	Y	
Sample labels are present and legible:	Y	
Sample ID on container/bag matches COC:	Y	
Correct sample containers used:	Y	
Samples received within holding times:	Y	
Sample volume sufficient for requested analyses:	Y	
Correct preservative used for requested analyses:	N/A	
pH of preserved samples verified and recorded:	N/A	

Anomalies/Non-conformances (attach additional pages if needed):

Discussion/Resolution: Client Contacted: _____ Date/Time: _____ Method: _____

EFGS Sample Receipt Checklist Revision 3; 03/15/2013

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CHAIN OF CUSTODY FORMS

1306088

Chain of Custody Record & Laboratory Analysis Request:
Air, Water, Sediments, Plant and Animal Tissue,
Hydrocarbon & Other Samples

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Page 1 of 1

Client: City of Yakima Wastewater	Contact: Jennifer Key
Address: 2220 East Viola Yakima, WA 98901	Phone: same Fax: E-mail: same
Project Name: NPDES Metals Monitoring	Contract/PO: 1385
Report To: Jennifer Key	Invoice To: Teri Stine
Address: same	Address: 2220 East Viola Yakima, WA 98901
Phone: 575-6133 Fax:	Phone: Fax: 575-6116
E-mail: jkey@ci.yakima.wa.us	E-mail: tstine@ci.yakima.wa.us

No.	Engraved Bottle ID	Sample ID	# of Bottles	Matrix	Date & Time	Sampled By	Field Filtered (Y/N)	Field Preserved: HNO_3 HCl BrCl Other (%)	Analyses Requested: ICP-MS* Total Metals	Hg-AFS Total Mercury	EFGS PM: / Date:
1	B-131205	Field Blank	1 PETG	W	6/4/13 0815	JK/CJ	N	N/A	X		TAT (business days): 20 (std) 15 10 5 4 3 2 24 hrs. (For TAT < 10 days, contact PM. Surcharges apply for expedited TAT)
2	B-131920	"	"	W	6/4/13 0815	JK/CJ	N	"		X	Saturday delivery? ☐ Y ☐N (If yes, please contact PM)
3	B-131927	YRWWTP Influent	"	WW	6/4/13 0845	JK/CJ	N	"	X		EDD ☐ Y ☐ N
4	B-131933	"	"	WW	6/4/13 0845	JK/CJ	N	"		X	QA ☐ Standard ☐ High
5	B-131934	YRWWTP Effluent	"	WW	6/4/13 0830	JK/CJ	N	"	X		Comments
6	B-131935	"	"	WW	6/4/13 0830	JK/CJ	N	"		X	*Total Metals Analyte List: Antimony, Arsenic, Beryllium, Cadmium, Chromium, Copper, Lead, Molybdenum, Nickel, Selenium, Silver, Thallium, Zinc. *Note: Field Blank poured into sampling vessel.*
7											
8											
9											
10											
11											
12											

For Laboratory Use Only		Matrix Codes:	Relinquished By: Jennifer Key	Received By:	Received By:
COC Seal: ✓ yes	Comments:	FW: Fresh Water WW: Waste Water SB: Sea and Brackish Water SS: Soil and Sediment TS: Plant and Animal Tissue HC: Hydrocarbons TR: Trap OT: Other	Name: Jennifer Key	Name: A. BAHM	Name:
Cooler Temp: ambient			Organization: City of Yakima	Organization: EFGS	Organization:
Carrier: FedEx			Date & Time: 6/4/13 0855	Date & Time: 6/5/13 0930	Date & Time:
VTSR: 0930			Tracking number: 8709 8032 5057		
# of Coolers: 1					

Sample Disposal:
☐ Return (shipping fees may apply)
☒ Standard Disposal – 30 Days after report
☐ Retain for ____ weeks after report (storage fees may apply)

By signing, you declare that you agree with EFGS' terms and conditions, and that you authorize EFGS to perform the specified analyses.

Customer Approval: Jennifer Key Date: 6/4/13

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Liz Siska

Liz Siska, Project Manager

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ANALYTICAL RESULTS

Field Blank

Matrix: Water **Laboratory ID:** 1306088-01

Analyte	Result	MDL	MRL	Units	Dilution	Batch	Sequence	Analyzed	Method	Notes
Antimony	ND	-	0.020	µg/L	1	F306206	3F26016	06/25/13	EPA 1638	U
Arsenic	ND	-	0.15	µg/L	1	F306206	3F26016	06/25/13	EPA 1638	QB-02, U
Beryllium	ND	-	0.060	µg/L	1	F306206	3F26016	06/25/13	EPA 1638	U
Cadmium	ND	-	0.020	µg/L	1	F306422	3G02013	06/28/13	EPA 1638	U
Chromium	ND	-	0.10	µg/L	1	F306206	3F26016	06/25/13	EPA 1638	QB-02, U
Copper	ND	-	0.10	µg/L	1	F306206	3F26016	06/25/13	EPA 1638	U
Lead	ND	-	0.040	µg/L	1	F306206	3F26016	06/25/13	EPA 1638	U
Mercury	ND	-	0.50	ng/L	1	F306174	3F12010	06/12/13	EPA 1631E	U
Molybdenum	**0.071**	-	0.060	µg/L	1	F306206	3F26016	06/25/13	EPA 1638	
Nickel	ND	-	0.10	µg/L	1	F306206	3F26016	06/25/13	EPA 1638	U
Selenium	ND	-	0.60	µg/L	1	F306422	3G12001	07/11/13	EPA 1638	U
Silver	ND	-	0.020	µg/L	1	F306206	3F26016	06/25/13	EPA 1638	U
Thallium	ND	-	0.010	µg/L	1	F306206	3F26016	06/25/13	EPA 1638	U
Zinc	ND	-	0.20	µg/L	1	F306206	3F26016	06/25/13	EPA 1638	U

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ANALYTICAL RESULTS

YRWWTP Effluent

Matrix: Water **Laboratory ID:** 1306088-03

Analyte	Result	MDL	MRL	Units	Dilution	Batch	Sequence	Analyzed	Method	Notes
Antimony	**0.409**	-	0.020	µg/L	1	F306206	3F26016	06/25/13	EPA 1638	
Arsenic	**1.24**	-	0.15	µg/L	1	F307031	3G12001	07/11/13	EPA 1638	
Beryllium	ND	-	0.060	µg/L	1	F306206	3F26016	06/25/13	EPA 1638	U
Cadmium	**0.047**	-	0.020	µg/L	1	F306422	3G02013	06/28/13	EPA 1638	
Chromium	**0.67**	-	0.10	µg/L	1	F306206	3G03010	06/28/13	EPA 1638	
Copper	**5.97**	-	0.10	µg/L	1	F306206	3F26016	06/25/13	EPA 1638	
Lead	**0.641**	-	0.040	µg/L	1	F306206	3F26016	06/25/13	EPA 1638	
Mercury	**3.71**	-	0.50	ng/L	1	F306174	3F12010	06/12/13	EPA 1631E	
Molybdenum	**2.23**	-	0.060	µg/L	1	F306206	3F26016	06/25/13	EPA 1638	
Nickel	**1.38**	-	0.10	µg/L	1	F306206	3F26016	06/25/13	EPA 1638	
Selenium	**0.80**	-	0.60	µg/L	1	F306422	3G12001	07/11/13	EPA 1638	
Silver	**0.025**	-	0.020	µg/L	1	F306206	3F26016	06/25/13	EPA 1638	
Thallium	ND	-	0.010	µg/L	1	F306206	3F26016	06/25/13	EPA 1638	U
Zinc	**61.8**	-	0.20	µg/L	1	F306206	3F26016	06/25/13	EPA 1638	

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ANALYTICAL RESULTS

YRWWTP Influent

Matrix: Water **Laboratory ID:** 1306088-02

Analyte	Result	MDL	MRL	Units	Dilution	Batch	Sequence	Analyzed	Method	Notes
Antimony	**0.045**	-	0.040	µg/L	2	F306206	3F26016	06/25/13	EPA 1638	
Arsenic	**1.46**	-	0.30	µg/L	2	F307031	3G12001	07/11/13	EPA 1638	
Beryllium	ND	-	0.120	µg/L	2	F306206	3F26016	06/25/13	EPA 1638	U
Cadmium	**0.097**	-	0.040	µg/L	2	F306422	3G02013	06/28/13	EPA 1638	
Chromium	**2.09**	-	0.20	µg/L	2	F306206	3F26016	06/25/13	EPA 1638	QB-01
Copper	**24.0**	-	0.20	µg/L	2	F306206	3F26016	06/25/13	EPA 1638	
Lead	**3.19**	-	0.080	µg/L	2	F306206	3F26016	06/25/13	EPA 1638	
Mercury	**57.6**	-	10.1	ng/L	20	F306174	3F12010	06/12/13	EPA 1631E	
Molybdenum	**0.827**	-	0.120	µg/L	2	F306206	3F26016	06/25/13	EPA 1638	
Nickel	**2.31**	-	0.20	µg/L	2	F306206	3F26016	06/25/13	EPA 1638	
Selenium	**2.16**	-	1.20	µg/L	2	F306422	3G12001	07/11/13	EPA 1638	
Silver	ND	-	0.040	µg/L	2	F306206	3F26016	06/25/13	EPA 1638	U
Thallium	ND	-	0.020	µg/L	2	F306206	3F26016	06/25/13	EPA 1638	U
Zinc	**111**	-	0.40	µg/L	2	F306206	3F26016	06/25/13	EPA 1638	

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MATRIX DUPLICATES/TRIPLICATES

SOURCE: 1305485-11

Batch: F306174

Sequence: 3F12010

Preparation: EPA 1631E BrCl Oxidation

Lab Number: F306174-DUP1

Analyte	Sample Concentration ng/L	Duplicate Concentration ng/L	MRL	% RPD	RPD Limit	Method	Notes
Mercury	3.93	3.96	0.50	0.629	24	EPA 1631E	

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MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY AND RPD

SOURCE: 1305485-09

Batch: F306174 **Sequence:** 3F1201O

Preparation: EPA 1631E BrCl Oxidation **Lab Number:** F306174-MS/MSD1

Analyte	Sample Concentration (ng/L)	Spike Added (ng/L)	MS Concentration (ng/L)	MS % Recovery	Recovery Limits	Method	Notes
Mercury	9.79	20.400	30.52	102	71 - 125	EPA 1631E	

Analyte	Spike Added (ng/L)	MSD Concentration (ng/L)	MSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Mercury	20.400	27.75	88.0	9.52	71 - 125	24	EPA 1631E	

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MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY AND RPD

SOURCE: 1306092-01RE1

Batch: F306206 **Sequence:** 3F26016

Preparation: EFGS-052 Closed Vessel Nitric Oven Digestion **Lab Number:** F306206-MS/MSD5

Analyte	Sample Concentration (µg/L)	Spike Added (µg/L)	MS Concentration (µg/L)	MS % Recovery	Recovery Limits	Method	Notes
Beryllium	ND	2.0300	ND		75 - 125	EPA 1638	R-05, QM-02, U
Chromium	ND	7.1050	ND		85 - 115	EPA 1638	QM-02, QB-02, R-05, U
Nickel	ND	4.0600	ND		68 - 134	EPA 1638	QM-02, R-05, U
Copper	ND	4.0600	ND		51 - 145	EPA 1638	R-05, QM-02, U
Zinc	ND	10.150	ND		46 - 146	EPA 1638	QB-02, QM-02, R-05, U
Arsenic	ND	15.225	ND		85 - 115	EPA 1638	QB-02, R-05, QM-02, U
Molybdenum	1134	2.0300	620.2	-25300	80 - 115	EPA 1638	QB-02, QM-02, R-05
Silver	473.0	1.5225	225.8	-16200	74 - 119	EPA 1638	QM-02, R-05
Antimony	ND	0.81200	ND		79 - 122	EPA 1638	QM-02, R-05, U
Thallium	365.9	0.40600	181.7	-45400	64 - 137	EPA 1638	QM-02, R-05
Lead	261.9	1.5225	ND	-17200	72 - 143	EPA 1638	QB-02, QM-02, R-05, U

Analyte	Spike Added (µg/L)	MSD Concentration (µg/L)	MSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Beryllium	2.0300	ND			75 - 125	20	EPA 1638	R-05, QM-02, U
Chromium	7.1050	ND			85 - 115	20	EPA 1638	QM-02, QB-02, R-05, U
Nickel	4.0600	ND			68 - 134	20	EPA 1638	R-05, QM-02, U
Copper	4.0600	ND			51 - 145	20	EPA 1638	QM-02, R-05, U

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MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY AND RPD

SOURCE: 1306092-01RE1

Batch: F306206 **Sequence:** 3F26016

Preparation: EFGS-052 Closed Vessel Nitric Oven Digestion **Lab Number:** F306206-MS/MSD5

Analyte	Spike Added (µg/L)	MSD Concentration (µg/L)	MSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Zinc	10.150	ND			46 - 146	20	EPA 1638	QB-02, QM-02, R-05, U
Arsenic	15.225	ND			85 - 115	20	EPA 1638	QB-02, R-05, QM-02, U
Molybdenum	2.0300	491.8	-31600	23.1	80 - 115	20	EPA 1638	QB-02, QM-02, R-05
Silver	1.5225	ND	-31100		74 - 119	20	EPA 1638	QM-02, R-05, U
Antimony	0.81200	ND			79 - 122	20	EPA 1638	QM-02, R-05, U
Thallium	0.40600	127.9	-58600	34.8	64 - 137	20	EPA 1638	QM-02 R-05, QR-08
Lead	1.5225	ND	-17200		72 - 143	20	EPA 1638	QB-02, QM-02, R-05, U

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MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY AND RPD

SOURCE: 1306110-01RE1

Batch: F306206 **Sequence:** 3F26016

Preparation: EFGS-052 Closed Vessel Nitric Oven Digestion **Lab Number:** F306206-MS/MSD6

Analyte	Sample Concentration (µg/L)	Spike Added (µg/L)	MS Concentration (µg/L)	MS % Recovery	Recovery Limits	Method	Notes
Beryllium	ND	2.0300	ND		75 - 125	EPA 1638	R-05,
Chromium	1292	7.1050	1751	6460	85 - 115	EPA 1638	QM-02, U
Nickel	2148	4.0600	1638	-12600	68 - 134	EPA 1638	QM-02, QB-02, R-05
Copper	1903	4.0600	1894	-212	51 - 145	EPA 1638	QM-02, R-05
Zinc	2275	10.150	ND	-22400	46 - 146	EPA 1638	QM-02,
Arsenic	ND	15.225	ND		85 - 115	EPA 1638	R-05, U QB-02, R-05,
Molybdenum	4242	2.0300	1689	-126000	80 - 115	EPA 1638	QM-02, U QM-02,
Silver	529.3	1.5225	280.1	-16400	74 - 119	EPA 1638	R-05, QB-02 QM-02, R-05
Antimony	ND	0.81200	ND		79 - 122	EPA 1638	QM-02,
Thallium	247.2	0.40600	143.1	-25600	64 - 137	EPA 1638	R-05, U QM-02, R-05
Lead	713.5	1.5225	569.4	-9470	72 - 143	EPA 1638	QM-02, R-05

Analyte	Spike Added (µg/L)	MSD Concentration (µg/L)	MSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Beryllium	2.0300	ND			75 - 125	20	EPA 1638	R-05,
Chromium	7.1050	1053	-3360	49.8	85 - 115	20	EPA 1638	QM-02, U QM-02,
Nickel	4.0600	635.4	-37300	88.2	68 - 134	20	EPA 1638	QB-02, R-05 QM-02, R-05
Copper	4.0600	3797	46700	66.9	51 - 145	20	EPA 1638	QM-02,
Zinc	10.150	11800	93900		46 - 146	20	EPA 1638	QR-08, R-05 QM-02, R-05
Arsenic	15.225	ND			85 - 115	20	EPA 1638	QM-02, QB-02, R-05, U
Molybdenum	2.0300	924.2	-163000	58.5	80 - 115	20	EPA 1638	QB-02, QM-02, R-05
Silver	1.5225	222.3	-20200	23.0	74 - 119	20	EPA 1638	QM-02, R-05, QR-08

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MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY AND RPD

SOURCE: 1306110-01RE1

Batch: F306206 **Sequence:** 3F26016

Preparation: EFGS-052 Closed Vessel Nitric Oven Digestion **Lab Number:** F306206-MS/MSD6

Analyte	Spike Added (µg/L)	MSD Concentration (µg/L)	MSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Antimony	0.81200	ND			79 - 122	20	EPA 1638	QM-02, R-05, U
Thallium	0.40600	116.7	-32100	20.3	64 - 137	20	EPA 1638	QM-02, R-05, QR-08
Lead	1.5225	263.9	-29500	73.3	72 - 143	20	EPA 1638	QM-02, R-05

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MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY AND RPD

SOURCE: 1306092-01RE1

Batch: F306206 **Sequence:** 3F26016

Preparation: EFGS-052 Closed Vessel Nitric Oven Digestion **Lab Number:** F306206-MS/MSD7

Analyte	Sample Concentration (µg/L)	Spike Added (µg/L)	MS Concentration (µg/L)	MS % Recovery	Recovery Limits	Method	Notes
Beryllium	ND	50750	50000	98.5	75 - 125	EPA 1638	AS, R-05
Chromium	ND	1015000	921200	90.8	85 - 115	EPA 1638	AS, QB-01, R-05
Nickel	ND	1268800	1182000	93.1	68 - 134	EPA 1638	AS, R-05
Copper	ND	1268800	1201000	94.6	51 - 145	EPA 1638	AS, R-05
Zinc	ND	2537500	2419000	95.3	46 - 146	EPA 1638	QB-01, AS, R-05
Arsenic	ND	1015000	954000	94.0	85 - 115	EPA 1638	QB-01, AS, R-05
Molybdenum	1134	507500	466500	91.7	80 - 115	EPA 1638	QB-01, AS, R-05
Silver	473.0	50750	48140	93.9	74 - 119	EPA 1638	AS, R-05
Antimony	ND	50750	49800	98.1	79 - 122	EPA 1638	R-05, AS
Thallium	365.9	50750	48900	95.6	64 - 137	EPA 1638	AS, R-05
Lead	261.9	253750	247100	97.3	72 - 143	EPA 1638	QB-01, AS, R-05

Analyte	Spike Added (µg/L)	MSD Concentration (µg/L)	MSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Beryllium	50750	48530	95.6	2.99	75 - 125	20	EPA 1638	R-05, AS
Chromium	1015000	936300	92.2	1.62	85 - 115	20	EPA 1638	AS, QB-01, R-05
Nickel	1268800	1200000	94.6	1.54	68 - 134	20	EPA 1638	AS, R-05
Copper	1268800	1223000	96.4	1.85	51 - 145	20	EPA 1638	R-05, AS
Zinc	2537500	2383000	93.9	1.50	46 - 146	20	EPA 1638	QB-01, AS, R-05
Arsenic	1015000	947000	93.3	0.739	85 - 115	20	EPA 1638	AS, QB-01, R-05
Molybdenum	507500	473100	93.0	1.40	80 - 115	20	EPA 1638	AS, QB-01, R-05
Silver	50750	49460	96.5	2.70	74 - 119	20	EPA 1638	AS, R-05
Antimony	50750	50200	98.9	0.794	79 - 122	20	EPA 1638	AS, R-05
Thallium	50750	49940	97.7	2.11	64 - 137	20	EPA 1638	AS, R-05
Lead	253750	248900	98.0	0.731	72 - 143	20	EPA 1638	AS, QB-01, R-05

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MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY AND RPD

SOURCE: 1306110-01RE1

Batch: F306206 **Sequence:** 3F26016

Preparation: EFGS-052 Closed Vessel Nitric Oven Digestion **Lab Number:** F306206-MS/MSD8

Analyte	Sample Concentration (µg/L)	Spike Added (µg/L)	MS Concentration (µg/L)	MS % Recovery	Recovery Limits	Method	Notes
Beryllium	ND	50750	51170	101	75 - 125	EPA 1638	AS, R-05
Chromium	1292	1015000	933300	91.8	85 - 115	EPA 1638	AS, QB-01, R-05
Nickel	2148	1268800	1169000	92.0	68 - 134	EPA 1638	R-05, AS
Copper	1903	1268800	1216000	95.7	51 - 145	EPA 1638	AS, R-05
Zinc	2275	2537500	2402000	94.6	46 - 146	EPA 1638	AS, R-05
Arsenic	ND	1015000	949500	93.5	85 - 115	EPA 1638	QB-01, AS, R-05
Molybdenum	4242	507500	468100	91.4	80 - 115	EPA 1638	QB-01, AS, R-05
Silver	529.3	50750	49770	97.0	74 - 119	EPA 1638	AS, R-05
Antimony	ND	50750	50020	98.6	79 - 122	EPA 1638	AS, R-05
Thallium	247.2	50750	48120	94.3	64 - 137	EPA 1638	AS, R-05
Lead	713.5	253750	241700	95.0	72 - 143	EPA 1638	AS, R-05

Analyte	Spike Added (µg/L)	MSD Concentration (µg/L)	MSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Beryllium	50750	49550	97.6	3.21	75 - 125	20	EPA 1638	AS, R-05
Chromium	1015000	956600	94.1	2.47	85 - 115	20	EPA 1638	AS, R-05, QB-01
Nickel	1268800	1208000	95.0	3.23	68 - 134	20	EPA 1638	AS, R-05
Copper	1268800	1237000	97.3	1.67	51 - 145	20	EPA 1638	AS, R-05
Zinc	2537500	2444000	96.2	1.72	46 - 146	20	EPA 1638	AS, R-05
Arsenic	1015000	957600	94.3	0.847	85 - 115	20	EPA 1638	QB-01, AS, R-05
Molybdenum	507500	472300	92.2	0.887	80 - 115	20	EPA 1638	QB-01, AS, R-05
Silver	50750	50200	97.9	0.859	74 - 119	20	EPA 1638	AS, R-05
Antimony	50750	49790	98.1	0.457	79 - 122	20	EPA 1638	AS, R-05
Thallium	50750	47130	92.4	2.08	64 - 137	20	EPA 1638	AS, R-05
Lead	253750	236400	92.9	2.22	72 - 143	20	EPA 1638	AS, R-05

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MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY AND RPD

SOURCE: 1306092-01RE2

Batch: F306422 **Sequence:** 3G02013

Preparation: EFGS-052 Closed Vessel Nitric Oven Digestion **Lab Number:** F306422-MS/MSD1

Analyte	Sample Concentration (µg/L)	Spike Added (µg/L)	MS Concentration (µg/L)	MS % Recovery	Recovery Limits	Method	Notes
Selenium	ND	30.450	ND		59 - 149	EPA 1638	QM-07, U
Cadmium	235.0	0.81200	ND	-28900	84 - 113	EPA 1638	QM-07, U

Analyte	Spike Added (µg/L)	MSD Concentration (µg/L)	MSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Selenium	30.450	ND			59 - 149	20	EPA 1638	QM-07, U
Cadmium	0.81200	ND	-28900		84 - 113	20	EPA 1638	QM-07, U

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MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY AND RPD

SOURCE: 1306110-01RE2

Batch: F306422 **Sequence:** 3G02013

Preparation: EFGS-052 Closed Vessel Nitric Oven Digestion **Lab Number:** F306422-MS/MSD2

Analyte	Sample Concentration (µg/L)	Spike Added (µg/L)	MS Concentration (µg/L)	MS % Recovery	Recovery Limits	Method	Notes
Selenium	ND	30.450	ND		59 - 149	EPA 1638	QM-07, U
Cadmium	392.3	0.81200	ND	-48300	84 - 113	EPA 1638	QM-07, U

Analyte	Spike Added (µg/L)	MSD Concentration (µg/L)	MSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Selenium	30.450	ND			59 - 149	20	EPA 1638	QM-07, U
Cadmium	0.81200	ND	-48300		84 - 113	20	EPA 1638	QM-07, U

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MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY AND RPD

SOURCE: 1306092-01RE2

Batch: F306422 **Sequence:** 3G02013

Preparation: EFGS-052 Closed Vessel Nitric Oven Digestion **Lab Number:** F306422-MS/MSD3

Analyte	Sample Concentration (µg/L)	Spike Added (µg/L)	MS Concentration (µg/L)	MS % Recovery	Recovery Limits	Method	Notes
Selenium	ND	1015000	969800	95.5	59 - 149	EPA 1638	AS
Cadmium	235.0	101500	99730	98.0	84 - 113	EPA 1638	AS

Analyte	Spike Added (µg/L)	MSD Concentration (µg/L)	MSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Selenium	1015000	948700	93.5	2.20	59 - 149	20	EPA 1638	AS
Cadmium	101500	101700	99.9	1.94	84 - 113	20	EPA 1638	AS

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MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY AND RPD

SOURCE: 1306110-01RE2

Batch: F306422 **Sequence:** 3G02013

Preparation: EFGS-052 Closed Vessel Nitric Oven Digestion **Lab Number:** F306422-MS/MSD4

Analyte	Sample Concentration (µg/L)	Spike Added (µg/L)	MS Concentration (µg/L)	MS % Recovery	Recovery Limits	Method	Notes
Selenium	ND	1015000	921200	90.8	59 - 149	EPA 1638	AS
Cadmium	392.3	101500	102000	100	84 - 113	EPA 1638	AS

Analyte	Spike Added (µg/L)	MSD Concentration (µg/L)	MSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Selenium	1015000	992700	97.8	7.48	59 - 149	20	EPA 1638	AS
Cadmium	101500	100800	98.9	1.21	84 - 113	20	EPA 1638	AS

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MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY AND RPD

SOURCE: 1306088-02RE3

Batch: F307031 **Sequence:** 3G12001

Preparation: EFGS-052 Closed Vessel Nitric Oven Digestion **Lab Number:** F307031-MS/MSD1

Analyte	Sample Concentration (µg/L)	Spike Added (µg/L)	MS Concentration (µg/L)	MS % Recovery	Recovery Limits	Method	Notes
Arsenic	1.46	15.225	16.85	101	85 - 115	EPA 1638	

Analyte	Spike Added (µg/L)	MSD Concentration (µg/L)	MSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Arsenic	15.225	15.48	92.1	8.48	85 - 115	20	EPA 1638	

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MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY AND RPD

SOURCE: 1306088-02RE3

Batch: F307031 **Sequence:** 3G12001

Preparation: EFGS-052 Closed Vessel Nitric Oven Digestion **Lab Number:** F307031-MS/MSD2

Analyte	Sample Concentration (µg/L)	Spike Added (µg/L)	MS Concentration (µg/L)	MS % Recovery	Recovery Limits	Method	Notes
Arsenic	1.46	101.50	104.3	101	85 - 115	EPA 1638	

Analyte	Spike Added (µg/L)	MSD Concentration (µg/L)	MSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Arsenic	101.50	108.9	106	4.36	85 - 115	20	EPA 1638	

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LABORATORY CONTROL SAMPLE/ LABORATORY CONTROL SAMPLE DUPLICATE

RECOVERY AND RPD

Batch: F306174
Preparation: EPA 1631E BrCl Oxidation
Sequence: 3F12010
Lab Number: F306174-BS/BSD1
LCS Source: Nist 1641d

Analyte	Spike Added (ng/L)	LCS Concentration (ng/L)	LCS % Recovery	Recovery Limits	Method	Notes
Mercury	15.679	15.80	101	77 - 123	EPA 1631E	

Analyte	Spike Added (ng/L)	LCSD Concentration (ng/L)	LCSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Mercury	15.679	14.72	93.9	7.11	77 - 123	24	EPA 1631E	

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LABORATORY CONTROL SAMPLE/ LABORATORY CONTROL SAMPLE DUPLICATE

RECOVERY AND RPD

Batch: F306206 **Sequence:** 3F26016

Preparation: EFGS-052 Closed Vessel Nitric Oven Digestion **Lab Number:** F306206-BS/BSD1

LCS Source: Blank Spike

Analyte	Spike Added (µg/L)	LCS Concentration (µg/L)	LCS % Recovery	Recovery Limits	Method	Notes
Beryllium	2.0000	2.037	102	75 - 125	EPA 1638	
Chromium	7.0000	7.57	108	85 - 115	EPA 1638	QB-01
Nickel	4.0000	4.49	112	68 - 134	EPA 1638	
Copper	4.0000	4.62	116	51 - 145	EPA 1638	
Zinc	10.000	11.02	110	46 - 146	EPA 1638	
Arsenic	15.000	15.54	104	85 - 115	EPA 1638	QB-01
Molybdenum	2.0000	1.858	92.9	85 - 115	EPA 1638	QB-01
Silver	1.5000	1.466	97.7	74 - 119	EPA 1638	
Antimony	0.80000	0.794	99.3	79 - 122	EPA 1638	
Thallium	0.40000	0.359	89.7	64 - 137	EPA 1638	
Lead	1.5000	1.419	94.6	72 - 143	EPA 1638	

Analyte	Spike Added (µg/L)	LCSD Concentration (µg/L)	LCSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Beryllium	2.0000	2.077	104	1.95	75 - 125	20	EPA 1638	
Chromium	7.0000	7.59	108	0.238	85 - 115	20	EPA 1638	QB-01
Nickel	4.0000	4.39	110	2.38	68 - 134	20	EPA 1638	
Copper	4.0000	4.45	111	3.88	51 - 145	20	EPA 1638	
Zinc	10.000	10.56	106	4.25	46 - 146	20	EPA 1638	
Arsenic	15.000	14.79	98.6	4.91	85 - 115	20	EPA 1638	QB-01
Molybdenum	2.0000	1.871	93.5	0.674	85 - 115	20	EPA 1638	QB-01
Silver	1.5000	1.502	100	2.41	74 - 119	20	EPA 1638	
Antimony	0.80000	0.793	99.2	0.0836	79 - 122	20	EPA 1638	
Thallium	0.40000	0.371	92.7	3.26	64 - 137	20	EPA 1638	
Lead	1.5000	1.396	93.0	1.67	72 - 143	20	EPA 1638	

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LABORATORY CONTROL SAMPLE/ LABORATORY CONTROL SAMPLE DUPLICATE

RECOVERY AND RPD

Batch: F306422
Sequence: 3G02013
Preparation: EFGS-052 Closed Vessel Nitric Oven Digestion
Lab Number: F306422-BS/BSD1
LCS Source: Blk Spk

Analyte	Spike Added (µg/L)	LCS Concentration (µg/L)	LCS % Recovery	Recovery Limits	Method	Notes
Selenium	30.000	30.79	103	59 - 149	EPA 1638	
Cadmium	0.80000	0.842	105	84 - 113	EPA 1638	

Analyte	Spike Added (µg/L)	LCSD Concentration (µg/L)	LCSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Selenium	30.000	30.85	103	0.181	59 - 149	20	EPA 1638	
Cadmium	0.80000	0.761	95.2	10.1	84 - 113	20	EPA 1638	

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LABORATORY CONTROL SAMPLE/ LABORATORY CONTROL SAMPLE DUPLICATE

RECOVERY AND RPD

Batch: F307031 **Sequence:** 3G12001

Preparation: EFGS-052 Closed Vessel Nitric Oven Digestion **Lab Number:** F307031-BS/BSD1

LCS Source: Blank Spike

Analyte	Spike Added (µg/L)	LCS Concentration (µg/L)	LCS % Recovery	Recovery Limits	Method	Notes
Arsenic	15.000	14.61	97.4	85 - 115	EPA 1638	

Analyte	Spike Added (µg/L)	LCSD Concentration (µg/L)	LCSD % Recovery	% RPD	Recovery Limits	RPD Limit	Method	Notes
Arsenic	15.000	14.49	96.6	0.785	85 - 115	20	EPA 1638	

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PREPARATION BLANKS

Instrument: Hg2600-2

Sequence: 3F12010

Preparation: EPA 1631E BrCl Oxidation

Lab Sample ID	Analyte	Found	MDL	MRL	Units	Batch	Method	Notes
F306174-BLK1	Mercury	-0.06	0.08	0.50	ng/L	F306174	EPA 1631E	U
F306174-BLK2	Mercury	-0.06	0.08	0.50	ng/L	F306174	EPA 1631E	U
F306174-BLK3	Mercury	-0.06	0.08	0.50	ng/L	F306174	EPA 1631E	U
F306174-BLK4	Mercury	-0.03	0.08	0.50	ng/L	F306174	EPA 1631E	QB-04, U

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PREPARATION BLANKS

Instrument: ICPMS-6

Sequence: 3F26016

Preparation: EFGS-052 Closed Vessel Nitric Oven Digestion

Lab Sample ID	Analyte	Found	MDL	MRL	Units	Batch	Method	Notes
F306206-BLK1	Beryllium	0.0006	0.006	0.059	µg/L	F306206	EPA 1638	U
F306206-BLK2	Beryllium	0.001	0.006	0.059	µg/L	F306206	EPA 1638	U
F306206-BLK2	Chromium	0.10	0.01	0.10	µg/L	F306206	EPA 1638	QB-10
F306206-BLK5	Chromium	0.08	0.01	0.10	µg/L	F306206	EPA 1638	U
F306206-BLK1	Nickel	0.06	0.01	0.10	µg/L	F306206	EPA 1638	U
F306206-BLK2	Nickel	0.04	0.01	0.10	µg/L	F306206	EPA 1638	U
F306206-BLK1	Copper	0.04	0.01	0.10	µg/L	F306206	EPA 1638	U
F306206-BLK2	Copper	0.02	0.01	0.10	µg/L	F306206	EPA 1638	U
F306206-BLK1	Zinc	0.14	0.03	0.20	µg/L	F306206	EPA 1638	U
F306206-BLK2	Zinc	0.14	0.03	0.20	µg/L	F306206	EPA 1638	U
F306206-BLK1	Arsenic	0.17	0.04	0.15	µg/L	F306206	EPA 1638	QB-10
F306206-BLK2	Arsenic	0.09	0.04	0.15	µg/L	F306206	EPA 1638	QB-02, U
F306206-BLK1	Molybdenum	0.030	0.008	0.059	µg/L	F306206	EPA 1638	QB-02, U
F306206-BLK2	Molybdenum	0.020	0.008	0.059	µg/L	F306206	EPA 1638	QB-02, U
F306206-BLK1	Silver	0.014	0.002	0.020	µg/L	F306206	EPA 1638	U
F306206-BLK2	Silver	0.008	0.002	0.020	µg/L	F306206	EPA 1638	U
F306206-BLK1	Antimony	0.005	0.006	0.020	µg/L	F306206	EPA 1638	U
F306206-BLK2	Antimony	0.004	0.006	0.020	µg/L	F306206	EPA 1638	U
F306206-BLK1	Thallium	0.0007	0.0009	0.010	µg/L	F306206	EPA 1638	U
F306206-BLK2	Thallium	0.0006	0.0009	0.010	µg/L	F306206	EPA 1638	U
F306206-BLK1	Lead	0.008	0.003	0.040	µg/L	F306206	EPA 1638	U
F306206-BLK2	Lead	0.005	0.003	0.040	µg/L	F306206	EPA 1638	U

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PREPARATION BLANKS

Instrument: ICPMS-6

Sequence: 3G02013

Preparation: EFGS-052 Closed Vessel Nitric Oven Digestion

Lab Sample ID	Analyte	Found	MDL	MRL	Units	Batch	Method	Notes
F306422-BLK1	Selenium	0.29	0.31	1.19	µg/L	F306422	EPA 1638	U
F306422-BLK2	Selenium	0.29	0.31	1.19	µg/L	F306422	EPA 1638	U
F306422-BLK1	Cadmium	0.004	0.003	0.020	µg/L	F306422	EPA 1638	U
F306422-BLK2	Cadmium	-0.002	0.003	0.020	µg/L	F306422	EPA 1638	U

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PREPARATION BLANKS

Instrument: ICPMS-6 **Sequence:** 3G12001

Preparation: EFGS-052 Closed Vessel Nitric Oven Digestion

Lab Sample ID	Analyte	Found	MDL	MRL	Units	Batch	Method	Notes
F306422-BLK3	Cadmium	0.003	0.003	0.020	µg/L	F306422	EPA 1638	U
F306422-BLK4	Cadmium	-0.00004	0.003	0.020	µg/L	F306422	EPA 1638	U

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PREPARATION BLANKS

Instrument: ICPMS-6

Sequence: 3G03010

Preparation: EFGS-052 Closed Vessel Nitric Oven Digestion

Lab Sample ID	Analyte	Found	MDL	MRL	Units	Batch	Method	Notes
F306206-BLK7	Chromium	0.08	0.01	0.10	µg/L	F306206	EPA 1638	U

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PREPARATION BLANKS

Instrument: ICPMS-6

Sequence: 3G12001

Preparation: EFGS-052 Closed Vessel Nitric Oven Digestion

Lab Sample ID	Analyte	Found	MDL	MRL	Units	Batch	Method	Notes
F307031-BLK1	Arsenic	-0.001	0.04	0.15	µg/L	F307031	EPA 1638	U

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Notes and Definitions

U	Analyte was not detected and is reported as less than the LOD or as defined by the client. The LOD has been adjusted for any dilution or concentration of the sample.
R-05	The sample was diluted due to the presence of high levels of non-target analytes or particulates resulting in elevated reporting limits.
QR-08	The RPD value for the MS/MSD was outside of acceptance limits. Batch QC acceptable based on matrix duplicate and/or LCS/LCSD RPD values within control limits.
QM-07	The spike recovery was outside control limits for the MS and/or MSD. The batch was accepted based on LCS and LCSD recoveries within control limits and, when analysis permits, acceptable AS/ASD.
QM-02	The MS and/or MSD recoveries outside acceptance limits, due to spike concentration less than 1 times the sample concentration. The batch was accepted based on LCS and LCSD recoveries within control limits and, when analysis permits, acceptable AS/ASD.
QB-10	The method blank and/or initial/continuing calibration blank contains analyte at a concentration above the MRL. Only report sample results greater than 10 times the contamination value (QB-01), or samples less than the MRL (QB-02).
QB-04	The blank was preserved to 2% BrCl rather than 1%. The control limit for blanks preserved to greater than 1% BrCl is the preservation percentage multiplied by the MRL.
QB-02	The method blank and/or initial/continuing calibration blank contains analyte at a concentration above the MRL. However, the sample concentrations are less than the MRL.
QB-01	The method blank and/or initial/continuing calibration blank contains analyte at a concentration above the MRL. However, the blank concentration(s) are less than 10% of the sample result.
AS	This MS and/or MSD is an analytical spike and/or an analytical spike duplicate.
DET	Analyte Detected
MDL	Minimum Detection Limit
MRL	Minimum Reporting Limit
ND	Analyte Not Detected at or above the reporting limit
wet	Sample results reported on a wet weight basis
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
RSD	Relative Standard Deviation

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Liz Siska

Liz Siska, Project Manager

YAKIMA REGIONAL WASTEWATER TREATMENT PLANT
ANALYTICAL RESULTS

Sample Origin: BIOSOLIDS PRIORITY POLLUTANT METALS
Sample Description: CENTRIFUGE CONVEYOR GRAB
Matrix: BIOSOLIDS
Date Received by Lab: 6/4/2013
Lab Sample No: 2013 Q2 BS PP

A) Pollutants	Analytical Method	Results (Dry wt.)	Units	Detection Limit	Date Analyzed
Antimony	SM3030D/SM3113B	ND	mg/kg	1	06/07/13
Arsenic	SM3030D/SM3113B	ND	mg/kg	2	06/07/13
Beryllium	SM3030D/SM3113B	1.20	mg/kg	0.5	06/13/13
Cadmium	SM3030D/SM3113B	1.38	mg/kg	0.1	06/06/13
Chromium	SM3030D/SM3113B	20.1	mg/kg	0.2	06/06/13
Copper	SM3030D/SM3113B	368	mg/kg	2	06/11/13
Lead	SM3030D/SM3113B	50.1	mg/kg	2	06/18/13
Mercury	SM3112B	ND	mg/kg	0.9	06/18/13
Nickel	SM3030D/SM3113B	9.92	mg/kg	1	06/11/13
Selenium	SM3030D/SM3113B	3.44	mg/kg	3	06/13/13
Silver	SM3030D/SM3113B	3.51	mg/kg	1	06/11/13
Thallium	SM3030D/SM3113B	ND	mg/kg	0.5	06/12/13
Zinc	SM3030D/SM3113B	982	mg/kg	2	06/11/13

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Chain of Custody Record & Laboratory Analysis Request: Air, Water, Sediments, Plant and Animal Tissue, Hydrocarbon & Other Samples

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Bothell, WA 98011
Phone: 425-686-1996
Fax: 425-686-3096
info@FrontierGS.com
http://www.FrontierGS.com

Page 1 of 1

Client: City of Yakima Wastewater	Contact: Jennifer Key
Address: 2220 East Viola Yakima, WA 98901	Phone: same Fax:
	E-mail: same
Project Name: NPDES Metals Monitoring	Contract/PO: 1385
Report To: Jennifer Key	Invoice To: Teri Stine
Address: same	Address: 2220 East Viola Yakima, WA 98901
Phone: 575-6133 Fax:	Phone: Fax: 575-6116
E-mail: jkey@ci.yakima.wa.us	E-mail: tstine@ci.yakima.wa.us

No.	Engraved Bottle ID	Sample ID	# of Bottles	Matrix	Date & Time	Sampled By	Field Filtered (Y/N)	Field Preserved: HNO_3 HCl BrCl Other (%)	Analyses Requested: ICP-MS* Total Metals	Hg-AFS Total Mercury					Comments
1	B-131205	Field Blank	1 PETG	W	6/4/13 0815	JK/CJ	N	N/A	X						*Total Metals Analyte List: Antimony, Arsenic, Beryllium, Cadmium, Chromium, Copper, Lead, Molybdenum, Nickel, Selenium, Silver, Thallium, Zinc
2	B-131920	"	"	W	6/4/13 0815	JK/CJ	N	"		X					
3	B-131927	YRWWTP Influent	"	WW	6/4/13 0845	JK/CJ	N	"	X						
4	B-131933	"	"	WW	6/4/13 0845	JK/CJ	N	"		X					
5	B-131934	YRWWTP Effluent	"	WW	6/4/13 0830	JK/CJ	N	"	X						
6	B-131935	"	"	WW	6/4/13 0830	JK/CJ	N	"		X					
7															
8															
9															
10															
11															
12															*Note: Field Blank poured into sampling vessel.*

EFGS PM:
Date:
TAT (business days): **20** (std) **15 10 5 4 3 2 24 hrs.** (For TAT < 10 days, contact PM. Surcharges apply for expedited TAT)
Saturday delivery? ☐ Y ☐N (If yes, please contact PM)
EDD ☐ Y ☐ N
QA ☐ Standard ☐ High

For Laboratory Use Only

COC Seal:	Comments:
Cooler Temp:	
Carrier:	
VTSR:	
# of Coolers:	

Matrix Codes:
FW: Fresh Water
WW: Waste Water
SB: Sea and Brackish Water
SS: Soil and Sediment
TS: Plant and Animal Tissue
HC: Hydrocarbons
TR: Trap
OT: Other

Relinquished By: Jennifer Key	Received By:	Received By:
Name: Jennifer Key	Name:	Name:
Organization: City of Yakima	Organization:	Organization:
Date & Time: 6/4/13 0855	Date & Time:	Date & Time:

Tracking number: 8709 8032 5057

Sample Disposal:
☐ Return (shipping fees may apply)
☒ Standard Disposal – 30 Days after report
☐ Retain for ____ weeks after report (storage fees may apply)

By signing, you declare that you agree with EFGS' terms and conditions, and that you authorize EFGS to perform the specified analyses.

Customer Approval: Jennifer Key Date: 6/4/13

hone: (425) 686-1996
ax: (425) 686-3096
ttp://www.FrontierGS.com

Frontier Global Sciences

11720 North Creek Pkwy. North
Suite 400
Bothell, WA 98011

Client: City of Yakima
Project:
Phone: 509-575-6077
Ship To: Jennifer Key
2220 E. Viola
Yakima, WA 98901

Date Required: 16-May
Date Submitted: 13-May
Lab WO#s:

Shipping Information:

Qty.	Size	Bottle/Jar Type	Lot #	Preservative	Lot#	Analyte(s)	Comments
3	250mL	PETG	1091920			TM (No Mn)	
3	250mL	PETG	1091920			Hg	

quipment	Length/Size	Qty.	Custom Setup
IF 15 Tubing			Y / N
F 73 Tubing			Y / N
flon (0.25"OD) Tubing			Y / N
line (Gelman) Filter			Y / N
icuum Filter (0.45 micron)			Y / N
l Paper			Y / N

2.5 L Reagent Water: -
COC(s):
Gloves (4 per Sample): I'T NEED GLO
Custody Seals (1 per Cooler): X
Temp Blank (1 per Cooler): X

Notes: they don't need gloves.
LS

PM:

See Reverse for Bottle Types, Prese ion Handling Instructions

Date Shipped: 05/15/ ls: AJ

CITY OF YAKIMA
WASTEWATER DIVISION
2220 East Viola
Yakima, Washington 98901
Phone: 575-6077 • Fax (509) 575-6116

September 26, 2013

Ian Laseke
Department of Ecology
Central Regional Office
15 W. Yakima Ave. Suite 200
Yakima, WA 98902

Dear Mr. Laseke,

Enclosed are the influent, effluent, and biosolid priority pollutant analytical reports for the third calendar quarter of 2013.

These reports have been submitted to the Department of Ecology within forty-five (45) days of the end of the sampling period. Therefore, the report satisfies the requirements in § S3 A. of the City of Yakima's National Pollution Discharge Elimination System (NPDES) permit WA-002402-03, Sampling and Reporting Requirements.

If you have any questions, please call me at (509) 575-6133.

Sincerely,

Michael A Price

Mike Price
Process Control Supervisor

Yakima
All-America City
1994

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11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

19 September 2013

Jennifer Key
City of Yakima
2220 E. Viola
Yakima, WA 98901

RE: NDPES Metals Monitoring 2012

Enclosed are the analytical results for samples received by Eurofins Frontier Global Sciences. All quality control measurements are within established control limits and there were no analytical difficulties encountered with the exception of those listed in the case narrative section of this report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Liz Siska

Liz Siska
Project Manager

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11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

City of Yakima	Project: NDPES Metals Monitoring 2012	
2220 E. Viola	Project Number: 1385	**Reported:**
Yakima WA, 98901	Project Manager: Jennifer Key	19-Sep-13 15:35

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Field Blank	1309142-01	Water	04-Sep-13 08:00	05-Sep-13 10:30
YRWWTP Influent	1309142-02	Water	04-Sep-13 08:30	05-Sep-13 10:30
YRWWTP Effluent	1309142-03	Water	04-Sep-13 08:15	05-Sep-13 10:30

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

Liz Siska, Project Manager

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425.686.1996 Phone
425.686.3096 Fax

City of Yakima	Project: NDPES Metals Monitoring 2012	
2220 E. Viola	Project Number: 1385	Reported:
Yakima WA, 98901	Project Manager: Jennifer Key	19-Sep-13 15:35

SAMPLE RECEIPT

Samples were received at Eurofins Frontier Global Sciences (EFGS) on 9/5/2013 10:30:00 AM . The samples were received intact, within a sealed cooler at ambient temperature.

SAMPLE PREPARATION AND ANALYSIS

Samples were prepared and analyzed for total mercury by cold vapor atomic fluorescence spectrometry (CV-AFS) in accordance with EPA 1631E (EFGS-069).

Samples were prepared and analyzed for total recoverable metals by inductively coupled plasma mass spectrometry (ICP-MS) in accordance with EPA 1638 (EFGS-054).

ANALYTICAL AND QUALITY CONTROL ISSUES

Method blanks were prepared for every preparation to assess possible blank contribution from the sample preparation procedure. The method blanks were carried through the entire analytical procedure. All blanks fell within the established acceptance criteria with the exception of any items narrated above or flagged and described in the notes and definitions section of the report.

Liquid spikes, certified reference material (CRM) or a quality control samples (QCS) were prepared for every preparation as a measure of accuracy. All liquid spikes, CRMs and/or QCS samples fell within the established acceptance criteria with the exception of any items narrated above or flagged and described in the notes and definitions section of the report.

As an additional measure of the accuracy of the methods used and to check for matrix interference, matrix spikes (MS) and matrix spike duplicates (MSD) were digested and analyzed. All of the matrix spike recoveries fell within the established acceptance criteria with the exception of any items flagged and described in the notes and definitions section of the report.

A reasonable measure of the precision of the analytical methods is the relative percent difference (RPD) between a matrix spike recovery and a matrix spike duplicate recovery and between laboratory control sample recovery and laboratory control sample duplicate recoveries. All of the relative percent differences established acceptance criteria with the exception of any items flagged and described in the notes and definitions section of the report.

Eurofins Frontier Global Sciences, Inc.

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

Liz Siska

Liz Siska, Project Manager

EFGS Work Order: 1309142

Sample Receipt Checklist

Eurofins Frontier Global Sciences

Client: City of Yakima Date & Time Received: 9/5/13 10:30 Date Logged In: 9 9 13 Date Labeled: 9/9/13

Project: _____ Received By: AMB Logged By: CRS Labeled By: CRS

# of Coolers Received: 1 Samples Arrived By: ✓ Shipping Service ____ Courier ____ Hand ____ Other (Specify: _____)

Tracking/Airbill #: 8709 8032 5080 Coolant: ☒ None/Ambient ☐ Loose Ice ☐ Gel Ice ☐ Dry Ice

Coolant Required: Y (N) Temp Blank Used: Y (N) for Cooler(s): —

Cooler Information:	Y/N/NA	Comments
The coolers do not appear to be tampered with:	Y	
Custody Seals are present and intact:	Y	
Custody seals signed by:	Y	Jennifer Key

TID: —	CF: — °C		Date/time: —		By: —	
Cooler 1:	°C	w/ CF: °C	Cooler 4:	°C	w/ CF:	°C
Cooler 2:	°C	w/ CF: °C	Cooler 5:	°C	w/ CF:	°C
Cooler 3:	°C	w/ CF: °C	Cooler 6:	°C	w/ CF:	°C

Chain of Custody:	Y/N/NA	Comments
Sample ID/Description:	Y	
Date and time of collection:	Y	
Sampled by:	Y	
Preservation type:	NA	
Requested analyses:	Y	
Required signatures:	Y	
Internal COC required:	N	

Sample Condition/Integrity:	Y/N/NA	Comments
Sample containers intact/present:	Y	
Sample labels are present and legible:	Y	
Sample ID on container/bag matches COC:	Y	
Correct sample containers used:	Y	
Samples received within holding times:	Y	
Sample volume sufficient for requested analyses:	Y	
Correct preservative used for requested analyses:	NA	
pH of preserved samples verified and recorded:	NA	

Anomalies/Non-conformances (attach additional pages if needed):

Discussion/Resolution: Client Contacted: _____ Date/Time: _____ Method: _____

J09142

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Frontier Global Sciences

Chain of Custody Record & Laboratory Analysis Request: Air, Water, Sediments, Plant and Animal Tissue, Hydrocarbon & Other Samples

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Phone: 425-686-1996
Fax: 425-686-3096
info@FrontierGS.com
http://www.FrontierGS.com

Client: City of Yakima Wastewater	Contact: Jennifer Key
Address: 2220 East Viola Yakima, WA 98901	Phone: same Fax:
	E-mail: same
Project Name: NPDES Metals Monitoring	Contract/PO: 1385
Report To: Jennifer Key	Invoice To: Carolyn Belles
Address: same	Address: 2220 East Viola Yakima, WA 98901
Phone: 575-6133 Fax:	Phone: Fax: 575-6116
E-mail: jkey@ci.yakima.wa.us	E-mail: Carolyn.Belles@yakimawa.gov

EFGS PM:
Date:
TAT (business days): **20** (std) **15 10 5 4 3 2 24 hrs.** (For TAT < 10 days, contact PM. Surcharges apply for expedited TAT)
Saturday delivery? ☐ Y ☐ N (If yes, please contact PM)
EDD ☐ Y ☐ N
QA ☐ Standard ☐ High

No.	Engraved Bottle ID	Sample ID	# of Bottles	Matrix	Date & Time	Sampled By	Field Filtered (Y/N)	Field Preserved: HNO_3 HCl BrCl Other (%)	ICP-MS* Total Metals	Hg-AFS Total Mercury					Comments
1	B-131593	Field Blank	1 PETG	W	9/4/13 0800	JK/AP	N	N/A	X						*Total Metals Analyte List:
2	B-131600	"	"	W	9/4/13 0800	JK/AP	N	"		X					Antimony
3	B-131604	YRWWTP Influent	"	WW	9/4/13 0830	JK/AP	N	"	X						Arsenic
4	B-131666	"	"	WW	9/4/13 0830	JK/AP	N	"		X					Beryllium
5	B-131668	YRWWTP Effluent	"	WW	9/4/13 0815	JK/AP	N	"	X						Cadmium
6	B-131692	"	"	WW	9/4/13 0815	JK/AP	N	"		X					Chromium
7															Copper
8															Lead
9															Molybdenum
10															Nickel
11															Selenium
12															Silver
															Thallium
															Zinc
															Note: Field Blank poured into sampling vessel.

For Laboratory Use Only

COC Seal: ✓ yes
Cooler Temp: ambient
Carrier: FedEX
VTSR: 10:30
# of Coolers: 1

Comments:

Matrix Codes:
FW: Fresh Water
WW: Waste Water
SB: Sea and Brackish Water
SS: Soil and Sediment
TS: Plant and Animal Tissue
HC: Hydrocarbons
TR: Trap
OT: Other

Relinquished By: Jennifer Key	Received By: [signature]	Received By:
Name: Jennifer Key	Name: A. BAHM	Name:
Organization: City of Yakima	Organization: EFGS	Organization:
Date & Time: 9/4/13 0845	Date & Time: 9/5/13 10:30	Date & Time:

Tracking number: 8709 8032 5080

Sample Disposal:
☐ Return (shipping fees may apply)
☒ Standard Disposal – 30 Days after report
☐ Retain for ____ weeks after report (storage fees may apply)

By signing, you declare that you agree with EFGS' terms and conditions, and that you authorize EFGS to perform the specified analyses.

Customer Approval: [signature] Date: 9/4/13

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Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

City of Yakima	Project: NDPES Metals Monitoring 2012	
2220 E. Viola	Project Number: 1385	**Reported:**
Yakima WA, 98901	Project Manager: Jennifer Key	19-Sep-13 15:35

Field Blank

1309142-01

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
Sample Preparation: EFGS-052 Closed Vessel Nitric Oven Digestion											
Silver	ND	-	0.020	µg/L	1	F309083	12-Sep-13	3I13011	13-Sep-13	EPA 1638	U
Arsenic	ND	-	0.30	µg/L	1	F309083	12-Sep-13	3I13011	13-Sep-13	EPA 1638	U
Beryllium	ND	-	0.020	µg/L	1	F309083	12-Sep-13	3I13011	13-Sep-13	EPA 1638	U
Cadmium	ND	-	0.020	µg/L	1	F309083	12-Sep-13	3I13011	13-Sep-13	EPA 1638	U
Chromium	ND	-	0.10	µg/L	1	F309083	12-Sep-13	3I13011	13-Sep-13	EPA 1638	QB-02, U
Copper	ND	-	0.10	µg/L	1	F309083	12-Sep-13	3I13011	13-Sep-13	EPA 1638	QB-02, U
Molybdenum	ND	-	0.200	µg/L	1	F309083	12-Sep-13	3I13011	13-Sep-13	EPA 1638	U
Nickel	ND	-	0.10	µg/L	1	F309083	12-Sep-13	3I13011	13-Sep-13	EPA 1638	U
Lead	ND	-	0.040	µg/L	1	F309083	12-Sep-13	3I13011	13-Sep-13	EPA 1638	U
Antimony	ND	-	0.020	µg/L	1	F309083	12-Sep-13	3I13011	13-Sep-13	EPA 1638	U
Selenium	ND	-	0.60	µg/L	1	F309100	12-Sep-13	3I17004	13-Sep-13	EPA 1638	U
Thallium	ND	-	0.020	µg/L	1	F309083	12-Sep-13	3I13011	13-Sep-13	EPA 1638	U
Zinc	ND	-	0.50	µg/L	1	F309083	12-Sep-13	3I13011	13-Sep-13	EPA 1638	U
Sample Preparation: EPA 1631E BrCl Oxidation											
Mercury	ND	-	0.50	ng/L	1	F309087	12-Sep-13	3I12010	12-Sep-13	EPA 1631E	U

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City of Yakima	Project: NDPES Metals Monitoring 2012	
2220 E. Viola	Project Number: 1385	**Reported:**
Yakima WA, 98901	Project Manager: Jennifer Key	19-Sep-13 15:35

YRWWTP Influent

1309142-02

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
Sample Preparation: EFGS-052 Closed Vessel Nitric Oven Digestion											
Silver	**0.044**	-	0.040	µg/L	2	F309083	12-Sep-13	3I13011	13-Sep-13	EPA 1638	
Arsenic	**2.28**	-	0.60	µg/L	2	F309083	12-Sep-13	3I13011	13-Sep-13	EPA 1638	
Beryllium	ND	-	0.040	µg/L	2	F309083	12-Sep-13	3I13011	13-Sep-13	EPA 1638	R-05, U
Cadmium	**0.121**	-	0.040	µg/L	2	F309083	12-Sep-13	3I13011	13-Sep-13	EPA 1638	
Chromium	**2.14**	-	0.20	µg/L	2	F309083	12-Sep-13	3I13011	13-Sep-13	EPA 1638	QB-01
Copper	**19.9**	-	0.20	µg/L	2	F309083	12-Sep-13	3I13011	13-Sep-13	EPA 1638	QB-01
Molybdenum	**0.847**	-	0.400	µg/L	2	F309083	12-Sep-13	3I17012	16-Sep-13	EPA 1638	
Nickel	**1.87**	-	0.20	µg/L	2	F309083	12-Sep-13	3I13011	13-Sep-13	EPA 1638	
Lead	**1.99**	-	0.080	µg/L	2	F309083	12-Sep-13	3I13011	13-Sep-13	EPA 1638	
Antimony	**0.195**	-	0.040	µg/L	2	F309083	12-Sep-13	3I13011	13-Sep-13	EPA 1638	
Selenium	**5.36**	-	1.20	µg/L	2	F309100	12-Sep-13	3I17004	13-Sep-13	EPA 1638	
Thallium	ND	-	0.040	µg/L	2	F309083	12-Sep-13	3I13011	13-Sep-13	EPA 1638	R-05, U
Zinc	**83.7**	-	1.00	µg/L	2	F309083	12-Sep-13	3I13011	13-Sep-13	EPA 1638	
Sample Preparation: EPA 1631E BrCl Oxidation											
Mercury	**76.1**	-	10.1	ng/L	20	F309087	12-Sep-13	3I12010	12-Sep-13	EPA 1631E	

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

Liz Siska, Project Manager

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Bothell, WA 98011
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425.686.3096 Fax

City of Yakima	Project: NDPES Metals Monitoring 2012	
2220 E. Viola	Project Number: 1385	**Reported:**
Yakima WA, 98901	Project Manager: Jennifer Key	19-Sep-13 15:35

YRWWTP Effluent

1309142-03

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
Sample Preparation: EFGS-052 Closed Vessel Nitric Oven Digestion											
Silver	**0.041**	-	0.020	µg/L	1	F309083	12-Sep-13	3I13011	13-Sep-13	EPA 1638	
Arsenic	**2.11**	-	0.30	µg/L	1	F309083	12-Sep-13	3I13011	13-Sep-13	EPA 1638	
Beryllium	ND	-	0.020	µg/L	1	F309083	12-Sep-13	3I13011	13-Sep-13	EPA 1638	U
Cadmium	**0.032**	-	0.020	µg/L	1	F309083	12-Sep-13	3I13011	13-Sep-13	EPA 1638	
Chromium	**0.73**	-	0.10	µg/L	1	F309083	12-Sep-13	3I17012	16-Sep-13	EPA 1638	
Copper	**5.98**	-	0.10	µg/L	1	F309083	12-Sep-13	3I13011	13-Sep-13	EPA 1638	QB-01
Molybdenum	**9.15**	-	0.200	µg/L	1	F309083	12-Sep-13	3I13011	13-Sep-13	EPA 1638	
Nickel	**1.64**	-	0.10	µg/L	1	F309083	12-Sep-13	3I13011	13-Sep-13	EPA 1638	
Lead	**0.331**	-	0.040	µg/L	1	F309083	12-Sep-13	3I13011	13-Sep-13	EPA 1638	
Antimony	**0.375**	-	0.020	µg/L	1	F309083	12-Sep-13	3I13011	13-Sep-13	EPA 1638	
Selenium	**1.14**	-	0.60	µg/L	1	F309100	12-Sep-13	3I17004	13-Sep-13	EPA 1638	
Thallium	ND	-	0.020	µg/L	1	F309083	12-Sep-13	3I13011	13-Sep-13	EPA 1638	U
Zinc	**46.2**	-	0.50	µg/L	1	F309083	12-Sep-13	3I13011	13-Sep-13	EPA 1638	
Sample Preparation: EPA 1631E BrCl Oxidation											
Mercury	**3.22**	-	0.50	ng/L	1	F309087	12-Sep-13	3I12010	12-Sep-13	EPA 1631E	

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425.686.1996 Phone
425.686.3096 Fax

City of Yakima	Project: NDPES Metals Monitoring 2012	
2220 E. Viola	Project Number: 1385	Reported:
Yakima WA, 98901	Project Manager: Jennifer Key	19-Sep-13 15:35

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch F309087 - EPA 1631E BrCl Oxidation											
Blank (F309087-BLK1)					Prepared & Analyzed: 12-Sep-13						
Mercury	ND	-	0.50	ng/L							U
Blank (F309087-BLK2)					Prepared & Analyzed: 12-Sep-13						
Mercury	ND	-	0.50	ng/L							U
Blank (F309087-BLK3)					Prepared & Analyzed: 12-Sep-13						
Mercury	ND	-	0.50	ng/L							U
Blank (F309087-BLK4)					Prepared & Analyzed: 12-Sep-13						**QB-04**
Mercury	ND	-	0.50	ng/L							U
LCS (F309087-BS1)					Prepared & Analyzed: 12-Sep-13						
Mercury	14.96	-	0.50	ng/L	15.679		95.4	77-123			
LCS Dup (F309087-BSD1)					Prepared & Analyzed: 12-Sep-13						
Mercury	15.42	-	0.50	ng/L	15.679		98.3	77-123	3.00	24	
Duplicate (F309087-DUP1)		**Source: 1309048-03**			Prepared & Analyzed: 12-Sep-13						
Mercury	1.76	-	0.50	ng/L		1.81			2.45	24	
Matrix Spike (F309087-MS1)		**Source: 1309048-03**			Prepared & Analyzed: 12-Sep-13						
Mercury	6.96	-	0.50	ng/L	5.1000	1.81	101	71-125			
Matrix Spike (F309087-MS2)		**Source: 1309049-05**			Prepared & Analyzed: 12-Sep-13						
Mercury	6.35	-	0.50	ng/L	5.1000	1.49	95.4	71-125			
Matrix Spike Dup (F309087-MSD1)		**Source: 1309048-03**			Prepared & Analyzed: 12-Sep-13						
Mercury	7.37	-	0.50	ng/L	5.1000	1.81	109	71-125	5.62	24	

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City of Yakima	Project: NDPES Metals Monitoring 2012	
2220 E. Viola	Project Number: 1385	**Reported:**
Yakima WA, 98901	Project Manager: Jennifer Key	19-Sep-13 15:35

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch F309087 - EPA 1631E BrCl Oxidation											
Matrix Spike Dup (F309087-MSD2)		**Source: 1309049-05**			Prepared & Analyzed: 12-Sep-13						
Mercury	6.09	-	0.50	ng/L	5.1000	1.49	90.2	71-125	4.28	24	

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City of Yakima
2220 E. Viola
Yakima WA, 98901

Project: NDPES Metals Monitoring 2012
Project Number: 1385
Project Manager: Jennifer Key

Reported:
19-Sep-13 15:35

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch F309083 - EFGS-052 Closed Vessel Nitric Oven Digestion											
Blank (F309083-BLK3)					Prepared: 12-Sep-13 Analyzed: 13-Sep-13						
Beryllium	ND	-	0.020	µg/L							U
Chromium	ND	-	0.10	µg/L							U
Nickel	ND	-	0.10	µg/L							QB-02, U
Copper	ND	-	0.10	µg/L							QB-02, U
Zinc	ND	-	0.50	µg/L							U
Arsenic	ND	-	0.30	µg/L							U
Molybdenum	ND	-	0.198	µg/L							U
Silver	ND	-	0.020	µg/L							QM-12, U
Cadmium	ND	-	0.020	µg/L							U
Antimony	ND	-	0.020	µg/L							U
Thallium	ND	-	0.020	µg/L							U
Lead	ND	-	0.040	µg/L							U
Blank (F309083-BLK4)					Prepared: 12-Sep-13 Analyzed: 13-Sep-13						
Beryllium	ND	-	0.020	µg/L							U
Chromium	ND	-	0.10	µg/L							U
Nickel	ND	-	0.10	µg/L							QB-02, U
Copper	ND	-	0.10	µg/L							QB-02, U
Zinc	ND	-	0.50	µg/L							U
Arsenic	ND	-	0.30	µg/L							U
Molybdenum	ND	-	0.198	µg/L							U
Silver	ND	-	0.020	µg/L							QM-12, U
Cadmium	ND	-	0.020	µg/L							U
Antimony	ND	-	0.020	µg/L							U
Thallium	ND	-	0.020	µg/L							U
Lead	ND	-	0.040	µg/L							U
LCS (F309083-BS1)					Prepared: 12-Sep-13 Analyzed: 13-Sep-13						
Beryllium	0.984	-	0.020	µg/L	1.0018		98.2	75-125			
Chromium	51.88	-	0.10	µg/L	50.000		104	85-115			
Nickel	52.89	-	0.10	µg/L	50.000		106	68-134			
Copper	51.29	-	0.10	µg/L	49.980		103	51-145			
Zinc	53.20	-	0.50	µg/L	50.000		106	46-146			
Arsenic	49.17	-	0.30	µg/L	50.040		98.3	85-115			

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City of Yakima	Project: NDPES Metals Monitoring 2012	
2220 E. Viola	Project Number: 1385	**Reported:**
Yakima WA, 98901	Project Manager: Jennifer Key	19-Sep-13 15:35

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch F309083 - EFGS-052 Closed Vessel Nitric Oven Digestion											
LCS (F309083-BS1)					Prepared: 12-Sep-13 Analyzed: 13-Sep-13						
Molybdenum	9.205	-	0.199	µg/L	10.000		92.0	85-115			
Silver	0.963	-	0.020	µg/L	0.99980		96.4	74-119			
Cadmium	5.033	-	0.020	µg/L	5.0020		101	84-113			
Antimony	1.001	-	0.020	µg/L	1.0000		100	79-122			
Thallium	0.932	-	0.020	µg/L	1.0000		93.2	64-137			
Lead	9.352	-	0.040	µg/L	10.002		93.5	72-143			
LCS Dup (F309083-BSD1)					Prepared: 12-Sep-13 Analyzed: 13-Sep-13						
Beryllium	1.014	-	0.020	µg/L	1.0018		101	75-125	2.94	20	
Chromium	52.12	-	0.10	µg/L	50.000		104	85-115	0.465	20	
Nickel	52.84	-	0.10	µg/L	50.000		106	68-134	0.0961	20	
Copper	51.43	-	0.10	µg/L	49.980		103	51-145	0.265	20	
Zinc	53.39	-	0.50	µg/L	50.000		107	46-146	0.359	20	
Arsenic	49.43	-	0.30	µg/L	50.040		98.8	85-115	0.534	20	
Molybdenum	9.368	-	0.199	µg/L	10.000		93.7	85-115	1.75	20	
Silver	0.991	-	0.020	µg/L	0.99980		99.1	74-119	2.80	20	
Cadmium	5.045	-	0.020	µg/L	5.0020		101	84-113	0.231	20	
Antimony	1.045	-	0.020	µg/L	1.0000		104	79-122	4.27	20	
Thallium	0.962	-	0.020	µg/L	1.0000		96.2	64-137	3.11	20	
Lead	9.531	-	0.040	µg/L	10.002		95.3	72-143	1.90	20	
Matrix Spike (F309083-MS1)		**Source: 1309145-01**			Prepared: 12-Sep-13 Analyzed: 13-Sep-13						
Beryllium	0.974	-	0.101	µg/L	1.0168	ND	95.8	75-125			
Chromium	49.08	-	0.50	µg/L	50.750	0.29	96.1	85-115			QB-01
Nickel	50.54	-	0.50	µg/L	50.750	0.15	99.3	68-134			QB-01
Copper	94.50	-	0.50	µg/L	50.730	49.43	88.9	51-145			QB-01
Zinc	53.22	-	2.52	µg/L	50.750	5.86	93.3	46-146			
Arsenic	45.36	-	1.51	µg/L	50.791	0.23	88.9	85-115			
Molybdenum	9.267	-	1.01	µg/L	10.150	0.119	90.1	80-115			
Silver	0.945	-	0.101	µg/L	1.0148	0.011	92.0	74-119			
Cadmium	4.798	-	0.101	µg/L	5.0770	ND	94.5	84-113			
Antimony	0.996	-	0.101	µg/L	1.0150	ND	98.1	79-122			
Thallium	0.974	-	0.101	µg/L	1.0150	0.002	95.8	64-137			
Lead	9.919	-	0.202	µg/L	10.152	0.428	93.5	72-143			

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City of Yakima
2220 E. Viola
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Project: NDPES Metals Monitoring 2012
Project Number: 1385
Project Manager: Jennifer Key

Reported:
19-Sep-13 15:35

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch F309083 - EFGS-052 Closed Vessel Nitric Oven Digestion											
Matrix Spike (F309083-MS2)		**Source: 1309146-01**			Prepared: 12-Sep-13 Analyzed: 13-Sep-13						
Beryllium	0.932	-	0.101	µg/L	1.0168	0.012	90.5	75-125			
Chromium	50.88	-	0.50	µg/L	50.750	1.05	98.2	85-115			QB-01
Nickel	51.58	-	0.50	µg/L	50.750	0.53	101	68-134			QB-01
Copper	54.14	-	0.50	µg/L	50.730	2.36	102	51-145			QB-01
Zinc	57.33	-	2.52	µg/L	50.750	4.68	104	46-146			
Arsenic	49.15	-	1.51	µg/L	50.791	2.02	92.8	85-115			
Molybdenum	9.964	-	1.01	µg/L	10.150	0.272	95.5	80-115			
Silver	0.907	-	0.101	µg/L	1.0148	0.018	87.5	74-119			
Cadmium	5.014	-	0.101	µg/L	5.0770	0.019	98.4	84-113			
Antimony	1.178	-	0.101	µg/L	1.0150	0.170	99.3	79-122			
Thallium	0.923	-	0.101	µg/L	1.0150	0.004	90.5	64-137			
Lead	9.231	-	0.202	µg/L	10.152	0.140	89.5	72-143			
Matrix Spike (F309083-MS3)		**Source: 1309145-01**			Prepared: 12-Sep-13 Analyzed: 13-Sep-13						
Beryllium	5.031	-	0.100	µg/L	5.0750	ND	99.1	75-125			AS
Chromium	104.4	-	0.50	µg/L	101.50	0.29	103	85-115			AS, QB-01
Nickel	134.3	-	0.50	µg/L	126.88	0.15	106	68-134			AS, QB-01
Copper	181.4	-	0.50	µg/L	126.88	49.43	104	51-145			AS, QB-01
Zinc	269.0	-	2.50	µg/L	253.75	5.86	104	46-146			AS
Arsenic	101.1	-	1.50	µg/L	101.50	0.23	99.4	85-115			AS
Molybdenum	50.34	-	1.00	µg/L	50.750	0.119	99.0	80-115			AS
Silver	5.217	-	0.100	µg/L	5.0750	0.011	103	74-119			AS
Cadmium	10.01	-	0.100	µg/L	10.150	ND	98.7	84-113			AS
Antimony	4.103	-	0.100	µg/L	5.0750	ND	80.9	79-122			AS
Thallium	4.832	-	0.100	µg/L	5.0750	0.002	95.2	64-137			AS
Lead	24.94	-	0.200	µg/L	25.375	0.428	96.6	72-143			AS
Matrix Spike (F309083-MS4)		**Source: 1309146-01**			Prepared: 12-Sep-13 Analyzed: 13-Sep-13						
Beryllium	5.321	-	0.100	µg/L	5.0750	0.012	105	75-125			AS
Chromium	105.7	-	0.50	µg/L	101.50	1.05	103	85-115			AS, QB-01
Nickel	135.2	-	0.50	µg/L	126.88	0.53	106	68-134			AS, QB-01
Copper	138.2	-	0.50	µg/L	126.88	2.36	107	51-145			AS, QB-01
Zinc	272.2	-	2.50	µg/L	253.75	4.68	105	46-146			AS
Arsenic	101.7	-	1.50	µg/L	101.50	2.02	98.2	85-115			AS

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Project: NDPES Metals Monitoring 2012
Project Number: 1385
Project Manager: Jennifer Key

Reported:
19-Sep-13 15:35

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch F309083 - EFGS-052 Closed Vessel Nitric Oven Digestion											
Matrix Spike (F309083-MS4)		**Source: 1309146-01**			Prepared: 12-Sep-13 Analyzed: 13-Sep-13						
Molybdenum	52.05	-	1.00	µg/L	50.750	0.272	102	80-115			AS
Silver	5.426	-	0.100	µg/L	5.0750	0.018	107	74-119			AS
Cadmium	9.880	-	0.100	µg/L	10.150	0.019	97.2	84-113			AS
Antimony	4.460	-	0.100	µg/L	5.0750	0.170	84.5	79-122			AS
Thallium	4.899	-	0.100	µg/L	5.0750	0.004	96.4	64-137			AS
Lead	24.94	-	0.200	µg/L	25.375	0.140	97.7	72-143			AS
Matrix Spike Dup (F309083-MSD1)		**Source: 1309145-01**			Prepared: 12-Sep-13 Analyzed: 13-Sep-13						
Beryllium	0.969	-	0.101	µg/L	1.0168	ND	95.3	75-125	0.453	20	
Chromium	47.90	-	0.50	µg/L	50.750	0.29	93.8	85-115	2.43	20	QB-0
Nickel	50.03	-	0.50	µg/L	50.750	0.15	98.3	68-134	1.01	20	QB-01
Copper	96.46	-	0.50	µg/L	50.730	49.43	92.7	51-145	2.05	20	QB-01
Zinc	54.41	-	2.52	µg/L	50.750	5.86	95.7	46-146	2.21	20	
Arsenic	47.18	-	1.51	µg/L	50.791	0.23	92.4	85-115	3.92	20	
Molybdenum	9.456	-	1.01	µg/L	10.150	0.119	92.0	80-115	2.02	20	
Silver	0.933	-	0.101	µg/L	1.0148	0.011	90.9	74-119	1.20	20	
Cadmium	4.822	-	0.101	µg/L	5.0770	ND	95.0	84-113	0.480	20	
Antimony	1.005	-	0.101	µg/L	1.0150	ND	99.1	79-122	0.936	20	
Thallium	0.944	-	0.101	µg/L	1.0150	0.002	92.9	64-137	3.06	20	
Lead	9.759	-	0.202	µg/L	10.152	0.428	91.9	72-143	1.63	20	
Matrix Spike Dup (F309083-MSD2)		**Source: 1309146-01**			Prepared: 12-Sep-13 Analyzed: 13-Sep-13						
Beryllium	0.993	-	0.101	µg/L	1.0168	0.012	96.4	75-125	6.28	20	
Chromium	50.30	-	0.50	µg/L	50.750	1.05	97.0	85-115	1.15	20	QB-01
Nickel	51.29	-	0.50	µg/L	50.750	0.53	100	68-134	0.563	20	QB-01
Copper	54.83	-	0.50	µg/L	50.730	2.36	103	51-145	1.26	20	QB-01
Zinc	54.63	-	2.52	µg/L	50.750	4.68	98.4	46-146	4.81	20	
Arsenic	49.75	-	1.51	µg/L	50.791	2.02	94.0	85-115	1.20	20	
Molybdenum	9.650	-	1.01	µg/L	10.150	0.272	92.4	80-115	3.20	20	
Silver	1.016	-	0.101	µg/L	1.0148	0.018	98.3	74-119	11.4	20	
Cadmium	5.094	-	0.101	µg/L	5.0770	0.019	100	84-113	1.58	20	
Antimony	1.187	-	0.101	µg/L	1.0150	0.170	100	79-122	0.792	20	
Thallium	0.950	-	0.101	µg/L	1.0150	0.004	93.1	64-137	2.88	20	
Lead	9.585	-	0.202	µg/L	10.152	0.140	93.0	72-143	3.76	20	

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Project: NDPES Metals Monitoring 2012
Project Number: 1385
Project Manager: Jennifer Key

Reported:
19-Sep-13 15:35

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch F309083 - EFGS-052 Closed Vessel Nitric Oven Digestion											
Matrix Spike Dup (F309083-MSD3)		**Source: 1309145-01**			Prepared: 12-Sep-13 Analyzed: 13-Sep-13						
Beryllium	4.568	-	0.100	µg/L	5.0750	ND	90.0	75-125	9.65	20	AS
Chromium	93.76	-	0.50	µg/L	101.50	0.29	92.1	85-115	10.8	20	AS, QB-01
Nickel	119.9	-	0.50	µg/L	126.88	0.15	94.4	68-134	11.3	20	AS, QB-01
Copper	164.3	-	0.50	µg/L	126.88	49.43	90.5	51-145	9.93	20	AS, QB-01
Zinc	242.0	-	2.50	µg/L	253.75	5.86	93.0	46-146	10.6	20	AS
Arsenic	91.18	-	1.50	µg/L	101.50	0.23	89.6	85-115	10.3	20	AS
Molybdenum	45.86	-	1.00	µg/L	50.750	0.119	90.1	80-115	9.33	20	AS
Silver	4.718	-	0.100	µg/L	5.0750	0.011	92.7	74-119	10.1	20	AS
Cadmium	8.759	-	0.100	µg/L	10.150	ND	86.3	84-113	13.4	20	AS
Antimony	3.898	-	0.100	µg/L	5.0750	ND	76.8	79-122	5.14	20	AS, QM-13
Thallium	4.316	-	0.100	µg/L	5.0750	0.002	85.0	64-137	11.3	20	AS
Lead	22.21	-	0.200	µg/L	25.375	0.428	85.9	72-143	11.6	20	AS
Matrix Spike Dup (F309083-MSD4)		**Source: 1309146-01**			Prepared: 12-Sep-13 Analyzed: 13-Sep-13						
Beryllium	5.285	-	0.100	µg/L	5.0750	0.012	104	75-125	0.688	20	AS
Chromium	100.3	-	0.50	µg/L	101.50	1.05	97.8	85-115	5.18	20	AS, QB-01
Nickel	126.7	-	0.50	µg/L	126.88	0.53	99.5	68-134	6.46	20	AS, QB-01
Copper	132.1	-	0.50	µg/L	126.88	2.36	102	51-145	4.48	20	AS, QB-01
Zinc	255.7	-	2.50	µg/L	253.75	4.68	98.9	46-146	6.25	20	AS
Arsenic	99.02	-	1.50	µg/L	101.50	2.02	95.6	85-115	2.70	20	AS
Molybdenum	48.66	-	1.00	µg/L	50.750	0.272	95.3	80-115	6.73	20	AS
Silver	5.117	-	0.100	µg/L	5.0750	0.018	100	74-119	5.88	20	AS
Cadmium	9.671	-	0.100	µg/L	10.150	0.019	95.1	84-113	2.14	20	AS
Antimony	4.487	-	0.100	µg/L	5.0750	0.170	85.1	79-122	0.613	20	AS
Thallium	4.928	-	0.100	µg/L	5.0750	0.004	97.0	64-137	0.596	20	AS
Lead	24.88	-	0.200	µg/L	25.375	0.140	97.5	72-143	0.219	20	AS

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City of Yakima	Project: NDPES Metals Monitoring 2012	
2220 E. Viola	Project Number: 1385	**Reported:**
Yakima WA, 98901	Project Manager: Jennifer Key	19-Sep-13 15:35

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch F309100 - EFGS-052 Closed Vessel Nitric Oven Digestion											
Blank (F309100-BLK1)					Prepared: 12-Sep-13 Analyzed: 13-Sep-13						
Selenium	ND	-	0.59	µg/L							U
Blank (F309100-BLK2)					Prepared: 12-Sep-13 Analyzed: 13-Sep-13						
Selenium	ND	-	0.59	µg/L							U
LCS (F309100-BS1)					Prepared: 12-Sep-13 Analyzed: 13-Sep-13						
Selenium	49.09	-	0.60	µg/L	49.980		98.2	59-149			
LCS Dup (F309100-BSD1)					Prepared: 12-Sep-13 Analyzed: 13-Sep-13						
Selenium	48.09	-	0.60	µg/L	49.980		96.2	59-149	2.05	20	
Matrix Spike (F309100-MS1)		**Source: 1309145-01RE1**			Prepared: 12-Sep-13 Analyzed: 13-Sep-13						
Selenium	46.31	-	3.03	µg/L	50.730	ND	91.3	59-149			
Matrix Spike (F309100-MS2)		**Source: 1309146-01RE1**			Prepared: 12-Sep-13 Analyzed: 13-Sep-13						
Selenium	46.29	-	3.03	µg/L	50.730	ND	91.2	59-149			
Matrix Spike (F309100-MS3)		**Source: 1309145-01RE1**			Prepared: 12-Sep-13 Analyzed: 13-Sep-13						
Selenium	94.05	-	3.00	µg/L	101.50	ND	92.7	59-149			AS
Matrix Spike (F309100-MS4)		**Source: 1309146-01RE1**			Prepared: 12-Sep-13 Analyzed: 13-Sep-13						
Selenium	96.49	-	3.00	µg/L	101.50	ND	95.1	59-149			AS
Matrix Spike Dup (F309100-MSD1)		**Source: 1309145-01RE1**			Prepared: 12-Sep-13 Analyzed: 13-Sep-13						
Selenium	45.41	-	3.03	µg/L	50.730	ND	89.5	59-149	1.96	20	
Matrix Spike Dup (F309100-MSD2)		**Source: 1309146-01RE1**			Prepared: 12-Sep-13 Analyzed: 13-Sep-13						
Selenium	47.20	-	3.03	µg/L	50.730	ND	93.0	59-149	1.95	20	

Eurofins Frontier Global Sciences, Inc.

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Liz Siska, Project Manager

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11720 Northcreek Pkwy N, Suite 400
Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

City of Yakima	Project: NDPES Metals Monitoring 2012	
2220 E. Viola	Project Number: 1385	**Reported:**
Yakima WA, 98901	Project Manager: Jennifer Key	19-Sep-13 15:35

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch F309100 - EFGS-052 Closed Vessel Nitric Oven Digestion											
Matrix Spike Dup (F309100-MSD3)		**Source: 1309145-01RE1**			Prepared: 12-Sep-13 Analyzed: 13-Sep-13						
Selenium	95.71	-	3.00	µg/L	101.50	ND	94.3	59-149	1.75	20	AS
Matrix Spike Dup (F309100-MSD4)		**Source: 1309146-01RE1**			Prepared: 12-Sep-13 Analyzed: 13-Sep-13						
Selenium	96.49	-	3.00	µg/L	101.50	ND	95.1	59-149	0.00295	20	AS

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Liz Siska, Project Manager

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425.686.3096 Fax

City of Yakima	Project: NDPES Metals Monitoring 2012	
2220 E. Viola	Project Number: 1385	**Reported:**
Yakima WA, 98901	Project Manager: Jennifer Key	19-Sep-13 15:35

Notes and Definitions

U	Analyte was not detected and is reported as less than the LOD or as defined by the client. The LOD has been adjusted for any dilution or concentration of the sample.
R-05	The sample was diluted due to the presence of high levels of non-target analytes or particulates resulting in elevated reporting limits.
QM-13	The analytical spike recovery was outside control limits for the AS and/or ASD. The batch was accepted based on MS/MSD and LCS/LCSD recoveries within control limits.
QM-12	Continuing calibration verification (CCV) and/or blank spike/blank spike duplicate (BS/BSD) recoveries above upper control limits. All reported sample concentrations were below the reporting limit.
QB-04	The blank was preserved to 2% BrCl rather than 1%. The control limit for blanks preserved to greater than 1% BrCl is the preservation percentage multiplied by the MRL.
QB-02	The method blank and/or initial/continuing calibration blank contains analyte at a concentration above the MRL. However, the sample concentrations are less than the MRL.
QB-01	The method blank and/or initial/continuing calibration blank contains analyte at a concentration above the MRL. However, the blank concentration(s) are less than 10% of the sample result.
AS	This MS and/or MSD is an analytical spike and/or an analytical spike duplicate.
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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Liz Siska

Liz Siska, Project Manager

YAKIMA REGIONAL WASTE TER TREATMENT PLANT
ANALYTICAL RESULTS

Sample Origin: BIOSOLIDS PRIORITY POLLUTANT METALS
Sample Description: CENTRIFUGE CONVEYOR GRAB
Matrix: BIOSOLIDS
Date Received by Lab: 9/4/2013
Lab Sample No: 2013 Q3 BS PP

	Analytical Method	Results (Dry wt.)	Units	Detection Limit	Date Analyzed
A) Pollutants					
Antimony	SM3030D/SM3113B	ND	mg/kg	1	09/17/13
Arsenic	SM3030D/SM3113B	6.55	mg/kg	2	09/17/13
Beryllium	SM3030D/SM3113B	1.19	mg/kg	0.5	09/24/13
Cadmium	SM3030D/SM3113B	1.60	mg/kg	0.1	09/17/13
Chromium	SM3030D/SM3113B	43.1	mg/kg	0.2	09/13/13
Copper	SM3030D/SM3113B	353	mg/kg	2	09/18/13
Lead	SM3030D/SM3113B	95.4	mg/kg	2	09/17/13
Mercury	SM3112B	ND	mg/kg	0.9	09/25/13
Nickel	SM3030D/SM3113B	14.0	mg/kg	1	09/19/13
Selenium	SM3030D/SM3113B	ND	mg/kg	3	09/19/13
Silver	SM3030D/SM3113B	4.81	mg/kg	1	09/24/13
Thallium	SM3030D/SM3113B	ND	mg/kg	0.5	09/24/13
Zinc	SM3030D/SM3113B	1005	mg/kg	2	09/18/13

Chain of Custody Record & Laboratory Analysis Request: Air, Water, Sediments, Plant and Animal Tissue, Hydrocarbon & Other Samples

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Bothell, WA 98011
Phone: 425-686-1996
Fax: 425-686-3096
info@FrontierGS.com
http://www.FrontierGS.com

Client: City of Yakima Wastewater	Contact: Jennifer Key
Address: 2220 East Viola Yakima, WA 98901	Phone: same Fax: E-mail: same
Project Name: NPDES Metals Monitoring	Contract/PO: 1385
Report To: Jennifer Key	Invoice To: Carolyn Belles
Address: same	Address: 2220 East Viola Yakima, WA 98901
Phone: 575-6133 Fax:	Phone: Fax: 575-6116
E-mail: jkey@ci.yakima.wa.us	E-mail: Carolyn.Belles@yakimawa.gov

No.	Engraved Bottle ID	Sample ID	# of Bottles	Matrix	Date & Time	Sampled By	Field Filtered (Y/N)	Field Preserved: HNO_3 HCl BrCl Other (%)	Analyses Requested: ICP-MS* Total Metals	Hg-AFS Total Mercury				
1	B-131593	Field Blank	1 PETG	W	9/4/13 0800	JK/AP	N	N/A	X					
2	B-131600	"	"	W	9/4/13 0800	JK/AP	N	"		X				
3	B-131604	YRWWTP Influent	"	WW	9/4/13 0830	JK/AP	N	"	X					
4	B-131666	"	"	WW	9/4/13 0830	JK/AP	N	"		X				
5	B-131668	YRWWTP Effluent	"	WW	9/4/13 0815	JK/AP	N	"	X					
6	B-131692	"	"	WW	9/4/13 0815	JK/AP	N	"		X				
7														
8														
9														
10														
11														
12														

EFGS PM:
Date:
TAT (business days): **20** (std)
15 10 5 4 3 2 24 hrs.
(For TAT < 10 days, contact PM. Surcharges apply for expedited TAT)
Saturday delivery? ☐ Y ☐ N
(If yes, please contact PM)
EDD ☐ Y ☐ N
QA ☐ Standard ☐ High

Comments

*Total Metals Analyte List:
Antimony
Arsenic
Beryllium
Cadmium
Chromium
Copper
Lead
Molybdenum
Nickel
Selenium
Silver
Thallium
Zinc

Note: Field Blank poured into sampling vessel.

For Laboratory Use Only	
COC Seal:	Comments:
Cooler Temp:	
Carrier:	
VTSR:	
# of Coolers:	

Matrix Codes:
FW: Fresh Water
WW: Waste Water
SB: Sea and Brackish Water
SS: Soil and Sediment
TS: Plant and Animal Tissue
HC: Hydrocarbons
TR: Trap
OT: Other

Relinquished By: Jennifer Key	Received By:	Received By:
Name: Jennifer Key	Name:	Name:
Organization: City of Yakima	Organization:	Organization:
Date & Time: 9/4/13 0845	Date & Time:	Date & Time:

Tracking number: 8709 8032 5080

Sample Disposal:
☐ Return (shipping fees may apply)
☒ Standard Disposal – 30 Days after report
☐ Retain for ___ weeks after report (storage fees may apply)

By signing, you declare that you agree with EFGS' terms and conditions, and that you authorize EFGS to perform the specified analyses.

Customer Approval: Jennifer Key Date: 9/4/13

Phone: (425) 68 096
Fax: (425) 686-3096
http://www.FrontierGS.com

Eurofins Frontier Global Sciences

11720 North Creek wy. North
Suite 400
Bothell, WA 98011

Client: City of Yakima
Project:
Phone: 509-575-6077
Ship To: Jennifer Key
2220 E. Viola
Yakima, WA 98901

Date Required: 26-Aug
Date Submitted: 20-Aug
Lab WO#s:

Shipping Information:

Qty.	Size	Bottle/Jar Type	Lot #	Preservative	Lot#	Analyte(s)	Comments
3	250	PETG	1091920	N/A	N/A		
3	250	PETG	1091920	N/A	N/A		

Equipment	Length/Size	Qty.	Custom Setup
MF 15 Tubing			Y / N
MF 73 Tubing			Y / N
Teflon (0.25"OD) Tubing			Y / N
Inline (Gelman) Filter			Y / N
Vacuum Filter (0.45 micron)			Y / N
pH Paper			Y / N

2.5 L Reagent Water	0
COC(s)	x
Gloves (4 per Sample)	0
Custody Seals (1 per Cooler)	X
Temp Blank (1 per Cooler)	X

Notes: They have enough gloves already.

Lab PM:

See Reverse for Bottle Types, Preservation Handling Instructions

Date Shipped: 8-21-13 Initials: CD

CITY OF YAKIMA
WASTEWATER DIVISION
2220 East Viola
Yakima, Washington 98901
Phone: 575-6077 • Fax (509) 575-6116

December 13, 2013

Ian Laseke
Department of Ecology
Central Regional Office
15 W. Yakima Ave. Suite 200
Yakima, WA 98902

Dear Mr. Laseke,

Enclosed are the influent, effluent, and biosolid priority pollutant and organic priority pollutant analytical reports for the fourth calendar quarter of 2013.

These reports have been submitted to the Department of Ecology within forty-five (45) days of the end of the sampling period. Therefore, the report satisfies the requirements in § S3 A. of the City of Yakima's National Pollution Discharge Elimination System (NPDES) permit WA-002402-03, Sampling and Reporting Requirements.

If you have any questions, please call me at (509) 575-6133.

Sincerely,

Michael A Price

Mike Price
Process Control Supervisor

Yakima
All-America City
1994

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Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

29 October 2013

Jennifer Key
City of Yakima
2220 E. Viola
Yakima, WA 98901

RE: NDPES Metals Monitoring 2012

Enclosed are the analytical results for samples received by Eurofins Frontier Global Sciences. All quality control measurements are within established control limits and there were no analytical difficulties encountered with the exception of those listed in the case narrative section of this report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Liz Siska

Liz Siska
Project Manager

eurofins | Frontier Global Sciences

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425.686.1996 Phone
425.686.3096 Fax

City of Yakima	Project: NDPES Metals Monitoring 2012	
2220 E. Viola	Project Number: 1385	**Reported:**
Yakima WA, 98901	Project Manager: Jennifer Key	29-Oct-13 16:44

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Field Blank	1310230-01	Water	08-Oct-13 08:00	09-Oct-13 09:45
YRWWTP Influent	1310230-02	Water	08-Oct-13 08:45	09-Oct-13 09:45
YRWWTP Effluent	1310230-03	Water	08-Oct-13 08:20	09-Oct-13 09:45

Eurofins Frontier Global Sciences, Inc.

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Liz Siska

Liz Siska, Project Manager

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City of Yakima	Project: NDPES Metals Monitoring 2012	
2220 E. Viola	Project Number: 1385	**Reported:**
Yakima WA, 98901	Project Manager: Jennifer Key	29-Oct-13 16:44

SAMPLE RECEIPT

Samples were received at Eurofins Frontier Global Sciences (EFGS) on 10/9/2013 9:45:00 AM. The samples were received intact, within a sealed cooler at ambient temperature.

SAMPLE PREPARATION AND ANALYSIS

Samples were prepared and analyzed for total mercury by flow injection atomic fluorescence spectrometry (FI-AFS) in accordance with EPA 1631E.

Samples were prepared and analyzed for total recoverable metals by inductively coupled plasma mass spectrometry (ICP-MS) in accordance with EPA 1638 (EFGS-054).

ANALYTICAL AND QUALITY CONTROL ISSUES

Method blanks were prepared for every preparation to assess possible blank contribution from the sample preparation procedure. The method blanks were carried through the entire analytical procedure. All blanks fell within the established acceptance criteria with the exception of any items narrated above or flagged and described in the notes and definitions section of the report.

Liquid spikes, certified reference material (CRM) or a quality control samples (QCS) were prepared for every preparation as a measure of accuracy. All liquid spikes, CRMs and/or QCS samples fell within the established acceptance criteria with the exception of any items narrated above or flagged and described in the notes and definitions section of the report.

As an additional measure of the accuracy of the methods used and to check for matrix interference, matrix spikes (MS) and matrix spike duplicates (MSD) were digested and analyzed. All of the matrix spike recoveries fell within the established acceptance criteria with the exception of any items flagged and described in the notes and definitions section of the report.

A reasonable measure of the precision of the analytical methods is the relative percent difference (RPD) between a matrix spike recovery and a matrix spike duplicate recovery and between laboratory control sample recovery and laboratory control sample duplicate recoveries. All of the relative percent differences established acceptance criteria with the exception of any items flagged and described in the notes and definitions section of the report.

Eurofins Frontier Global Sciences, Inc.

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

Liz Siska

Liz Siska, Project Manager

EFGS Work Order: 1310230

Sample Receipt Checklist

Eurofins Frontier Global Sciences

Client: City of Yakima Date & Time Received: 10/9/13 0945 Date Logged In: 10/9/13 Date Labeled: 10/9/13

Project: NPDES Received By: AMB Logged By: AMB Labeled By: AMB

# of Coolers Received: 1 Samples Arrived By: ✓ Shipping Service ____ Courier ____ Hand ____ Other (Specify: ____)

Tracking/Airbill #: 8709 80325092 Coolant: ☒ None/Ambient ☐ Loose Ice ☐ Gel Ice ☐ Dry Ice

Coolant Required: Y (N) Temp Blank Used: Y (N) for Cooler(s): —

Cooler Information:	Y/N/NA	Comments
The coolers do not appear to be tampered with:	Y	
Custody Seals are present and intact:	Y	
Custody seals signed by:	Y	Jennifer Key

TID: —	CF: —	°C	Date/time: —	By: —
Cooler 1: °C	w/ CF: °C		Cooler 4: °C	w/ CF: °C
Cooler 2: °C	w/ CF: °C		Cooler 5: °C	w/ CF: °C
Cooler 3: °C	w/ CF: °C		Cooler 6: °C	w/ CF: °C

Chain of Custody:	Y/N/NA	Comments
Sample ID/Description:	Y	
Date and time of collection:	Y	
Sampled by:	Y	
Preservation type:	N/A	
Requested analyses:	Y	
Required signatures:	Y	
Internal COC required:	N	

Sample Condition/Integrity:	Y/N/NA	Comments
Sample containers intact/present:	Y	
Sample labels are present and legible:	Y	
Sample ID on container/bag matches COC:	Y	
Correct sample containers used:	Y	
Samples received within holding times:	Y	
Sample volume sufficient for requested analyses:	Y	
Correct preservative used for requested analyses:	N/A	
pH of preserved samples verified and recorded:	N/A	

Anomalies/Non-conformances (attach additional pages if needed):

Discussion/Resolution: Client Contacted: ____ Date/Time: ____ Method: ____

1310230

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Frontier Global Sciences

Chain of Custody Record & Laboratory Analysis Request: Air, Water, Sediments, Plant and Animal Tissue, Hydrocarbon & Other Samples

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Bothell, WA 98011
Phone: 425-686-1996
Fax: 425-686-3096
info@FrontierGS.com
http://www.FrontierGS.com

Client: City of Yakima Wastewater	Contact: Jennifer Key
Address: 2220 East Viola Yakima, WA 98901	Phone: same Fax: E-mail: same
Project Name: NPDES Metals Monitoring	Contract/PO: 1385
Report To: Jennifer Key	Invoice To: Carolyn Belles
Address: same	Address: 2220 East Viola Yakima, WA 98901
Phone: 575-6133 Fax:	Phone: Fax: 575-6116
E-mail: jkey@ci.yakima.wa.us	E-mail: Carolyn.Belles@yakimawa.gov

No.	Engraved Bottle ID	Sample ID	# of Bottles	Matrix	Date & Time	Sampled By	Field Filtered (Y/N)	Field Preserved: HNO_3 HCl BrCl Other (%)	Analyses Requested: ICP-MS* Total Metals	Hg-AFS Total Mercury					Comments
1	B-131154	Field Blank	1 PETG	W	10/08/13 0800	JK/AP	N	N/A	X						*Total Metals Analyte List: Antimony, Arsenic, Beryllium, Cadmium, Chromium, Copper, Lead, Molybdenum, Nickel, Selenium, Silver, Thallium, Zinc
2	B-131166	"	"	W	10/08/13 0800	JK/AP	N	"		X					
3	B-131188	YRWWTP Influent	"	WW	10/08/13 0845	JK/AP	N	"	X						
4	B-131191	"	"	WW	10/08/13 0845	JK/AP	N	"		X					
5	B-131197	YRWWTP Effluent	"	WW	10/08/13 0820	JK/AP	N	"	X						
6	B-131204	"	"	WW	10/08/13 0820	JK/AP	N	"		X					
7															*Note: Field Blank poured into sampling vessel.*
8															
9															
10															
11															
12															

EFGS PM:
Date:
TAT (business days): **20** (std) **15 10 5 4 3 2 24 hrs.**
(For TAT < 10 days, contact PM. Surcharges apply for expedited TAT)
Saturday delivery? ☐ Y ☐ N
(If yes, please contact PM)
EDD ☐ Y ☐ N
QA ☐ Standard ☐ High

For Laboratory Use Only

COC Seal: ✓intact	Comments:
Cooler Temp: ambient	
Carrier: FEDEX	
VTSR: 0945	
# of Coolers: 1	

Matrix Codes:
FW: Fresh Water
WW: Waste Water
SB: Sea and Brackish Water
SS: Soil and Sediment
TS: Plant and Animal Tissue
HC: Hydrocarbons
TR: Trap
OT: Other

Relinquished By: Jennifer Key	Received By:	Received By:
Name: Jennifer Key	Name: A. BAHM	Name:
Organization: City of Yakima	Organization: EFGS	Organization:
Date & Time: 10/08/13 0845	Date & Time: 10-9-13	Date & Time:
Tracking number: 8709 8032 5090	0945	

Sample Disposal:
☐ Return (shipping fees may apply)
☒ Standard Disposal – 30 Days after report
☐ Retain for ____ weeks after report (storage fees may apply)

By signing, you declare that you agree with EFGS' terms and conditions, and that you authorize EFGS to perform the specified analyses.

Customer Approval: Jennifer Miller Date: 10/08/13

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City of Yakima	Project: NDPES Metals Monitoring 2012	
2220 E. Viola	Project Number: 1385	**Reported:**
Yakima WA, 98901	Project Manager: Jennifer Key	29-Oct-13 16:44

Field Blank

1310230-01

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
Sample Preparation: EFGS-052 Closed Vessel Nitric Oven Digestion											
Silver	ND	-	0.020	µg/L	1	F310123	14-Oct-13	3J15005	15-Oct-13	EPA 1638	U
Arsenic	ND	-	0.30	µg/L	1	F310123	14-Oct-13	3J15005	15-Oct-13	EPA 1638	U
Beryllium	ND	-	0.020	µg/L	1	F310123	14-Oct-13	3J15005	15-Oct-13	EPA 1638	U
Cadmium	ND	-	0.020	µg/L	1	F310123	14-Oct-13	3J15005	15-Oct-13	EPA 1638	U
Chromium	ND	-	0.10	µg/L	1	F310123	14-Oct-13	3J15005	15-Oct-13	EPA 1638	U
Copper	ND	-	0.10	µg/L	1	F310123	14-Oct-13	3J15005	15-Oct-13	EPA 1638	U
Molybdenum	ND	-	0.200	µg/L	1	F310123	14-Oct-13	3J15005	15-Oct-13	EPA 1638	U
Nickel	ND	-	0.10	µg/L	1	F310123	14-Oct-13	3J15005	15-Oct-13	EPA 1638	U
Lead	ND	-	0.040	µg/L	1	F310123	14-Oct-13	3J15005	15-Oct-13	EPA 1638	U
Antimony	ND	-	0.020	µg/L	1	F310123	14-Oct-13	3J15005	15-Oct-13	EPA 1638	U
Selenium	ND	-	0.60	µg/L	1	F310123	14-Oct-13	3J15005	15-Oct-13	EPA 1638	U
Thallium	ND	-	0.020	µg/L	1	F310123	14-Oct-13	3J15005	15-Oct-13	EPA 1638	U
Zinc	ND	-	0.50	µg/L	1	F310123	14-Oct-13	3J15005	15-Oct-13	EPA 1638	U
Sample Preparation: EPA 1631E BrCl Oxidation											
Mercury	ND	-	0.50	ng/L	1	F310173	17-Oct-13	3J29010	17-Oct-13	EPA 1631E	U

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Liz Siska

Liz Siska, Project Manager

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Bothell, WA 98011
425.686.1996 Phone
425.686.3096 Fax

City of Yakima
2220 E. Viola
Yakima WA, 98901

Project: NDPES Metals Monitoring 2012
Project Number: 1385
Project Manager: Jennifer Key

Reported:
29-Oct-13 16:44

YRWWTP Influent

1310230-02

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
Sample Preparation: EFGS-052 Closed Vessel Nitric Oven Digestion											
Silver	ND	-	0.040	µg/L	2	F310123	14-Oct-13	3J15005	15-Oct-13	EPA 1638	R-05, U
Arsenic	**1.60**	-	0.60	µg/L	2	F310123	14-Oct-13	3J15005	15-Oct-13	EPA 1638	
Beryllium	ND	-	0.040	µg/L	2	F310123	14-Oct-13	3J15005	15-Oct-13	EPA 1638	R-05, U
Cadmium	**0.085**	-	0.040	µg/L	2	F310123	14-Oct-13	3J15005	15-Oct-13	EPA 1638	
Chromium	**0.93**	-	0.20	µg/L	2	F310123	14-Oct-13	3J15005	15-Oct-13	EPA 1638	
Copper	**11.7**	-	0.20	µg/L	2	F310123	14-Oct-13	3J15005	15-Oct-13	EPA 1638	
Molybdenum	**1.00**	-	0.400	µg/L	2	F310123	14-Oct-13	3J15005	15-Oct-13	EPA 1638	
Nickel	**1.19**	-	0.20	µg/L	2	F310123	14-Oct-13	3J15005	15-Oct-13	EPA 1638	
Lead	**1.14**	-	0.080	µg/L	2	F310123	14-Oct-13	3J15005	15-Oct-13	EPA 1638	
Antimony	**0.156**	-	0.040	µg/L	2	F310123	14-Oct-13	3J15005	15-Oct-13	EPA 1638	
Selenium	ND	-	1.20	µg/L	2	F310123	14-Oct-13	3J15005	15-Oct-13	EPA 1638	R-05, U
Thallium	ND	-	0.040	µg/L	2	F310123	14-Oct-13	3J15005	15-Oct-13	EPA 1638	R-05, U
Zinc	**70.3**	-	1.00	µg/L	2	F310123	14-Oct-13	3J15005	15-Oct-13	EPA 1638	
Sample Preparation: EPA 1631E BrCl Oxidation											
Mercury	**5.85**	-	0.50	ng/L	1	F310173	17-Oct-13	3J29010	17-Oct-13	EPA 1631E	

Eurofins Frontier Global Sciences, Inc.

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Liz Siska

Liz Siska, Project Manager

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City of Yakima	Project: NDPES Metals Monitoring 2012	
2220 E. Viola	Project Number: 1385	**Reported:**
Yakima WA, 98901	Project Manager: Jennifer Key	29-Oct-13 16:44

YRWWTP Effluent

1310230-03

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Sequence	Analyzed	Method	Notes
Sample Preparation: EFGS-052 Closed Vessel Nitric Oven Digestion											
Silver	**0.045**	-	0.020	µg/L	1	F310123	14-Oct-13	3J15005	15-Oct-13	EPA 1638	
Arsenic	**1.66**	-	0.30	µg/L	1	F310123	14-Oct-13	3J15005	15-Oct-13	EPA 1638	
Beryllium	ND	-	0.020	µg/L	1	F310123	14-Oct-13	3J15005	15-Oct-13	EPA 1638	U
Cadmium	**0.038**	-	0.020	µg/L	1	F310123	14-Oct-13	3J15005	15-Oct-13	EPA 1638	
Chromium	**0.66**	-	0.10	µg/L	1	F310123	14-Oct-13	3J15005	15-Oct-13	EPA 1638	
Copper	**6.33**	-	0.10	µg/L	1	F310123	14-Oct-13	3J15005	15-Oct-13	EPA 1638	
Molybdenum	**1.22**	-	0.200	µg/L	1	F310123	14-Oct-13	3J15005	15-Oct-13	EPA 1638	
Nickel	**1.44**	-	0.10	µg/L	1	F310123	14-Oct-13	3J15005	15-Oct-13	EPA 1638	
Lead	**0.379**	-	0.040	µg/L	1	F310123	14-Oct-13	3J15005	15-Oct-13	EPA 1638	
Antimony	**0.340**	-	0.020	µg/L	1	F310123	14-Oct-13	3J15005	15-Oct-13	EPA 1638	
Selenium	ND	-	0.60	µg/L	1	F310123	14-Oct-13	3J15005	15-Oct-13	EPA 1638	QB-02, U
Thallium	ND	-	0.020	µg/l	1	F310123	14-Oct-13	3J15005	15-Oct-13	EPA 1638	U
Zinc	**50.2**	-	0.50	µg/L	1	F310123	14-Oct-13	3J15005	15-Oct-13	EPA 1638	
Sample Preparation: EPA 1631E BrCl Oxidation											
Mercury	**4.79**	-	0.50	ng/L	1	F310173	17-Oct-13	3J29010	17-Oct-13	EPA 1631E	

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City of Yakima
2220 E. Viola
Yakima WA, 98901

Project: NDPES Metals Monitoring 2012
Project Number: 1385
Project Manager: Jennifer Key

Reported:
29-Oct-13 16:44

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3J29010 - F310173											
Cal Standard (3J29010-CAL1)					Prepared & Analyzed: 17-Oct-13						
Mercury	0.54	-		ng/L	0.50000		108				
Cal Standard (3J29010-CAL2)					Prepared & Analyzed: 17-Oct-13						
Mercury	0.99	-		ng/L	1.0000		99.1				
Cal Standard (3J29010-CAL3)					Prepared & Analyzed: 17-Oct-13						
Mercury	4.77	-		ng/L	5.0000		95.5				
Cal Standard (3J29010-CAL4)					Prepared & Analyzed: 17-Oct-13						
Mercury	19.74	-		ng/L	20.000		98.7				
Cal Standard (3J29010-CAL5)					Prepared & Analyzed: 17-Oct-13						
Mercury	39.61	-		ng/L	40.000		99.0				
Calibration Blank (3J29010-CCB1)					Prepared & Analyzed: 17-Oct-13						
Mercury	0.07	-		ng/L							
Calibration Blank (3J29010-CCB2)					Prepared & Analyzed: 17-Oct-13						
Mercury	0.05	-		ng/L							
Calibration Blank (3J29010-CCB3)					Prepared & Analyzed: 17-Oct-13						
Mercury	0.05	-		ng/L							
Calibration Blank (3J29010-CCB4)					Prepared & Analyzed: 17-Oct-13						
Mercury	-0.002	-		ng/L							U
Calibration Blank (3J29010-CCB5)					Prepared & Analyzed: 17-Oct-13						
Mercury	0.13	-		ng/L							

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City of Yakima	Project: NDPES Metals Monitoring 2012	
2220 E. Viola	Project Number: 1385	**Reported:**
Yakima WA, 98901	Project Manager: Jennifer Key	29-Oct-13 16:44

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3J29010 - F310173											
Calibration Blank (3J29010-CCB6)					Prepared & Analyzed: 17-Oct-13						
Mercury	0.05	-		ng/L							
Calibration Blank (3J29010-CCB7)					Prepared & Analyzed: 17-Oct-13						
Mercury	0.01	-		ng/L							
Calibration Blank (3J29010-CCB8)					Prepared & Analyzed: 17-Oct-13						
Mercury	0.03	-		ng/L							
Calibration Check (3J29010-CCV1)					Prepared & Analyzed: 17-Oct-13						
Mercury	5.05	-		ng/L	5.0100		101	77-123			
Calibration Check (3J29010-CCV2)					Prepared & Analyzed: 17-Oct-13						
Mercury	5.03	-		ng/L	5.0100		100	77-123			
Calibration Check (3J29010-CCV3)					Prepared & Analyzed: 17-Oct-13						
Mercury	4.91	-		ng/L	5.0100		97.9	77-123			
Calibration Check (3J29010-CCV4)					Prepared & Analyzed: 17-Oct-13						
Mercury	4.99	-		ng/L	5.0100		99.5	77-123			
Calibration Check (3J29010-CCV5)					Prepared & Analyzed: 17-Oct-13						
Mercury	4.94	-		ng/L	5.0100		98.6	77-123			
Calibration Check (3J29010-CCV6)					Prepared & Analyzed: 17-Oct-13						
Mercury	4.99	-		ng/L	5.0100		99.7	77-123			
Calibration Check (3J29010-CCV7)					Prepared & Analyzed: 17-Oct-13						
Mercury	5.10	-		ng/L	5.0100		102	77-123			

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City of Yakima 2220 E. Viola Yakima WA, 98901	Project: NDPES Metals Monitoring 2012 Project Number: 1385 Project Manager: Jennifer Key	Reported: 29-Oct-13 16:44

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3J29010 - F310173											
Instrument Blank (3J29010-IBL1)					Prepared & Analyzed: 17-Oct-13						
Mercury	ND	-	0.50	ng/L							U
Instrument Blank (3J29010-IBL2)					Prepared & Analyzed: 17-Oct-13						
Mercury	ND	-	0.50	ng/L							U
Instrument Blank (3J29010-IBL3)					Prepared & Analyzed: 17-Oct-13						
Mercury	ND	-	0.50	ng/L							U
Initial Cal Check (3J29010-ICV1)					Prepared & Analyzed: 17-Oct-13						
Mercury	4.91	-		ng/L	5.0100		98.1	77-123			
Batch F310173 - EPA 1631E BrCl Oxidation											
Blank (F310173-BLK1)					Prepared & Analyzed: 17-Oct-13						
Mercury	ND	-	0.50	ng/L							U
Blank (F310173-BLK2)					Prepared & Analyzed: 17-Oct-13						
Mercury	ND	-	0.50	ng/L							U
Blank (F310173-BLK3)					Prepared & Analyzed: 17-Oct-13						
Mercury	ND	-	0.50	ng/L							U
Blank (F310173-BLK4)					Prepared & Analyzed: 17-Oct-13						
Mercury	ND	-	0.50	ng/L							QB-04, U
LCS (F310173-BS1)					Prepared & Analyzed: 17-Oct-13						
Mercury	15.93	-	0.50	ng/L	15.679		102	77-123			

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City of Yakima	Project: NDPES Metals Monitoring 2012	
2220 E. Viola	Project Number: 1385	**Reported:**
Yakima WA, 98901	Project Manager: Jennifer Key	29-Oct-13 16:44

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch F310173 - EPA 1631E BrCl Oxidation											
LCS Dup (F310173-BSD1)					Prepared & Analyzed: 17-Oct-13						
Mercury	15.37	-	0.50	ng/L	15.679		98.0	77-123	3.62	24	
Duplicate (F310173-DUP1)		**Source: 1310256-02**			Prepared & Analyzed: 17-Oct-13						
Mercury	0.71	-	0.50	ng/L		0.70			1.01	24	
Matrix Spike (F310173-MS1)		**Source: 1310256-02**			Prepared & Analyzed: 17-Oct-13						
Mercury	3.23	-	0.50	ng/L	2.5500	0.70	99.1	71-125			
Matrix Spike (F310173-MS2)		**Source: 1310257-09**			Prepared & Analyzed: 17-Oct-13						
Mercury	23.80	-	0.50	ng/L	20.400	4.39	95.2	71-125			
Matrix Spike Dup (F310173-MSD1)		**Source: 1310256-02**			Prepared & Analyzed: 17-Oct-13						
Mercury	3.18	-	0.50	ng/L	2.5500	0.70	97.4	71-125	1.33	24	
Matrix Spike Dup (F310173-MSD2)		**Source: 1310257-09**			Prepared & Analyzed: 17-Oct-13						
Mercury	24.21	-	0.50	ng/L	20.400	4.39	97.2	71-125	1.71	24	

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Project: NDPES Metals Monitoring 2012
Project Number: 1385
Project Manager: Jennifer Key

Reported:
29-Oct-13 16:44

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3J15005 - F310123											
Cal Standard (3J15005-CAL1)					Prepared & Analyzed: 14-Oct-13						
Beryllium	0.033		-	µg/L	0.030000		110				
Chromium	0.05		-	µg/L	0.050000		104				
Nickel	0.05		-	µg/L	0.050000		95.4				
Copper	0.06		-	µg/L	0.050000		114				
Zinc	0.15		-	µg/L	0.10000		148				
Arsenic	0.09		-	µg/L	0.075000		125				
Molybdenum	0.034		-	µg/L	0.030000		112				
Silver	0.011		-	µg/L	0.010000		113				
Antimony	0.010		-	µg/L	0.010000		98.7				
Thallium	0.002		-	µg/L	0.0025000		80.4				
Lead	0.021		-	µg/L	0.020000		104				
Cal Standard (3J15005-CAL2)					Prepared & Analyzed: 14-Oct-13						
Beryllium	0.063		-	µg/L	0.060000		105				
Chromium	0.11		-	µg/L	0.10000		108				
Nickel	0.11		-	µg/L	0.10000		109				
Copper	0.11		-	µg/L	0.10000		112				
Zinc	0.20		-	µg/L	0.20000		97.7				
Arsenic	0.18		-	µg/L	0.15000		117				
Selenium	0.70		-	µg/L	0.60000		116				
Molybdenum	0.063		-	µg/L	0.060000		106				
Silver	0.023		-	µg/L	0.020000		114				
Cadmium	0.024		-	µg/L	0.020000		119				
Antimony	0.021		-	µg/L	0.020000		104				
Thallium	0.005		-	µg/L	0.0050000		91.0				
Lead	0.041		-	µg/L	0.040000		102				
Cal Standard (3J15005-CAL3)					Prepared & Analyzed: 14-Oct-13						
Beryllium	0.120		-	µg/L	0.12000		100				
Chromium	0.20		-	µg/L	0.20000		101				
Nickel	0.22		-	µg/L	0.20000		111				
Copper	0.21		-	µg/L	0.20000		107				
Zinc	0.42		-	µg/L	0.40000		104				
Arsenic	0.32		-	µg/L	0.30000		105				

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Project: NDPES Metals Monitoring 2012
Project Number: 1385
Project Manager: Jennifer Key

Reported:
29-Oct-13 16:44

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3J15005 - F310123											
Cal Standard (3J15005-CAL3)					Prepared & Analyzed: 14-Oct-13						
Selenium	1.20	-		µg/L	1.2000		99.8				
Molybdenum	0.127	-		µg/L	0.12000		106				
Silver	0.044	-		µg/L	0.040000		111				
Cadmium	0.048	-		µg/L	0.040000		119				
Antimony	0.041	-		µg/L	0.040000		102				
Thallium	0.009	-		µg/L	0.010000		88.7				
Lead	0.083	-		µg/L	0.080000		104				
Cal Standard (3J15005-CAL4)					Prepared & Analyzed: 14-Oct-13						
Beryllium	0.254	-		µg/L	0.25000		102				
Chromium	5.18	-		µg/L	5.0000		104				
Nickel	6.68	-		µg/L	6.2500		107				
Copper	6.76	-		µg/L	6.2500		108				
Zinc	12.70	-		µg/L	12.500		102				
Arsenic	5.22	-		µg/L	5.0000		104				
Selenium	4.63	-		µg/L	5.0000		92.6				
Molybdenum	2.550	-		µg/L	2.5000		102				
Silver	0.272	-		µg/L	0.25000		109				
Cadmium	0.523	-		µg/L	0.50000		105				
Antimony	0.251	-		µg/L	0.25000		100				
Thallium	0.250	-		µg/L	0.25000		100				
Lead	1.269	-		µg/L	1.2500		102				
Cal Standard (3J15005-CAL5)					Prepared & Analyzed: 14-Oct-13						
Beryllium	0.484	-		µg/L	0.50000		96.9				
Chromium	10.13	-		µg/L	10.000		101				
Nickel	12.73	-		µg/L	12.500		102				
Copper	13.01	-		µg/L	12.500		104				
Zinc	24.76	-		µg/L	25.000		99.0				
Arsenic	9.99	-		µg/L	10.000		99.9				
Selenium	9.94	-		µg/L	10.000		99.4				
Molybdenum	4.926	-		µg/L	5.0000		98.5				
Silver	0.522	-		µg/L	0.50000		104				
Cadmium	1.014	-		µg/L	1.0000		101				

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2220 E. Viola
Yakima WA, 98901

Project: NDPES Metals Monitoring 2012
Project Number: 1385
Project Manager: Jennifer Key

Reported:
29-Oct-13 16:44

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3J15005 - F310123											
Cal Standard (3J15005-CAL5)					Prepared & Analyzed: 14-Oct-13						
Antimony	0.493		-	µg/L	0.50000		98.6				
Thallium	0.487		-	µg/L	0.50000		97.4				
Lead	2.461		-	µg/L	2.5000		98.4				
Cal Standard (3J15005-CAL6)					Prepared & Analyzed: 14-Oct-13						
Beryllium	0.977		-	µg/L	1.0000		97.7				
Chromium	21.19		-	µg/L	20.000		106				
Nickel	27.11		-	µg/L	25.000		108				
Copper	27.29		-	µg/L	25.000		109				
Zinc	52.05		-	µg/L	50.000		104				
Arsenic	20.65		-	µg/L	20.000		103				
Selenium	19.44		-	µg/L	20.000		97.2				
Molybdenum	10.40		-	µg/L	10.000		104				
Silver	1.052		-	µg/L	1.0000		105				
Cadmium	2.067		-	µg/L	2.0000		103				
Antimony	1.021		-	µg/L	1.0000		102				
Thallium	1.012		-	µg/L	1.0000		101				
Lead	5.124		-	µg/L	5.0000		102				
Cal Standard (3J15005-CAL7)					Prepared & Analyzed: 14-Oct-13						
Beryllium	2.583		-	µg/L	2.5000		103				
Chromium	51.63		-	µg/L	50.000		103				
Nickel	65.75		-	µg/L	62.500		105				
Copper	66.87		-	µg/L	62.500		107				
Zinc	130.3		-	µg/L	125.00		104				
Arsenic	51.07		-	µg/L	50.000		102				
Selenium	50.98		-	µg/L	50.000		102				
Molybdenum	25.87		-	µg/L	25.000		103				
Silver	2.604		-	µg/L	2.5000		104				
Cadmium	5.171		-	µg/L	5.0000		103				
Antimony	2.523		-	µg/L	2.5000		101				
Thallium	2.528		-	µg/L	2.5000		101				
Lead	12.72		-	µg/L	12.500		102				

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City of Yakima	Project: NDPES Metals Monitoring 2012	
2220 E. Viola	Project Number: 1385	**Reported:**
Yakima WA, 98901	Project Manager: Jennifer Key	29-Oct-13 16:44

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3J15005 - F310123											
Cal Standard (3J15005-CAL8)					Prepared & Analyzed: 14-Oct-13						
Beryllium	4.965		-	µg/L	5.0000		99.3				
Chromium	98.93		-	µg/L	100.00		98.9				
Nickel	122.9		-	µg/L	125.00		98.3				
Copper	122.3		-	µg/L	125.00		97.8				
Zinc	246.9		-	µg/L	250.00		98.8				
Arsenic	99.33		-	µg/L	100.00		99.3				
Selenium	99.65		-	µg/L	100.00		99.6				
Molybdenum	49.49		-	µg/L	50.000		99.0				
Silver	4.934		-	µg/L	5.0000		98.7				
Cadmium	9.899		-	µg/L	10.000		99.0				
Antimony	4.985		-	µg/L	5.0000		99.7				
Thallium	4.985		-	µg/L	5.0000		99.7				
Lead	24.87		-	µg/L	25.000		99.5				
Calibration Blank (3J15005-CCB1)					Prepared & Analyzed: 14-Oct-13						
Beryllium	0.0005		-	µg/L							
Chromium	0.0003		-	µg/L							
Nickel	0.005		-	µg/L							
Copper	0.0004		-	µg/L							
Zinc	-0.001		-	µg/L							U
Arsenic	0.02		-	µg/L							
Selenium	0.38		-	µg/L							
Molybdenum	0.010		-	µg/L							
Silver	0.0007		-	µg/L							
Cadmium	0.001		-	µg/L							
Antimony	-0.00004		-	µg/L							U
Thallium	0.0004		-	µg/L							
Lead	0.001		-	µg/L							

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Project: NDPES Metals Monitoring 2012
Project Number: 1385
Project Manager: Jennifer Key

Reported:
29-Oct-13 16:44

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3J15005 - F310123											
Calibration Blank (3J15005-CCB2)				Prepared & Analyzed: 14-Oct-13							
Beryllium	0.0004		-	µg/L							
Chromium	-0.001		-	µg/L							U
Nickel	0.003		-	µg/L							
Copper	0.003		-	µg/L							
Zinc	-0.02		-	µg/L							U
Arsenic	0.02		-	µg/L							
Selenium	0.18		-	µg/L							
Molybdenum	0.014		-	µg/L							
Silver	0.0006		-	µg/L							
Cadmium	0.003		-	µg/L							
Antimony	-0.00003		-	µg/L							U
Thallium	0.0003		-	µg/L							
Lead	0.001		-	µg/L							
Calibration Blank (3J15005-CCB3)				Prepared & Analyzed: 14-Oct-13							
Beryllium	0.001		-	µg/L							
Chromium	0.004		-	µg/L							
Nickel	0.002		-	µg/L							
Copper	0.002		-	µg/L							
Zinc	0.009		-	µg/L							
Arsenic	0.01		-	µg/L							
Selenium	0.06		-	µg/L							
Molybdenum	0.010		-	µg/L							
Silver	0.0003		-	µg/L							
Cadmium	0.004		-	µg/L							
Antimony	-0.00003		-	µg/L							U
Thallium	0.0004		-	µg/L							
Lead	0.002		-	µg/L							

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City of Yakima	Project: NDPES Metals Monitoring 2012	
2220 E. Viola	Project Number: 1385	**Reported:**
Yakima WA, 98901	Project Manager: Jennifer Key	29-Oct-13 16:44

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3J15005 - F310123											
Calibration Blank (3J15005-CCB4)					Prepared & Analyzed: 14-Oct-13						
Beryllium	0.0002	-		µg/L							
Chromium	0.002	-		µg/L							
Nickel	0.004	-		µg/L							
Copper	0.007	-		µg/L							
Zinc	0.0008	-		µg/L							
Arsenic	0.02	-		µg/L							
Selenium	0.38	-		µg/L							
Molybdenum	0.016	-		µg/L							
Silver	0.0009	-		µg/L							
Cadmium	0.005	-		µg/L							
Antimony	0.0005	-		µg/L							
Thallium	0.0005	-		µg/L							
Lead	0.001	-		µg/L							
Calibration Blank (3J15005-CCB5)					Prepared: 14-Oct-13 Analyzed: 15-Oct-13						
Beryllium	0.0002	-		µg/L							
Chromium	-0.001	-		µg/L							U
Nickel	0.006	-		µg/L							
Copper	0.008	-		µg/L							
Zinc	-0.02	-		µg/L							U
Arsenic	0.004	-		µg/L							
Selenium	0.03	-		µg/L							
Molybdenum	0.014	-		µg/L							
Silver	0.001	-		µg/L							
Cadmium	0.005	-		µg/L							
Antimony	0.00007	-		µg/L							
Thallium	0.0003	-		µg/L							
Lead	0.001	-		µg/L							

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City of Yakima
2220 E. Viola
Yakima WA, 98901

Project: NDPES Metals Monitoring 2012
Project Number: 1385
Project Manager: Jennifer Key

Reported:
29-Oct-13 16:44

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3J15005 - F310123											
Calibration Blank (3J15005-CCB6)					Prepared: 14-Oct-13 Analyzed: 15-Oct-13						
Beryllium	0.0007	-		µg/L							
Chromium	0.002	-		µg/L							
Nickel	0.004	-		µg/L							
Copper	0.009	-		µg/L							
Zinc	-0.01	-		µg/L							U
Arsenic	0.02	-		µg/L							
Selenium	0.53	-		µg/L							
Molybdenum	0.013	-		µg/L							
Silver	0.0008	-		µg/L							
Cadmium	0.010	-		µg/L							
Antimony	0.0002	-		µg/L							
Thallium	0.0002	-		µg/L							
Lead	0.0008	-		µg/L							
Calibration Blank (3J15005-CCB7)					Prepared: 14-Oct-13 Analyzed: 15-Oct-13						
Beryllium	0.0002	-		µg/L							
Chromium	-0.001	-		µg/L							U
Nickel	0.002	-		µg/L							
Copper	0.007	-		µg/L							
Zinc	-0.01	-		µg/L							U
Arsenic	0.007	-		µg/L							
Selenium	0.21	-		µg/L							
Molybdenum	0.011	-		µg/L							
Silver	0.001	-		µg/L							
Cadmium	0.010	-		µg/L							
Antimony	0.0002	-		µg/L							
Thallium	0.00004	-		µg/L							
Lead	0.0008	-		µg/L							

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City of Yakima
2220 E. Viola
Yakima WA, 98901

Project: NDPES Metals Monitoring 2012
Project Number: 1385
Project Manager: Jennifer Key

Reported:
29-Oct-13 16:44

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3J15005 - F310123											
Calibration Blank (3J15005-CCB8)					Prepared: 14-Oct-13 Analyzed: 15-Oct-13						
Beryllium	0.003	-		µg/L							
Chromium	0.004	-		µg/L							
Nickel	0.005	-		µg/L							
Copper	0.009	-		µg/L							
Zinc	-0.01	-		µg/L							U
Arsenic	0.009	-		µg/L							
Selenium	0.28	-		µg/L							
Molybdenum	0.013	-		µg/L							
Silver	0.002	-		µg/L							
Cadmium	0.006	-		µg/L							
Antimony	0.0003	-		µg/L							
Thallium	0.0004	-		µg/L							
Lead	0.001	-		µg/L							
Calibration Blank (3J15005-CCB9)					Prepared: 14-Oct-13 Analyzed: 15-Oct-13						
Beryllium	0.001	-		µg/L							
Chromium	0.00	-		µg/L							U
Nickel	0.002	-		µg/L							
Copper	0.005	-		µg/L							
Zinc	-0.02	-		µg/L							U
Arsenic	0.02	-		µg/L							
Selenium	0.30	-		µg/L							
Molybdenum	0.015	-		µg/L							
Silver	0.001	-		µg/L							
Cadmium	0.003	-		µg/L							
Antimony	0.0003	-		µg/L							
Thallium	0.0005	-		µg/L							
Lead	0.002	-		µg/L							

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City of Yakima
2220 E. Viola
Yakima WA, 98901

Project: NDPES Metals Monitoring 2012
Project Number: 1385
Project Manager: Jennifer Key

Reported:
29-Oct-13 16:44

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3J15005 - F310123											
Calibration Blank (3J15005-CCBA)					Prepared: 14-Oct-13 Analyzed: 15-Oct-13						
Beryllium	0.001	-		µg/L							
Chromium	0.005	-		µg/L							
Nickel	0.006	-		µg/L							
Copper	0.006	-		µg/L							
Zinc	-0.006	-		µg/L							U
Arsenic	0.06	-		µg/L							
Selenium	0.62	-		µg/L							QB-10
Molybdenum	0.028	-		µg/L							
Silver	0.004	-		µg/L							
Cadmium	0.006	-		µg/L							
Antimony	0.001	-		µg/L							
Thallium	0.001	-		µg/L							
Lead	0.196	-		µg/L							QB-10
Calibration Blank (3J15005-CCBB)					Prepared: 14-Oct-13 Analyzed: 15-Oct-13						
Beryllium	0.0005	-		µg/L							
Chromium	0.006	-		µg/L							
Nickel	0.009	-		µg/L							
Copper	0.009	-		µg/L							
Zinc	-0.009	-		µg/L							U
Arsenic	0.03	-		µg/L							
Selenium	0.43	-		µg/L							
Molybdenum	0.022	-		µg/L							
Silver	0.002	-		µg/L							
Cadmium	0.007	-		µg/L							
Antimony	0.001	-		µg/L							
Thallium	0.0004	-		µg/L							
Lead	0.003	-		µg/L							

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2220 E. Viola	Project Number: 1385	**Reported:**
Yakima WA, 98901	Project Manager: Jennifer Key	29-Oct-13 16:44

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3J15005 - F310123											
Calibration Blank (3J15005-CCBC)					Prepared: 14-Oct-13 Analyzed: 15-Oct-13						
Beryllium	0.000	-		µg/L							U
Chromium	0.01	-		µg/L							
Nickel	0.01	-		µg/L							
Copper	0.007	-		µg/L							
Zinc	-0.02	-		µg/L							U
Arsenic	0.04	-		µg/L							
Selenium	0.13	-		µg/L							
Molybdenum	0.028	-		µg/L							
Silver	0.003	-		µg/L							
Cadmium	0.008	-		µg/L							
Antimony	0.0002	-		µg/L							
Thallium	0.0003	-		µg/L							
Lead	0.002	-		µg/L							
Calibration Blank (3J15005-CCBD)					Prepared: 14-Oct-13 Analyzed: 15-Oct-13						
Beryllium	0.0002	-		µg/L							
Chromium	0.002	-		µg/L							
Nickel	0.006	-		µg/L							
Copper	0.009	-		µg/L							
Zinc	-0.01	-		µg/L							U
Arsenic	0.03	-		µg/L							
Selenium	0.04	-		µg/L							
Molybdenum	0.047	-		µg/L							
Silver	0.002	-		µg/L							
Cadmium	0.006	-		µg/L							
Antimony	0.0002	-		µg/L							
Thallium	0.0003	-		µg/L							
Lead	0.0007	-		µg/L							

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City of Yakima	Project: NDPES Metals Monitoring 2012	
2220 E. Viola	Project Number: 1385	Reported:
Yakima WA, 98901	Project Manager: Jennifer Key	29-Oct-13 16:44

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3J15005 - F310123											
Calibration Blank (3J15005-CCBE)					Prepared: 14-Oct-13 Analyzed: 15-Oct-13						
Beryllium	0.0004	-		µg/L							
Chromium	0.006	-		µg/L							
Nickel	0.008	-		µg/L							
Copper	0.009	-		µg/L							
Zinc	-0.007	-		µg/L							U
Arsenic	0.03	-		µg/L							
Selenium	0.39	-		µg/L							
Molybdenum	0.025	-		µg/L							
Silver	0.005	-		µg/L							
Cadmium	0.010	-		µg/L							
Antimony	0.001	-		µg/L							
Thallium	0.0004	-		µg/L							
Lead	0.004	-		µg/L							
Calibration Blank (3J15005-CCBF)					Prepared: 14-Oct-13 Analyzed: 15-Oct-13						
Beryllium	0.0005	-		µg/L							
Chromium	0.01	-		µg/L							
Nickel	0.01	-		µg/L							
Copper	0.01	-		µg/L							
Zinc	-0.004	-		µg/L							U
Arsenic	0.02	-		µg/L							
Selenium	0.24	-		µg/L							
Molybdenum	0.024	-		µg/L							
Silver	0.004	-		µg/L							
Cadmium	0.002	-		µg/L							
Antimony	0.001	-		µg/L							
Thallium	0.001	-		µg/L							
Lead	0.009	-		µg/L							

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City of Yakima	Project: NDPES Metals Monitoring 2012	
2220 E. Viola	Project Number: 1385	**Reported:**
Yakima WA, 98901	Project Manager: Jennifer Key	29-Oct-13 16:44

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3J15005 - F310123											
Calibration Check (3J15005-CCV1)					Prepared & Analyzed: 14-Oct-13						
Beryllium	1.002	-		µg/L	1.0018		100	75-125			
Chromium	49.19	-		µg/L	50.000		98.4	85-115			
Nickel	49.35	-		µg/L	50.000		98.7	86-114			
Copper	50.05	-		µg/L	49.980		100	80-120			
Zinc	50.31	-		µg/L	50.000		101	79-121			
Arsenic	49.56	-		µg/L	50.040		99.0	85-115			
Selenium	50.87	-		µg/L	49.980		102	73-127			
Molybdenum	9.886	-		µg/L	10.000		98.9	85-115			
Silver	1.030	-		µg/L	0.99980		103	93-107			
Cadmium	5.087	-		µg/L	5.0020		102	95-105			
Antimony	1.033	-		µg/L	1.0000		103	90-110			
Thallium	1.023	-		µg/L	1.0000		102	82-118			
Lead	10.11	-		µg/L	10.002		101	91-109			
Calibration Check (3J15005-CCV2)					Prepared & Analyzed: 14-Oct-13						
Beryllium	1.022	-		µg/L	1.0018		102	75-125			
Chromium	49.92	-		µg/L	50.000		99.8	85-115			
Nickel	49.20	-		µg/L	50.000		98.4	86-114			
Copper	50.56	-		µg/L	49.980		101	80-120			
Zinc	50.17	-		µg/L	50.000		100	79-121			
Arsenic	49.70	-		µg/L	50.040		99.3	85-115			
Selenium	48.31	-		µg/L	49.980		96.7	73-127			
Molybdenum	10.10	-		µg/L	10.000		101	85-115			
Silver	1.055	-		µg/L	0.99980		106	93-107			
Cadmium	5.079	-		µg/L	5.0020		102	95-105			
Antimony	1.027	-		µg/L	1.0000		103	90-110			
Thallium	1.028	-		µg/L	1.0000		103	82-118			
Lead	10.20	-		µg/L	10.002		102	91-109			

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City of Yakima
2220 E. Viola
Yakima WA, 98901

Project: NDPES Metals Monitoring 2012
Project Number: 1385
Project Manager: Jennifer Key

Reported:
29-Oct-13 16:44

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3J15005 - F310123											
Calibration Check (3J15005-CCV3)					Prepared & Analyzed: 14-Oct-13						
Beryllium	1.014		-	µg/L	1.0018		101	75-125			
Chromium	48.99		-	µg/L	50.000		98.0	85-115			
Nickel	49.11		-	µg/L	50.000		98.2	86-114			
Copper	50.27		-	µg/L	49.980		101	80-120			
Zinc	49.31		-	µg/L	50.000		98.6	79-121			
Arsenic	50.36		-	µg/L	50.040		101	85-115			
Selenium	50.20		-	µg/L	49.980		100	73-127			
Molybdenum	9.960		-	µg/L	10.000		99.6	85-115			
Silver	1.045		-	µg/L	0.99980		105	93-107			
Cadmium	5.228		-	µg/L	5.0020		105	95-105			
Antimony	1.043		-	µg/L	1.0000		104	90-110			
Thallium	1.019		-	µg/L	1.0000		102	82-118			
Lead	10.09		-	µg/L	10.002		101	91-109			
Calibration Check (3J15005-CCV4)					Prepared & Analyzed: 14-Oct-13						
Beryllium	1.053		-	µg/L	1.0018		105	75-125			
Chromium	48.81		-	µg/L	50.000		97.6	85-115			
Nickel	48.92		-	µg/L	50.000		97.8	86-114			
Copper	49.45		-	µg/L	49.980		98.9	80-120			
Zinc	49.56		-	µg/L	50.000		99.1	79-121			
Arsenic	50.06		-	µg/L	50.040		100	85-115			
Selenium	51.07		-	µg/L	49.980		102	73-127			
Molybdenum	10.05		-	µg/L	10.000		101	85-115			
Silver	1.051		-	µg/L	0.99980		105	93-107			
Cadmium	5.248		-	µg/L	5.0020		105	95-105			
Antimony	1.054		-	µg/L	1.0000		105	90-110			
Thallium	1.020		-	µg/L	1.0000		102	82-118			
Lead	10.14		-	µg/L	10.002		101	91-109			

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City of Yakima	Project: NDPES Metals Monitoring 2012	
2220 E. Viola	Project Number: 1385	**Reported:**
Yakima WA, 98901	Project Manager: Jennifer Key	29-Oct-13 16:44

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3J15005 - F310123											
Calibration Check (3J15005-CCV5)					Prepared: 14-Oct-13 Analyzed: 15-Oct-13						
Beryllium	1.022	-		µg/L	1.0018		102	75-125			
Chromium	48.04	-		µg/L	50.000		96.1	85-115			
Nickel	46.89	-		µg/L	50.000		93.8	86-114			
Copper	48.38	-		µg/L	49.980		96.8	80-120			
Zinc	48.82	-		µg/L	50.000		97.6	79-121			
Arsenic	49.17	-		µg/L	50.040		98.3	85-115			
Selenium	50.13	-		µg/L	49.980		100	73-127			
Molybdenum	9.864	-		µg/L	10.000		98.6	85-115			
Silver	1.021	-		µg/L	0.99980		102	93-107			
Cadmium	5.050	-		µg/L	5.0020		101	95-105			
Antimony	1.069	-		µg/L	1.0000		107	90-110			
Thallium	1.019	-		µg/L	1.0000		102	82-118			
Lead	10.17	-		µg/L	10.002		102	91-109			
Calibration Check (3J15005-CCV6)					Prepared: 14-Oct-13 Analyzed: 15-Oct-13						
Beryllium	1.045	-		µg/L	1.0018		104	75-125			
Chromium	47.94	-		µg/L	50.000		95.9	85-115			
Nickel	46.96	-		µg/L	50.000		93.9	86-114			
Copper	48.01	-		µg/L	49.980		96.1	80-120			
Zinc	49.23	-		µg/L	50.000		98.5	79-121			
Arsenic	49.66	-		µg/L	50.040		99.2	85-115			
Selenium	51.30	-		µg/L	49.980		103	73-127			
Molybdenum	9.588	-		µg/L	10.000		95.9	85-115			
Silver	1.022	-		µg/L	0.99980		102	93-107			
Cadmium	5.094	-		µg/L	5.0020		102	95-105			
Antimony	1.062	-		µg/L	1.0000		106	90-110			
Thallium	0.996	-		µg/L	1.0000		99.6	82-118			
Lead	9.930	-		µg/L	10.002		99.3	91-109			

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City of Yakima
2220 E. Viola
Yakima WA, 98901

Project: NDPES Metals Monitoring 2012
Project Number: 1385
Project Manager: Jennifer Key

Reported:
29-Oct-13 16:44

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3J15005 - F310123											
Calibration Check (3J15005-CCV7)					Prepared: 14-Oct-13 Analyzed: 15-Oct-13						
Beryllium	1.054	-		µg/L	1.0018		105	75-125			
Chromium	48.50	-		µg/L	50.000		97.0	85-115			
Nickel	47.61	-		µg/L	50.000		95.2	86-114			
Copper	48.62	-		µg/L	49.980		97.3	80-120			
Zinc	49.39	-		µg/L	50.000		98.8	79-121			
Arsenic	50.09	-		µg/L	50.040		100	85-115			
Selenium	50.67	-		µg/L	49.980		101	73-127			
Molybdenum	9.824	-		µg/L	10.000		98.2	85-115			
Silver	1.016	-		µg/L	0.99980		102	93-107			
Cadmium	5.072	-		µg/L	5.0020		101	95-105			
Antimony	1.072	-		µg/L	1.0000		107	90-110			
Thallium	1.018	-		µg/L	1.0000		102	82-118			
Lead	10.10	-		µg/L	10.002		101	91-109			
Calibration Check (3J15005-CCV8)					Prepared: 14-Oct-13 Analyzed: 15-Oct-13						
Beryllium	1.082	-		µg/L	1.0018		108	75-125			
Chromium	47.98	-		µg/L	50.000		96.0	85-115			
Nickel	47.71	-		µg/L	50.000		95.4	86-114			
Copper	48.08	-		µg/L	49.980		96.2	80-120			
Zinc	49.16	-		µg/L	50.000		98.3	79-121			
Arsenic	49.23	-		µg/L	50.040		98.4	85-115			
Selenium	50.81	-		µg/L	49.980		102	73-127			
Molybdenum	9.769	-		µg/L	10.000		97.7	85-115			
Silver	1.019	-		µg/L	0.99980		102	93-107			
Cadmium	5.132	-		µg/L	5.0020		103	95-105			
Antimony	1.065	-		µg/L	1.0000		107	90-110			
Thallium	1.033	-		µg/L	1.0000		103	82-118			
Lead	10.28	-		µg/L	10.002		103	91-109			

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2220 E. Viola
Yakima WA, 98901

Project: NDPES Metals Monitoring 2012
Project Number: 1385
Project Manager: Jennifer Key

Reported:
29-Oct-13 16:44

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3J15005 - F310123											
Calibration Check (3J15005-CCV9)					Prepared: 14-Oct-13 Analyzed: 15-Oct-13						
Beryllium	1.074	-		µg/L	1.0018		107	75-125			
Chromium	47.84	-		µg/L	50.000		95.7	85-115			
Nickel	47.23	-		µg/L	50.000		94.5	86-114			
Copper	47.39	-		µg/L	49.980		94.8	80-120			
Zinc	48.64	-		µg/L	50.000		97.3	79-121			
Arsenic	50.51	-		µg/L	50.040		101	85-115			
Selenium	51.02	-		µg/L	49.980		102	73-127			
Molybdenum	9.607	-		µg/L	10.000		96.1	85-115			
Silver	0.996	-		µg/L	0.99980		99.7	93-107			
Cadmium	5.016	-		µg/L	5.0020		100	95-105			
Antimony	1.065	-		µg/L	1.0000		106	90-110			
Thallium	1.030	-		µg/L	1.0000		103	82-118			
Lead	10.26	-		µg/L	10.002		103	91-109			
Calibration Check (3J15005-CCVA)					Prepared: 14-Oct-13 Analyzed: 15-Oct-13						
Beryllium	1.040	-		µg/L	1.0018		104	75-125			
Chromium	46.50	-		µg/L	50.000		93.0	85-115			
Nickel	46.07	-		µg/L	50.000		92.1	86-114			
Copper	46.75	-		µg/L	49.980		93.5	80-120			
Zinc	48.27	-		µg/L	50.000		96.5	79-121			
Arsenic	49.03	-		µg/L	50.040		98.0	85-115			
Selenium	50.53	-		µg/L	49.980		101	73-127			
Molybdenum	9.431	-		µg/L	10.000		94.3	85-115			
Silver	0.995	-		µg/L	0.99980		99.5	93-107			
Cadmium	4.943	-		µg/L	5.0020		98.8	95-105			
Antimony	1.028	-		µg/L	1.0000		103	90-110			
Thallium	1.010	-		µg/L	1.0000		101	82-118			
Lead	10.03	-		µg/L	10.002		100	91-109			

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Project: NDPES Metals Monitoring 2012
Project Number: 1385
Project Manager: Jennifer Key

Reported:
29-Oct-13 16:44

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3J15005 - F310123											
Calibration Check (3J15005-CCVB)					Prepared: 14-Oct-13 Analyzed: 15-Oct-13						
Beryllium	1.086		-	µg/L	1.0018		108	75-125			
Chromium	45.66		-	µg/L	50.000		91.3	85-115			
Nickel	45.09		-	µg/L	50.000		90.2	86-114			
Copper	46.06		-	µg/L	49.980		92.2	80-120			
Zinc	47.41		-	µg/L	50.000		94.8	79-121			
Arsenic	48.70		-	µg/L	50.040		97.3	85-115			
Selenium	51.41		-	µg/L	49.980		103	73-127			
Molybdenum	9.387		-	µg/L	10.000		93.9	85-115			
Silver	0.970		-	µg/L	0.99980		97.0	93-107			
Cadmium	4.978		-	µg/L	5.0020		99.5	95-105			
Antimony	1.070		-	µg/L	1.0000		107	90-110			
Thallium	1.034		-	µg/L	1.0000		103	82-118			
Lead	10.15		-	µg/L	10.002		102	91-109			
Calibration Check (3J15005-CCVC)					Prepared: 14-Oct-13 Analyzed: 15-Oct-13						
Beryllium	1.050		-	µg/L	1.0018		105	75-125			
Chromium	46.20		-	µg/L	50.000		92.4	85-115			
Nickel	45.48		-	µg/L	50.000		91.0	86-114			
Copper	46.13		-	µg/L	49.980		92.3	80-120			
Zinc	48.11		-	µg/L	50.000		96.2	79-121			
Arsenic	49.56		-	µg/L	50.040		99.0	85-115			
Selenium	49.51		-	µg/L	49.980		99.1	73-127			
Molybdenum	9.394		-	µg/L	10.000		93.9	85-115			
Silver	0.982		-	µg/L	0.99980		98.2	93-107			
Cadmium	4.931		-	µg/L	5.0020		98.6	95-105			
Antimony	1.048		-	µg/L	1.0000		105	90-110			
Thallium	1.030		-	µg/L	1.0000		103	82-118			
Lead	10.18		-	µg/L	10.002		102	91-109			

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Project: NDPES Metals Monitoring 2012
Project Number: 1385
Project Manager: Jennifer Key

Reported:
29-Oct-13 16:44

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3J15005 - F310123											
Calibration Check (3J15005-CCVD)					Prepared: 14-Oct-13 Analyzed: 15-Oct-13						
Beryllium	1.014	-		µg/L	1.0018		101	75-125			
Chromium	45.87	-		µg/L	50.000		91.7	85-115			
Nickel	45.32	-		µg/L	50.000		90.6	86-114			
Copper	45.55	-		µg/L	49.980		91.1	80-120			
Zinc	48.27	-		µg/L	50.000		96.5	79-121			
Arsenic	48.62	-		µg/L	50.040		97.2	85-115			
Selenium	50.97	-		µg/L	49.980		102	73-127			
Molybdenum	9.491	-		µg/L	10.000		94.9	85-115			
Silver	0.970	-		µg/L	0.99980		97.0	93-107			
Cadmium	4.936	-		µg/L	5.0020		98.7	95-105			
Antimony	1.049	-		µg/L	1.0000		105	90-110			
Thallium	1.040	-		µg/L	1.0000		104	82-118			
Lead	10.29	-		µg/L	10.002		103	91-109			
Calibration Check (3J15005-CCVE)					Prepared: 14-Oct-13 Analyzed: 15-Oct-13						
Beryllium	0.989	-		µg/L	1.0018		98.7	75-125			
Chromium	46.70	-		µg/L	50.000		93.4	85-115			
Nickel	46.39	-		µg/L	50.000		92.8	86-114			
Copper	47.29	-		µg/L	49.980		94.6	80-120			
Zinc	48.29	-		µg/L	50.000		96.6	79-121			
Arsenic	49.45	-		µg/L	50.040		98.8	85-115			
Selenium	49.73	-		µg/L	49.980		99.5	73-127			
Molybdenum	9.598	-		µg/L	10.000		96.0	85-115			
Silver	1.004	-		µg/L	0.99980		100	93-107			
Cadmium	4.946	-		µg/L	5.0020		98.9	95-105			
Antimony	1.039	-		µg/L	1.0000		104	90-110			
Thallium	1.033	-		µg/L	1.0000		103	82-118			
Lead	10.25	-		µg/L	10.002		102	91-109			

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Project: NDPES Metals Monitoring 2012
Project Number: 1385
Project Manager: Jennifer Key

Reported:
29-Oct-13 16:44

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3J15005 - F310123											
Calibration Check (3J15005-CCVF)					Prepared: 14-Oct-13 Analyzed: 15-Oct-13						
Beryllium	0.998		-	µg/L	1.0018		99.6	75-125			
Chromium	46.37		-	µg/L	50.000		92.7	85-115			
Nickel	45.32		-	µg/L	50.000		90.6	86-114			
Copper	46.63		-	µg/L	49.980		93.3	80-120			
Zinc	48.03		-	µg/L	50.000		96.1	79-121			
Arsenic	48.40		-	µg/L	50.040		96.7	85-115			
Selenium	50.42		-	µg/L	49.980		101	73-127			
Molybdenum	9.419		-	µg/L	10.000		94.2	85-115			
Silver	0.979		-	µg/L	0.99980		97.9	93-107			
Cadmium	4.901		-	µg/L	5.0020		98.0	95-105			
Antimony	1.034		-	µg/L	1.0000		103	90-110			
Thallium	1.025		-	µg/L	1.0000		102	82-118			
Lead	10.20		-	µg/L	10.002		102	91-109			
Initial Cal Blank (3J15005-ICB1)					Prepared & Analyzed: 14-Oct-13						
Beryllium	0.0009		-	µg/L							
Chromium	0.003		-	µg/L							
Nickel	0.004		-	µg/L							
Copper	0.002		-	µg/L							
Zinc	0.006		-	µg/L							
Arsenic	0.01		-	µg/L							
Selenium	0.52		-	µg/L							
Molybdenum	0.012		-	µg/L							
Silver	0.0003		-	µg/L							
Cadmium	-0.0001		-	µg/L							U
Antimony	0.00006		-	µg/L							
Thallium	0.0003		-	µg/L							
Lead	0.0009		-	µg/L							

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Project: NDPES Metals Monitoring 2012
Project Number: 1385
Project Manager: Jennifer Key

Reported:
29-Oct-13 16:44

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3J15005 - F310123											
Initial Cal Check (3J15005-ICV1)					Prepared & Analyzed: 14-Oct-13						
Beryllium	1.029	-		µg/L	1.0018		103	75-125			
Chromium	48.68	-		µg/L	50.000		97.4	85-115			
Nickel	47.84	-		µg/L	50.000		95.7	86-114			
Copper	48.75	-		µg/L	49.980		97.5	80-120			
Zinc	49.03	-		µg/L	50.000		98.1	79-121			
Arsenic	49.52	-		µg/L	50.040		99.0	85-115			
Selenium	50.22	-		µg/L	49.980		100	73-127			
Molybdenum	9.777	-		µg/L	10.000		97.8	85-115			
Silver	1.011	-		µg/L	0.99980		101	93-107			
Cadmium	4.970	-		µg/L	5.0020		99.4	95-105			
Antimony	1.028	-		µg/L	1.0000		103	90-110			
Thallium	1.031	-		µg/L	1.0000		103	82-118			
Lead	10.23	-		µg/L	10.002		102	91-109			
Batch F310123 - EFGS-052 Closed Vessel Nitric Oven Digestion											
Blank (F310123-BLK1)					Prepared: 14-Oct-13 Analyzed: 15-Oct-13						
Beryllium	ND	-	0.020	µg/L							U
Chromium	ND	-	0.10	µg/L							U
Nickel	ND	-	0.10	µg/L							U
Copper	ND	-	0.10	µg/L							U
Zinc	ND	-	0.50	µg/L							U
Arsenic	ND	-	0.30	µg/L							U
Selenium	ND	-	0.59	µg/L							U
Molybdenum	ND	-	0.198	µg/L							U
Silver	ND	-	0.020	µg/L							U
Cadmium	ND	-	0.020	µg/L							U
Antimony	ND	-	0.020	µg/L							U
Thallium	ND	-	0.020	µg/L							U
Lead	ND	-	0.040	µg/L							U

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Project: NDPES Metals Monitoring 2012
Project Number: 1385
Project Manager: Jennifer Key

Reported:
29-Oct-13 16:44

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch F310123 - EFGS-052 Closed Vessel Nitric Oven Digestion											
Blank (F310123-BLK2)					Prepared: 14-Oct-13 Analyzed: 15-Oct-13						
Beryllium	ND	-	0.020	µg/L							U
Chromium	ND	-	0.10	µg/L							U
Nickel	ND	-	0.10	µg/L							U
Copper	ND	-	0.10	µg/L							U
Zinc	ND	-	0.50	µg/L							U
Arsenic	ND	-	0.30	µg/L							U
Selenium	ND	-	0.59	µg/L							U
Molybdenum	ND	-	0.198	µg/L							U
Silver	ND	-	0.020	µg/L							U
Cadmium	ND	-	0.020	µg/L							U
Antimony	ND	-	0.020	µg/L							U
Thallium	ND	-	0.020	µg/L							U
Lead	ND	-	0.040	µg/L							U
LCS (F310123-BS1)					Prepared: 14-Oct-13 Analyzed: 15-Oct-13						
Beryllium	1.124	-	0.099	µg/L	1.0018		112	75-125			
Chromium	47.13	-	0.50	µg/L	50.000		94.3	85-115			
Nickel	47.65	-	0.50	µg/L	50.000		95.3	68-134			
Copper	48.68	-	0.50	µg/L	49.980		97.4	51-145			
Zinc	51.50	-	2.49	µg/L	50.000		103	46-146			
Arsenic	50.21	-	1.49	µg/L	50.040		100	85-115			
Selenium	49.90	-	2.98	µg/L	49.980		99.8	59-149			
Molybdenum	9.279	-	0.994	µg/L	10.000		92.8	85-115			
Silver	0.992	-	0.099	µg/L	0.99980		99.2	74-119			
Cadmium	5.264	-	0.099	µg/L	5.0020		105	84-113			
Antimony	1.046	-	0.099	µg/L	1.0000		105	79-122			
Thallium	1.008	-	0.099	µg/L	1.0000		101	64-137			
Lead	10.14	-	0.199	µg/L	10.002		101	72-143			

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City of Yakima	Project: NDPES Metals Monitoring 2012	
2220 E. Viola	Project Number: 1385	**Reported:**
Yakima WA, 98901	Project Manager: Jennifer Key	29-Oct-13 16:44

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch F310123 - EFGS-052 Closed Vessel Nitric Oven Digestion											
LCS Dup (F310123-BSD1)					Prepared: 14-Oct-13 Analyzed: 15-Oct-13						
Beryllium	1.116	-	0.099	µg/L	1.0018		111	75-125	0.721	20	
Chromium	47.29	-	0.50	µg/L	50.000		94.6	85-115	0.342	20	
Nickel	46.97	-	0.50	µg/L	50.000		93.9	68-134	1.44	20	
Copper	47.88	-	0.50	µg/L	49.980		95.8	51-145	1.65	20	
Zinc	51.07	-	2.49	µg/L	50.000		102	46-146	0.834	20	
Arsenic	51.66	-	1.49	µg/L	50.040		103	85-115	2.84	20	
Selenium	52.99	-	2.98	µg/L	49.980		106	59-149	6.01	20	
Molybdenum	9.433	-	0.994	µg/L	10.000		94.3	85-115	1.65	20	
Silver	1.027	-	0.099	µg/L	0.99980		103	74-119	3.43	20	
Cadmium	5.033	-	0.099	µg/L	5.0020		101	84-113	4.47	20	
Antimony	1.085	-	0.099	µg/L	1.0000		109	79-122	3.64	20	
Thallium	1.004	-	0.099	µg/L	1.0000		100	64-137	0.386	20	
Lead	10.16	-	0.199	µg/L	10.002		102	72-143	0.249	20	
Matrix Spike (F310123-MS1)		**Source: 1310256-01**			Prepared: 14-Oct-13 Analyzed: 15-Oct-13						
Beryllium	1.120	-	0.100	µg/L	1.0018	ND	112	75-125			
Chromium	47.33	-	0.50	µg/L	50.000	0.43	93.8	85-115			
Nickel	46.94	-	0.50	µg/L	50.000	0.94	92.0	68-134			
Copper	49.00	-	0.50	µg/L	49.980	0.91	96.2	51-145			
Zinc	51.81	-	2.51	µg/L	50.000	0.93	102	46-146			
Arsenic	53.18	-	1.51	µg/L	50.040	1.92	102	85-115			
Selenium	51.05	-	3.01	µg/L	49.980	ND	102	59-149			
Molybdenum	9.719	-	1.00	µg/L	10.000	0.389	93.3	80-115			
Silver	1.017	-	0.100	µg/L	0.99980	ND	102	74-119			
Cadmium	5.133	-	0.100	µg/L	5.0020	0.014	102	84-113			
Antimony	1.121	-	0.100	µg/L	1.0000	0.050	107	79-122			
Thallium	1.030	-	0.100	µg/L	1.0000	0.003	103	64-137			
Lead	10.02	-	0.201	µg/L	10.002	0.024	99.9	72-143			

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Project: NDPES Metals Monitoring 2012
Project Number: 1385
Project Manager: Jennifer Key

Reported:
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Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch F310123 - EFGS-052 Closed Vessel Nitric Oven Digestion											
Matrix Spike (F310123-MS2)		**Source: 1310287-01**			Prepared: 14-Oct-13 Analyzed: 15-Oct-13						
Beryllium	1.143	-	0.100	µg/L	1.0018	ND	114	75-125			
Chromium	47.83	-	0.50	µg/L	50.000	1.43	92.8	85-115			
Nickel	50.54	-	0.50	µg/L	50.000	4.95	91.2	68-134			
Copper	81.47	-	0.50	µg/L	49.980	33.79	95.4	51-145			
Zinc	162.9	-	2.51	µg/L	50.000	114.1	97.6	46-146			
Arsenic	54.66	-	1.51	µg/L	50.040	3.14	103	85-115			
Molybdenum	10.08	-	1.00	µg/L	10.000	1.541	85.4	80-115			
Silver	0.819	-	0.100	µg/L	0.99980	0.404	41.5	74-119			QM-05
Cadmium	5.247	-	0.100	µg/L	5.0020	0.284	99.2	84-113			
Antimony	1.362	-	0.100	µg/L	1.0000	0.483	87.9	79-122			
Thallium	0.997	-	0.100	µg/L	1.0000	0.010	98.7	64-137			
Lead	14.91	-	0.201	µg/L	10.002	5.155	97.5	72-143			QB-01
Matrix Spike (F310123-MS3)		**Source: 1310256-01**			Prepared: 14-Oct-13 Analyzed: 15-Oct-13						
Beryllium	5.577	-	0.100	µg/L	5.0750	ND	110	75-125			AS
Chromium	97.17	-	0.50	µg/L	101.50	0.43	95.3	85-115			AS
Nickel	120.7	-	0.50	µg/L	126.88	0.94	94.4	68-134			AS
Copper	123.9	-	0.50	µg/L	126.88	0.91	96.9	51-145			AS
Zinc	258.6	-	2.50	µg/L	253.75	0.93	102	46-146			AS
Arsenic	109.1	-	1.50	µg/L	101.50	1.92	106	85-115			AS
Selenium	107.3	-	3.00	µg/L	101.50	ND	106	59-149			AS
Molybdenum	48.18	-	1.00	µg/L	50.750	0.389	94.2	80-115			AS
Silver	5.002	-	0.100	µg/L	5.0750	ND	98.6	74-119			AS
Cadmium	10.42	-	0.100	µg/L	10.150	0.014	103	84-113			AS
Antimony	5.580	-	0.100	µg/L	5.0750	0.050	109	79-122			AS
Thallium	5.073	-	0.100	µg/L	5.0750	0.003	99.9	64-137			AS
Lead	25.38	-	0.200	µg/L	25.375	0.024	99.9	72-143			AS

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Liz Siska

Liz Siska, Project Manager

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City of Yakima
2220 E. Viola
Yakima WA, 98901

Project: NDPES Metals Monitoring 2012
Project Number: 1385
Project Manager: Jennifer Key

Reported:
29-Oct-13 16:44

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch F310123 - EFGS-052 Closed Vessel Nitric Oven Digestion											
Matrix Spike (F310123-MS4)		**Source: 1310287-01**			Prepared: 14-Oct-13 Analyzed: 15-Oct-13						
Beryllium	5.415	-	0.100	µg/L	5.0750	ND	107	75-125			AS
Chromium	97.61	-	0.50	µg/L	101.50	1.43	94.8	85-115			AS
Nickel	123.9	-	0.50	µg/L	126.88	4.95	93.8	68-134			AS
Copper	156.1	-	0.50	µg/L	126.88	33.79	96.4	51-145			AS
Zinc	377.0	-	2.50	µg/L	253.75	114.1	104	46-146			AS
Arsenic	112.5	-	1.50	µg/L	101.50	3.14	108	85-115			AS
Selenium	92.21	-	3.00	µg/L	101.50	ND	90.8	59-149			AS, QB-01
Molybdenum	49.96	-	1.00	µg/L	50.750	1.541	95.4	80-115			AS
Silver	4.185	-	0.100	µg/L	5.0750	0.404	74.5	74-119			AS, QM-05
Cadmium	10.42	-	0.100	µg/L	10.150	0.284	99.9	84-113			AS
Antimony	5.877	-	0.100	µg/L	5.0750	0.483	106	79-122			AS
Thallium	4.953	-	0.100	µg/L	5.0750	0.010	97.4	64-137			AS
Lead	30.25	-	0.200	µg/L	25.375	5.155	98.9	72-143			AS, QB-01
Matrix Spike (F310123-MS5)		**Source: 1310287-01**			Prepared: 14-Oct-13 Analyzed: 15-Oct-13						
Selenium	10.70	-	3.01	µg/L	49.980	ND	21.4	59-149			QM-07
Silver	0.689	-	0.100	µg/L	0.99980	0.404	28.5	74-119			QM-05
Matrix Spike (F310123-MS6)		**Source: 1310287-01**			Prepared: 14-Oct-13 Analyzed: 15-Oct-13						
Selenium	98.20	-	3.00	µg/L	101.50	ND	96.7	59-149			AS
Silver	4.268	-	0.100	µg/L	5.0750	0.404	76.1	74-119			AS, QM-05
Matrix Spike Dup (F310123-MSD1)		**Source: 1310256-01**			Prepared: 14-Oct-13 Analyzed: 15-Oct-13						
Beryllium	1.100	-	0.100	µg/L	1.0018	ND	110	75-125	1.72	20	
Chromium	48.63	-	0.50	µg/L	50.000	0.43	96.4	85-115	2.70	20	
Nickel	48.53	-	0.50	µg/L	50.000	0.94	95.2	68-134	3.32	20	
Copper	49.60	-	0.50	µg/L	49.980	0.91	97.4	51-145	1.21	20	
Zinc	52.36	-	2.51	µg/L	50.000	0.93	103	46-146	1.04	20	
Arsenic	54.25	-	1.51	µg/L	50.040	1.92	105	85-115	2.00	20	
Selenium	52.04	-	3.01	µg/L	49.980	ND	104	59-149	1.93	20	
Molybdenum	9.904	-	1.00	µg/L	10.000	0.389	95.2	80-115	1.88	20	
Silver	1.010	-	0.100	µg/L	0.99980	ND	101	74-119	0.699	20	
Cadmium	5.184	-	0.100	µg/L	5.0020	0.014	103	84-113	0.996	20	
Antimony	1.133	-	0.100	µg/L	1.0000	0.050	108	79-122	1.15	20	

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Liz Siska

Liz Siska, Project Manager

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City of Yakima
2220 E. Viola
Yakima WA, 98901

Project: NDPES Metals Monitoring 2012
Project Number: 1385
Project Manager: Jennifer Key

Reported:
29-Oct-13 16:44

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch F310123 - EFGS-052 Closed Vessel Nitric Oven Digestion											
Matrix Spike Dup (F310123-MSD1)		**Source: 1310256-01**			Prepared: 14-Oct-13 Analyzed: 15-Oct-13						
Thallium	1.016	-	0.100	µg/L	1.0000	0.003	101	64-137	1.41	20	
Lead	10.13	-	0.201	µg/L	10.002	0.024	101	72-143	1.13	20	
Matrix Spike Dup (F310123-MSD2)		**Source: 1310287-01**			Prepared: 14-Oct-13 Analyzed: 15-Oct-13						
Beryllium	1.204	-	0.100	µg/L	1.0018	ND	120	75-125	5.15	20	
Chromium	49.33	-	0.50	µg/L	50.000	1.43	95.8	85-115	3.09	20	
Nickel	57.95	-	0.50	µg/L	50.000	4.95	106	68-134	13.6	20	
Copper	82.00	-	0.50	µg/L	49.980	33.79	96.5	51-145	0.644	20	
Zinc	167.0	-	2.51	µg/L	50.000	114.1	106	46-146	2.48	20	
Arsenic	56.55	-	1.51	µg/L	50.040	3.14	107	85-115	3.40	20	
Molybdenum	10.39	-	1.00	µg/L	10.000	1.541	88.5	80-115	3.08	20	
Silver	0.914	-	0.100	µg/L	0.99980	0.404	51.0	74-119	10.9	20	QM-05
Cadmium	5.449	-	0.100	µg/L	5.0020	0.284	103	84-113	3.77	20	
Antimony	1.412	-	0.100	µg/L	1.0000	0.483	92.9	79-122	3.61	20	
Thallium	1.040	-	0.100	µg/L	1.0000	0.010	103	64-137	4.25	20	
Lead	15.11	-	0.201	µg/L	10.002	5.155	99.6	72-143	1.36	20	QB-01
Matrix Spike Dup (F310123-MSD3)		**Source: 1310256-01**			Prepared: 14-Oct-13 Analyzed: 15-Oct-13						
Beryllium	5.636	-	0.100	µg/L	5.0750	ND	111	75-125	1.05	20	AS
Chromium	96.57	-	0.50	µg/L	101.50	0.43	94.7	85-115	0.620	20	AS
Nickel	122.3	-	0.50	µg/L	126.88	0.94	95.6	68-134	1.32	20	AS
Copper	122.8	-	0.50	µg/L	126.88	0.91	96.1	51-145	0.841	20	AS
Zinc	261.2	-	2.50	µg/L	253.75	0.93	103	46-146	1.00	20	AS
Arsenic	110.3	-	1.50	µg/L	101.50	1.92	107	85-115	1.15	20	AS
Selenium	108.4	-	3.00	µg/L	101.50	ND	107	59-149	0.984	20	AS
Molybdenum	47.89	-	1.00	µg/L	50.750	0.389	93.6	80-115	0.605	20	AS
Silver	4.994	-	0.100	µg/L	5.0750	ND	98.4	74-119	0.159	20	AS
Cadmium	10.15	-	0.100	µg/L	10.150	0.014	99.8	84-113	2.66	20	AS
Antimony	5.565	-	0.100	µg/L	5.0750	0.050	109	79-122	0.272	20	AS
Thallium	5.047	-	0.100	µg/L	5.0750	0.003	99.4	64-137	0.526	20	AS
Lead	25.73	-	0.200	µg/L	25.375	0.024	101	72-143	1.39	20	AS

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Liz Siska

Liz Siska, Project Manager

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City of Yakima
2220 E Viola
Yakima WA, 98901

Project: NDPES Metals Monitoring 2012
Project Number: 1385
Project Manager: Jennifer Key

Reported:
29-Oct-13 16:44

Quality Control Data

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch F310123 - EFGS-052 Closed Vessel Nitric Oven Digestion											
Matrix Spike Dup (F310123-MSD4)		**Source: 1310287-01**			Prepared: 14-Oct-13 Analyzed: 15-Oct-13						
Beryllium	5.779	-	0.100	µg/L	5.0750	ND	114	75-125	6.51	20	AS
Chromium	97.25	-	0.50	µg/L	101.50	1.43	94.4	85-115	0.373	20	AS
Nickel	122.4	-	0.50	µg/L	126.88	4.95	92.6	68-134	1.19	20	AS
Copper	153.7	-	0.50	µg/L	126.88	33.79	94.5	51-145	1.53	20	AS
Zinc	375.1	-	2.50	µg/L	253.75	114.1	103	46-146	0.519	20	AS
Arsenic	111.0	-	1.50	µg/L	101.50	3.14	106	85-115	1.37	20	AS
Selenium	83.28	-	3.00	µg/L	101.50	ND	82.0	59-149	10.2	20	AS, QB-01
Molybdenum	49.29	-	1.00	µg/L	50.750	1.541	94.1	80-115	1.35	20	AS
Silver	3.975	-	0.100	µg/L	5.0750	0.404	70.4	74-119	5.13	20	AS, QM-05
Cadmium	10.48	-	0.100	µg/L	10.150	0.284	100	84-113	0.594	20	AS
Antimony	5.887	-	0.100	µg/L	5.0750	0.483	106	79-122	0.172	20	AS
Thallium	4.988	-	0.100	µg/L	5.0750	0.010	98.1	64-137	0.713	20	AS
Lead	30.56	-	0.200	µg/L	25.375	5.155	100	72-143	1.02	20	QB-01, AS
Matrix Spike Dup (F310123-MSD5)		**Source: 1310287-01**			Prepared: 14-Oct-13 Analyzed: 15-Oct-13						
Selenium	13.73	-	3.01	µg/L	49.980	ND	27.5	59-149	24.8	20	QM-07, QR-08
Silver	0.575	-	0.100	µg/L	0.99980	0.404	17.0	74-119	18.1	20	QM-05
Matrix Spike Dup (F310123-MSD6)		**Source: 1310287-01**			Prepared: 14-Oct-13 Analyzed: 15-Oct-13						
Selenium	99.80	-	3.00	µg/L	101.50	ND	98.3	59-149	1.61	20	AS
Silver	4.094	-	0.100	µg/L	5.0750	0.404	72.7	74-119	4.15	20	AS, QM-05

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City of Yakima	Project: NDPES Metals Monitoring 2012	
2220 E. Viola	Project Number: 1385	Reported:
Yakima WA, 98901	Project Manager: Jennifer Key	29-Oct-13 16:44

Notes and Definitions

U	Analyte was not detected and is reported as less than the LOD or as defined by the client. The LOD has been adjusted for any dilution or concentration of the sample.
R-05	The sample was diluted due to the presence of high levels of non-target analytes or particulates resulting in elevated reporting limits.
QR-10	Dissolved or acid soluble concentration is greater than total concentration. The RPD between the sample concentrations is less than the RPD control limit for matrix duplicates for this method.
QR-08	The RPD value for the MS/MSD was outside of acceptance limits. Batch QC acceptable based on matrix duplicate and/or LCS/LCSD RPD values within control limits.
QM-07	The spike recovery was outside control limits for the MS and/or MSD. The batch was accepted based on LCS and LCSD recoveries within control limits and, when analysis permits, acceptable AS/ASD.
QM-05	The spike recovery was outside acceptance limits for the MS/MSD and or AS/ASD due to matrix interference. The LCS and/or LCSD were within acceptance limits showing that the laboratory is in control and the data is acceptable.
QB-10	The method blank and/or initial/continuing calibration blank contains analyte at a concentration above the MRL. Only report sample results greater than 10 times the contamination value (QB-01), or samples less than the MRL (QB-02).
QB-04	The blank was preserved to 2% BrCl rather than 1%. The control limit for blanks preserved to greater than 1% BrCl is the preservation percentage multiplied by the MRL.
QB-02	The method blank and/or initial/continuing calibration blank contains analyte at a concentration above the MRL. However, the sample concentrations are less than the MRL.
QB-01	The method blank and/or initial/continuing calibration blank contains analyte at a concentration above the MRL. However, the blank concentration(s) are less than 10% of the sample result.
FB	This blank is a filtration blank. Data is reported for informational purposes only.
E-01	Sample was preceded by a sample exceeding the calibration curve and was reanalyzed for confirmation.
E	The concentration indicated for this analyte is an estimated value above the calibration range of the instrument. This value is considered an estimate (CLP E-flag).
AS	This MS and/or MSD is an analytical spike and/or an analytical spike duplicate.
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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Liz Siska

Liz Siska, Project Manager

YAKIMA REGIONAL WASTEWATER TREATMENT PLANT
ANALYTICAL RESULTS

Sample Origin: BIOSOLIDS PRIORITY POLLUTANT METALS
Sample Description: CENTRIFUGE CONVEYOR GRAB
Matrix: BIOSOLIDS
Date Received by Lab: 10/8/2013
Lab Sample No: 2013 Q4 BS PP

	Analytical Method	Results (Dry wt.)	Units	Detection Limit	Date Analyzed
A) Pollutants					
Antimony	SM3030D/SM3113B	1.24	mg/kg	1	12/02/13
Arsenic	SM3030D/SM3113B	5.59	mg/kg	2	11/12/13
Beryllium	SM3030D/SM3113B	ND	mg/kg	0.5	11/05/13
Cadmium	SM3030D/SM3113B	1.30	mg/kg	0.1	11/20/13
Chromium	SM3030D/SM3113B	44.1	mg/kg	0.2	12/09/13
Copper	SM3030D/SM3113B	294	mg/kg	2	11/05/13
Lead	SM3030D/SM3113B	53.8	mg/kg	2	12/11/13
Mercury	SM3112B	ND	mg/kg	0.9	11/25/13
Nickel	SM3030D/SM3113B	7.69	mg/kg	1	11/15/13
Selenium	SM3030D/SM3113B	ND	mg/kg	3	11/17/13
Silver	SM3030D/SM3113B	3.33	mg/kg	1	11/15/13
Thallium	SM3030D/SM3113B	ND	mg/kg	0.5	11/25/13
Zinc	SM3030D/SM3113B	832	mg/kg	2	11/05/13

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Chain of Custody Record & Laboratory Analysis Request: Air, Water, Sediments, Plant and Animal Tissue, Hydrocarbon & Other Samples

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Fax: 425-686-3096
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http://www.FrontierGS.com

Page 1 of 1

Client: City of Yakima Wastewater	Contact: Jennifer Key
Address: 2220 East Viola Yakima, WA 98901	Phone: same Fax: E-mail: same
Project Name: NPDES Metals Monitoring	Contract/PO: 1385
Report To: Jennifer Key	Invoice To: Carolyn Belles
Address: same	Address: 2220 East Viola Yakima, WA 98901
Phone: 575-6133 Fax:	Phone: Fax: 575-6116
E-mail: jkey@ci.yakima.wa.us	E-mail: Carolyn.Belles@yakimawa.gov

No.	Engraved Bottle ID	Sample ID	# of Bottles	Matrix	Date & Time	Sampled By	Field Filtered (Y/N)	Field Preserved: HNO_3 HCl BrCl Other (%)	Analyses Requested: ICP-MS* Total Metals	Hg-AFS Total Mercury					
1	B-131154	Field Blank	1 PETG	W	10/08/13 0800	JK/AP	N	N/A	X						
2	B-131166	"	"	W	10/08/13 0800	JK/AP	N	"		X					
3	B-131188	YRWWTP Influent	"	WW	10/08/13 0845	JK/AP	N	"	X						
4	B-131191	"	"	WW	10/08/13 0845	JK/AP	N	"		X					
5	B-131197	YRWWTP Effluent	"	WW	10/08/13 0820	JK/AP	N	"	X						
6	B-131204	"	"	WW	10/08/13 0820	JK/AP	N	"		X					
7															
8															
9															
10															
11															
12															

EFGS PM:
Date:
TAT (business days): **20** (std)
15 10 5 4 3 2 24 hrs.
(For TAT < 10 days, contact PM. Surcharges apply for expedited TAT)
Saturday delivery? ☐ Y ☐ N
(If yes, please contact PM)
EDD ☐ Y ☐ N
QA ☐ Standard ☐ High

Comments

*Total Metals Analyte List:
Antimony
Arsenic
Beryllium
Cadmium
Chromium
Copper
Lead
Molybdenum
Nickel
Selenium
Silver
Thallium
Zinc

Note: Field Blank poured into sampling vessel.

For Laboratory Use Only

COC Seal:	Comments:
Cooler Temp:	
Carrier:	
VTSR:	
# of Coolers:	

Matrix Codes:
FW: Fresh Water
WW: Waste Water
SB: Sea and Brackish Water
SS: Soil and Sediment
TS: Plant and Animal Tissue
HC: Hydrocarbons
TR: Trap
OT: Other

Relinquished By: Jennifer Key	Received By:	Received By:
Name: Jennifer Key	Name:	Name:
Organization: City of Yakima	Organization:	Organization:
Date & Time: 10/08/13 0845	Date & Time:	Date & Time:

Tracking number: 8709 8032 5090

Sample Disposal:
☐ Return (shipping fees may apply)
☒ Standard Disposal – 30 Days after report
☐ Retain for ____ weeks after report (storage fees may apply)

By signing, you declare that you agree with EFGS' terms and conditions, and that you authorize EFGS to perform the specified analyses.

Customer Approval: Jennifer Key Date: 10/08/13

Phone: (425) 686-1996
Fax: (425) 686-3096
http://www.FrontierGS.com

Eurofins Frontier Global Sciences

11720 North Creek Pkwy. North
Suite 400
Bothell, WA 98011

Client: City of Yakima
Project:
Phone: 509-575-6077
Ship To: Jennifer Key
2220 E. Viola
Yakima, WA 98901

Date Required: 20-Sep
Date Submitted: 11-Sep
Lab WO#s:

Shipping Information:

Qty.	Size	Bottle/Jar Type	Lot #	Preservative	Lot#	Analyte(s)	Comments
3	250	PETG	10915255	NA	NA		
3	250	PETG	1	NA	NA		

Equipment	Length/Size	Qty.	Custom Setup
MF 15 Tubing			Y / N
MF 73 Tubing			Y / N
Teflon (0.25"OD) Tubing			Y / N
Inline (Gelman) Filter			Y / N
Vacuum Filter (0.45 micron)			Y / N
pH Paper			Y / N

2.5 L Reagent Water	0
COC(s)	x
Gloves (4 per Sample)	0
Custody Seals (1 per Cooler)	X
Temp Blank (1 per Cooler)	X

Notes: They have enough gloves already.

Lab PM:

See Reverse for Bottle Types, Preservation Handling Instructions

Date Shipped: 9.13.11

Initials: DP

CASCADE ANALYTICAL, INC
1-800-545-4206

(509) 662-1888
Fax: (509) 662-8183
3019 G.S. Center Road
Wenatchee, WA 98801

(509) 452-7707
Fax: (509) 452-7773
1008 W. Ahtanum Rd
Union Gap, WA 98903

Batch: 387566
Client: CITY OF YAKIMA
Account: 148
Sampler:

--- Analytical Results ---

CITY OF YAKIMA
WASTEWATER DIVISION
2220 E. VIOLA
YAKIMA, WA, 98901

Report Date: 10/29/13

Sample Id	Lab Number	Test Requested	Value	Units
YRWWTP Influent	13-C024743	Other Lab Number	580-40823-1	
YRWWTP Effluent	13-C024744	Other Lab Number	580-40823-1	
YRWWTP Biosolids	13-C024745	Other Lab Number	580-40823-1	

Approved By Name: Andy Schut
Function: Lab Manager/Yakima

Signature:

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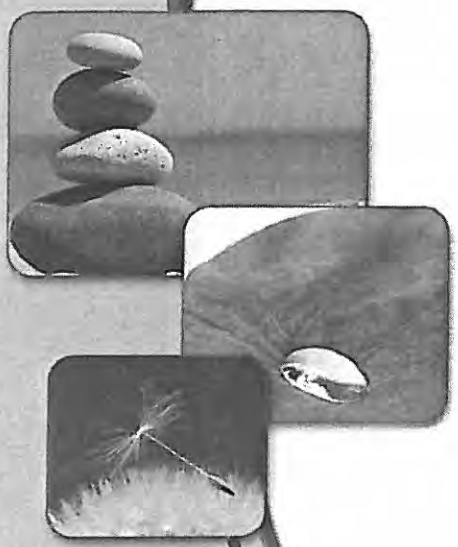

TestAmerica

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ANALYTICAL REPORT

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TestAmerica Job ID: 580-40823-1
Client Project/Site: City of Yakima WWTP

For:
Cascade Analytical Inc
3019 GS Center Road
Wenatchee, Washington 98801

Attn: Judy Brown

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Authorized for release by:
10/29/2013 1:24:59 PM

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Results relate only to the items tested and the sample(s) as received by the laboratory.

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Case Narrative

Client: Cascade Analytical Inc
Project/Site: City of Yakima WWTP

TestAmerica Job ID: 580-40823-1

Job ID: 580-40823-1

Laboratory: TestAmerica Seattle

Narrative

Receipt
The samples were received on 10/11/2013 3:00 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 5.3° C and 5.6° C.

Except:

The following sample YRWWTP Biosolids (580-40823-3) was collected in EnCore plugs by the client; however, the containers were not removed from the cooler when the sample was received at the lab do to a lab oversight. This sample was not analzyed for method 8260 and a new sample will be submitted by the client at a later date.

GC/MS VOA
No analytical or quality issues were noted.

GC/MS Semi VOA - Method 625
In analytical batch 147722, a full list spike was utilized for this method. Due to the large number of spiked analytes, there is a high probability that one or more analytes will recover outside acceptance limits. The laboratory's SOP allows for four analytes to recover outside criteria for this method when a full list spike is utilized. The LCS and LCSD associated with batch 147191 had four and three analytes outside control limits respectively; therefore, re-extraction/re-analysis was not performed. These results have been qualified "*" and reported.

GC/MS Semi VOA - Method 8270C
In analytical batch 147608, a full list spike was utilized for this method. Due to the large number of spiked analytes, there is a high probability that one or more analytes will recover outside acceptance limits. The laboratory's SOP allows for 4 analytes to recover outside criteria for this method when a full list spike is utilized. The LCS/LCSD associated with prep batch 147558 had 3 analytes outside control limits; therefore, re-extraction/re-analysis was not performed. These results have been qualified "*" and reported.

The matrix spike / matrix spike duplicate (MS/MSD) recoveries of sample YRWWTP Biosolids (580-40823-3) for preparation batch 147558 were outside control limits. The associated laboratory control sample (LCS) recovery met acceptance criteria. The data have been qualified "F" and reported.

No other analytical or quality issues were noted.

GC Semi VOA - Method 608
TCMX surrogate recovery for sample YRWWTP Influent (580-40823-A-1) was outside control limits. Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed. The data have been qualified "X" and reported.

In analytical batch 147612 the capping continuing calibration verification (CCV) analyzed on 10/20/13 on instrument TAC034 did not meet criteria on both columns. The CCV fails high for 4,4'-DDT and fails low for beta-BHC, Endrin and Heptachlor The associated samples were analyzed twice with similar results, thus confirming that the CCV failure is due to the sample matrix interference. The affected samples are: (CCV 580-147612/24), YRWWTP Effluent (580-40823-2), YRWWTP Influent (580-40823-1). The data have been qualified "^" and reported.

No other analytical or quality issues were noted.

GC Semi VOA - Method 8081A
In analytical batch 147611 the capping continuing calibration verification (CCV) analyzed on 10/20/13 on instrument TAC034 did not meet criteria on both columns. The CCV failed high for 4,4'-DDD and low for 4,4'-DDT, Endrin ketone, Heptachlor, Methoxychlorand Toxaphene. The associated samples were analyzed twice with similar results, thus confirming that the CCV failure is due to the sample matrix interference. The affected samples are: (580-40823-3 MS), (580-40823-3 MSD), (CCV 580-147611/24), (CCV 580-147611/25), YRWWTP Biosolids (580-40823-3). The data have been qualified "^" and reported.

In analytical batch 147611 the matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 147508 were outside control limits. The associated laboratory control sample (LCS) recovery met acceptance criteria. The data have been qualified "F" and reported.

In addition, the RPD is high for several analytes. This is attributed to sample matrix interference and non-homogeneity.

Job ID: 580-40823-1 (Continued)

Laboratory: TestAmerica Seattle (Continued)

No other analytical or quality issues were noted.

General Chemistry - Method 420.1
In analytical batch 196731, after the shake-out of sample YRWWTP Influent (580-40823-A-1) a slightly smaller amount of chloroform extract was collected then normal. The spec didn't have a hard time reading the sample so sample was reported.

After the shake out of the Matrix spike of sample YRWWTP Influent (580-40823-1) insufficient chloroform extract was collected to get an accurate reading and there for couldn't be calculated. The data has been qualified "F" and reported for analytical batch 196731.

No other analytical or quality issues were noted.

Organic Prep
Method CWA_Prep: Batch 147264 method 608 Pesticides
There was no sample volume to prepare a MS/MSD, therefore a LCSD was prepared for the batch.

Method CWA_Prep: Batch 147191 method 625 Semivoltiles
There was no sample for MS/MSD, therefore a LCSD was prepared.

No other analytical or quality issues were noted.

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
*	LCS or LCSD exceeds the control limits
F	MS/MSD Recovery and/or RPD exceeds the control limits
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

GC Semi VOA

Qualifier	Qualifier Description
p	The %RPD between the primary and confirmation column/detector is >40%. The lower value has been reported.
X	Surrogate is outside control limits
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC exceeds the control limits.
F	MS/MSD Recovery and/or RPD exceeds the control limits
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
E	Result exceeded calibration range.

General Chemistry

Qualifier	Qualifier Description
F	MS/MSD Recovery and/or RPD exceeds the control limits

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client Sample ID: YRWWTP Influent
Date Collected: 10/08/13 08:45
Date Received: 10/08/13 15:00

Lab Sample ID: 580-40823-1
Matrix: Water

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Method: 624 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0		ug/L			10/19/13 02:19	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			10/19/13 02:19	1
1,1,2-Trichloroethane	ND		1.0		ug/L			10/19/13 02:19	1
1,1-Dichloroethane	ND		1.0		ug/L			10/19/13 02:19	1
1,1-Dichloroethene	ND		1.0		ug/L			10/19/13 02:19	1
1,2-Dichlorobenzene	ND		1.0		ug/L			10/19/13 02:19	1
1,2-Dichloroethane	ND		1.0		ug/L			10/19/13 02:19	1
1,2-Dichloropropane	ND		1.0		ug/L			10/19/13 02:19	1
1,3-Dichlorobenzene	ND		1.0		ug/L			10/19/13 02:19	1
1,4-Dichlorobenzene	**1.2**		1.0		ug/L			10/19/13 02:19	1
Benzene	ND		1.0		ug/L			10/19/13 02:19	1
Bromodichloromethane	ND		1.0		ug/L			10/19/13 02:19	1
Bromoform	ND		1.0		ug/L			10/19/13 02:19	1
Bromomethane	ND		1.0		ug/L			10/19/13 02:19	1
Carbon tetrachloride	ND		1.0		ug/L			10/19/13 02:19	1
Chlorobenzene	ND		1.0		ug/L			10/19/13 02:19	1
Chloroethane	ND		1.0		ug/L			10/19/13 02:19	1
Chloroform	**2.9**		1.0		ug/L			10/19/13 02:19	1
Chloromethane	ND		1.0		ug/L			10/19/13 02:19	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			10/19/13 02:19	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			10/19/13 02:19	1
Dibromochloromethane	ND		1.0		ug/L			10/19/13 02:19	1
Dichlorodifluoromethane	ND		1.0		ug/L			10/19/13 02:19	1
Ethylbenzene	ND		1.0		ug/L			10/19/13 02:19	1
Methylene Chloride	ND		5.0		ug/L			10/19/13 02:19	1
Tetrachloroethene	ND		1.0		ug/L			10/19/13 02:19	1
Toluene	ND		1.0		ug/L			10/19/13 02:19	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			10/19/13 02:19	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			10/19/13 02:19	1
Trichloroethene	ND		1.0		ug/L			10/19/13 02:19	1
Trichlorofluoromethane	ND		1.0		ug/L			10/19/13 02:19	1
Vinyl chloride	ND		1.0		ug/L			10/19/13 02:19	1
Xylenes, Total	ND		2.0		ug/L			10/19/13 02:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*85*		*62 - 143*		*10/19/13 02:19*	*1*
4-Bromofluorobenzene (Surr)	*114*		*76 - 124*		*10/19/13 02:19*	*1*
Dibromofluoromethane (Surr)	*99*		*67 - 129*		*10/19/13 02:19*	*1*
Toluene-d8 (Surr)	*100*		*60 - 144*		*10/19/13 02:19*	*1*

Method: 625 - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	ND		2.2		ug/L		10/14/13 11:06	10/22/13 18:44	5
1,2-Dichlorobenzene	ND		2.2		ug/L		10/14/13 11:06	10/22/13 18:44	5
1,3-Dichlorobenzene	ND		2.2		ug/L		10/14/13 11:06	10/22/13 18:44	5
1,4-Dichlorobenzene	ND		2.2		ug/L		10/14/13 11:06	10/22/13 18:44	5
2,4,5-Trichlorophenol	ND		2.2		ug/L		10/14/13 11:06	10/22/13 18:44	5
2,4,6-Trichlorophenol	ND		3.2		ug/L		10/14/13 11:06	10/22/13 18:44	5
2,4-Dichlorophenol	ND		2.2		ug/L		10/14/13 11:06	10/22/13 18:44	5
2,4-Dimethylphenol	ND		11		ug/L		10/14/13 11:06	10/22/13 18:44	5

Client: Cascade Analytical Inc
Project/Site: City of Yakima WWTP

TestAmerica Job ID: 580-40823-1

Client Sample ID: YRWWTP Influent
Date Collected: 10/08/13 08:45
Date Received: 10/08/13 15:00

Lab Sample ID: 580-40823-1
Matrix: Water

Method: 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-Dinitrophenol	ND		27		ug/L		10/14/13 11:06	10/22/13 18:44	5
2,4-Dinitrotoluene	ND		2.2		ug/L		10/14/13 11:06	10/22/13 18:44	5
2,6-Dinitrotoluene	ND		2.2		ug/L		10/14/13 11:06	10/22/13 18:44	5
2-Chloronaphthalene	ND		0.32		ug/L		10/14/13 11:06	10/22/13 18:44	5
2-Chlorophenol	ND		2.2		ug/L		10/14/13 11:06	10/22/13 18:44	5
2-Methylphenol	ND		2.2		ug/L		10/14/13 11:06	10/22/13 18:44	5
2-Nitrophenol	ND		2.2		ug/L		10/14/13 11:06	10/22/13 18:44	5
3,3'-Dichlorobenzidine	ND		11		ug/L		10/14/13 11:06	10/22/13 18:44	5
4,6-Dinitro-2-methylphenol	ND		22		ug/L		10/14/13 11:06	10/22/13 18:44	5
4-Bromophenyl phenyl ether	ND		2.2		ug/L		10/14/13 11:06	10/22/13 18:44	5
4-Chloro-3-methylphenol	ND		2.2		ug/L		10/14/13 11:06	10/22/13 18:44	5
4-Chlorophenyl phenyl ether	ND		2.2		ug/L		10/14/13 11:06	10/22/13 18:44	5
4-Nitrophenol	ND		16		ug/L		10/14/13 11:06	10/22/13 18:44	5
Acenaphthene	ND		0.54		ug/L		10/14/13 11:06	10/22/13 18:44	5
Acenaphthylene	ND		0.43		ug/L		10/14/13 11:06	10/22/13 18:44	5
Anthracene	ND		0.22		ug/L		10/14/13 11:06	10/22/13 18:44	5
Benzo[a]anthracene	ND		0.32		ug/L		10/14/13 11:06	10/22/13 18:44	5
Benzo[a]pyrene	ND		0.22		ug/L		10/14/13 11:06	10/22/13 18:44	5
Benzo[g,h,i]perylene	ND		0.32		ug/L		10/14/13 11:06	10/22/13 18:44	5
Benzofluoranthene	ND		0.43		ug/L		10/14/13 11:06	10/22/13 18:44	5
Bis(2-chloroethoxy)methane	ND		2.2		ug/L		10/14/13 11:06	10/22/13 18:44	5
Bis(2-chloroethyl)ether	ND		2.2		ug/L		10/14/13 11:06	10/22/13 18:44	5
Bis(2-ethylhexyl) phthalate	ND		16		ug/L		10/14/13 11:06	10/22/13 18:44	5
Butyl benzyl phthalate	ND		3.2		ug/L		10/14/13 11:06	10/22/13 18:44	5
Carbazole	ND		2.2		ug/L		10/14/13 11:06	10/22/13 18:44	5
Chrysene	ND		0.22		ug/L		10/14/13 11:06	10/22/13 18:44	5
n-Decane	ND		3.2		ug/L		10/14/13 11:06	10/22/13 18:44	5
Di-n-butyl phthalate	ND	*	2.2		ug/L		10/14/13 11:06	10/22/13 18:44	5
Di-n-octyl phthalate	ND		2.2		ug/L		10/14/13 11:06	10/22/13 18:44	5
Dibenz(a,h)anthracene	ND		0.32		ug/L		10/14/13 11:06	10/22/13 18:44	5
Dibenzofuran	ND		2.2		ug/L		10/14/13 11:06	10/22/13 18:44	5
Diethyl phthalate	**2.7**	*	2.2		ug/L		10/14/13 11:06	10/22/13 18:44	5
Dimethyl phthalate	ND	*	2.2		ug/L		10/14/13 11:06	10/22/13 18:44	5
Fluoranthene	ND		0.27		ug/L		10/14/13 11:06	10/22/13 18:44	5
Fluorene	ND		0.32		ug/L		10/14/13 11:06	10/22/13 18:44	5
Hexachlorobenzene	ND		2.2		ug/L		10/14/13 11:06	10/22/13 18:44	5
Hexachlorobutadiene	ND		3.2		ug/L		10/14/13 11:06	10/22/13 18:44	5
Hexachlorocyclopentadiene	ND		11		ug/L		10/14/13 11:06	10/22/13 18:44	5
Hexachloroethane	ND		3.2		ug/L		10/14/13 11:06	10/22/13 18:44	5
Indeno[1,2,3-cd]pyrene	ND		0.32		ug/L		10/14/13 11:06	10/22/13 18:44	5
Isophorone	ND		2.2		ug/L		10/14/13 11:06	10/22/13 18:44	5
N-Nitrosodimethylamine	**16**		11		ug/L		10/14/13 11:06	10/22/13 18:44	5
N-Nitrosodiphenylamine	ND		2.2		ug/L		10/14/13 11:06	10/22/13 18:44	5
Octadecane	ND		2.2		ug/L		10/14/13 11:06	10/22/13 18:44	5
Naphthalene	ND		2.2		ug/L		10/14/13 11:06	10/22/13 18:44	5
Nitrobenzene	ND		2.2		ug/L		10/14/13 11:06	10/22/13 18:44	5
Pentachlorophenol	ND		3.8		ug/L		10/14/13 11:06	10/22/13 18:44	5
Phenanthrene	ND		0.43		ug/L		10/14/13 11:06	10/22/13 18:44	5
Phenol	**22**	*	3.2		ug/L		10/14/13 11:06	10/22/13 18:44	5

Client Sample ID: YRWWTP Influent
Date Collected: 10/08/13 08:45
Date Received: 10/08/13 15:00

Lab Sample ID: 580-40823-1
Matrix: Water

Method: 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Pyrene	ND		0.32		ug/L		10/14/13 11:06	10/22/13 18:44	5
1,2-Diphenylhydrazine (as Azobenzene)	ND		5.4		ug/L		10/14/13 11:06	10/22/13 18:44	5
bis (2-chloroisopropyl) ether	ND		2.2		ug/L		10/14/13 11:06	10/22/13 18:44	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*119*		*47 - 137*	*10/14/13 11:06*	*10/22/13 18:44*	*5*
2-Fluorobiphenyl	*85*		*56 - 124*	*10/14/13 11:06*	*10/22/13 18:44*	*5*
2-Fluorophenol	*78*		*20 - 122*	*10/14/13 11:06*	*10/22/13 18:44*	*5*
Nitrobenzene-d5	*91*		*59 - 123*	*10/14/13 11:06*	*10/22/13 18:44*	*5*
Phenol-d5	*107*		*20 - 123*	*10/14/13 11:06*	*10/22/13 18:44*	*5*
Terphenyl-d14	*73*		*60 - 135*	*10/14/13 11:06*	*10/22/13 18:44*	*5*

Method: 608 - Organochlorine Pesticides/PCBs in Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND		0.011		ug/L		10/15/13 08:49	10/20/13 19:33	1
Aroclor 1016	ND		0.55		ug/L		10/15/13 08:49	10/20/13 11:12	1
alpha-BHC	ND		0.011		ug/L		10/15/13 08:49	10/20/13 19:33	1
beta-BHC	ND		0.022		ug/L		10/15/13 08:49	10/20/13 19:33	1
delta-BHC	ND		0.011		ug/L		10/15/13 08:49	10/20/13 19:33	1
gamma-BHC (Lindane)	ND		0.011		ug/L		10/15/13 08:49	10/20/13 19:33	1
4,4'-DDD	ND		0.022		ug/L		10/15/13 08:49	10/20/13 19:33	1
4,4'-DDE	ND		0.022		ug/L		10/15/13 08:49	10/20/13 19:33	1
Aroclor 1221	ND		0.55		ug/L		10/15/13 08:49	10/20/13 11:12	1
4,4'-DDT	ND		0.022		ug/L		10/15/13 08:49	10/20/13 19:33	1
Dieldrin	ND		0.022		ug/L		10/15/13 08:49	10/20/13 19:33	1
Endosulfan I	ND		0.022		ug/L		10/15/13 08:49	10/20/13 19:33	1
Aroclor 1232	ND		0.55		ug/L		10/15/13 08:49	10/20/13 11:12	1
Endosulfan II	**0.026**	p	0.022		ug/L		10/15/13 08:49	10/20/13 19:33	1
Endosulfan sulfate	ND		0.022		ug/L		10/15/13 08:49	10/20/13 19:33	1
Endrin	**0.026**	p	0.022		ug/L		10/15/13 08:49	10/20/13 19:33	1
Endrin aldehyde	ND		0.055		ug/L		10/15/13 08:49	10/20/13 19:33	1
Heptachlor	ND		0.011		ug/L		10/15/13 08:49	10/20/13 19:33	1
Heptachlor epoxide	ND		0.011		ug/L		10/15/13 08:49	10/20/13 19:33	1
Aroclor 1242	ND		0.55		ug/L		10/15/13 08:49	10/20/13 11:12	1
Toxaphene	ND		1.1		ug/L		10/15/13 08:49	10/20/13 19:33	1
alpha-Chlordane	ND		0.011		ug/L		10/15/13 08:49	10/20/13 19:33	1
Aroclor 1248	ND		0.55		ug/L		10/15/13 08:49	10/20/13 11:12	1
gamma-Chlordane	ND		0.011		ug/L		10/15/13 08:49	10/20/13 19:33	1
Aroclor 1254	ND		0.55		ug/L		10/15/13 08:49	10/20/13 11:12	1
Aroclor 1260	ND		0.55		ug/L		10/15/13 08:49	10/20/13 11:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*72*		*44 - 123*	*10/15/13 08:49*	*10/20/13 11:12*	*1*
Tetrachloro-m-xylene	*42*	*X*	*44 - 123*	*10/15/13 08:49*	*10/20/13 19:33*	*1*
DCB Decachlorobiphenyl	*49*		*37 - 156*	*10/15/13 08:49*	*10/20/13 11:12*	*1*
DCB Decachlorobiphenyl	*48*		*37 - 156*	*10/15/13 08:49*	*10/20/13 19:33*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenols, Total	ND		0.0070		mg/L		10/17/13 16:57	10/18/13 16:49	1

Client Sample ID: YRWWTP Effluent
Date Collected: 10/08/13 08:15
Date Received: 10/08/13 15:00

Lab Sample ID: 580-40823-2
Matrix: Water

Method: 624 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0		ug/L			10/19/13 01:52	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			10/19/13 01:52	1
1,1,2-Trichloroethane	ND		1.0		ug/L			10/19/13 01:52	1
1,1-Dichloroethane	ND		1.0		ug/L			10/19/13 01:52	1
1,1-Dichloroethene	ND		1.0		ug/L			10/19/13 01:52	1
1,2-Dichlorobenzene	ND		1.0		ug/L			10/19/13 01:52	1
1,2-Dichloroethane	ND		1.0		ug/L			10/19/13 01:52	1
1,2-Dichloropropane	ND		1.0		ug/L			10/19/13 01:52	1
1,3-Dichlorobenzene	ND		1.0		ug/L			10/19/13 01:52	1
1,4-Dichlorobenzene	ND		1.0		ug/L			10/19/13 01:52	1
Benzene	ND		1.0		ug/L			10/19/13 01:52	1
Bromodichloromethane	ND		1.0		ug/L			10/19/13 01:52	1
Bromoform	ND		1.0		ug/L			10/19/13 01:52	1
Bromomethane	ND		1.0		ug/L			10/19/13 01:52	1
Carbon tetrachloride	ND		1.0		ug/L			10/19/13 01:52	1
Chlorobenzene	ND		1.0		ug/L			10/19/13 01:52	1
Chloroethane	ND		1.0		ug/L			10/19/13 01:52	1
Chloroform	ND		1.0		ug/L			10/19/13 01:52	1
Chloromethane	ND		1.0		ug/L			10/19/13 01:52	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			10/19/13 01:52	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			10/19/13 01:52	1
Dibromochloromethane	ND		1.0		ug/L			10/19/13 01:52	1
Dichlorodifluoromethane	ND		1.0		ug/L			10/19/13 01:52	1
Ethylbenzene	ND		1.0		ug/L			10/19/13 01:52	1
Methylene Chloride	ND		5.0		ug/L			10/19/13 01:52	1
Tetrachloroethene	ND		1.0		ug/L			10/19/13 01:52	1
Toluene	ND		1.0		ug/L			10/19/13 01:52	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			10/19/13 01:52	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			10/19/13 01:52	1
Trichloroethene	ND		1.0		ug/L			10/19/13 01:52	1
Trichlorofluoromethane	ND		1.0		ug/L			10/19/13 01:52	1
Vinyl chloride	ND		1.0		ug/L			10/19/13 01:52	1
Xylenes, Total	ND		2.0		ug/L			10/19/13 01:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*86*		*62 - 143*		*10/19/13 01:52*	*1*
4-Bromofluorobenzene (Surr)	*116*		*76 - 124*		*10/19/13 01:52*	*1*
Dibromofluoromethane (Surr)	*101*		*67 - 129*		*10/19/13 01:52*	*1*
Toluene-d8 (Surr)	*98*		*60 - 144*		*10/19/13 01:52*	*1*

Method: 625 - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	ND		0.43		ug/L		10/14/13 11:06	10/22/13 19:04	1
1,2-Dichlorobenzene	ND		0.43		ug/L		10/14/13 11:06	10/22/13 19:04	1
1,3-Dichlorobenzene	ND		0.43		ug/L		10/14/13 11:06	10/22/13 19:04	1
1,4-Dichlorobenzene	ND		0.43		ug/L		10/14/13 11:06	10/22/13 19:04	1
2,4,5-Trichlorophenol	ND		0.43		ug/L		10/14/13 11:06	10/22/13 19:04	1
2,4,6-Trichlorophenol	ND		0.65		ug/L		10/14/13 11:06	10/22/13 19:04	1
2,4-Dichlorophenol	ND		0.43		ug/L		10/14/13 11:06	10/22/13 19:04	1
2,4-Dimethylphenol	ND		2.2		ug/L		10/14/13 11:06	10/22/13 19:04	1

Client Sample ID: YRWWTP Effluent
Date Collected: 10/08/13 08:15
Date Received: 10/08/13 15:00

Lab Sample ID: 580-40823-2
Matrix: Water

Method: 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-Dinitrophenol	ND		5.4		ug/L		10/14/13 11:06	10/22/13 19:04	1
2,4-Dinitrotoluene	ND		0.43		ug/L		10/14/13 11:06	10/22/13 19:04	1
2,6-Dinitrotoluene	ND		0.43		ug/L		10/14/13 11:06	10/22/13 19:04	1
2-Chloronaphthalene	ND		0.065		ug/L		10/14/13 11:06	10/22/13 19:04	1
2-Chlorophenol	ND		0.43		ug/L		10/14/13 11:06	10/22/13 19:04	1
2-Methylphenol	ND		0.43		ug/L		10/14/13 11:06	10/22/13 19:04	1
2-Nitrophenol	ND		0.43		ug/L		10/14/13 11:06	10/22/13 19:04	1
3,3'-Dichlorobenzidine	ND		2.2		ug/L		10/14/13 11:06	10/22/13 19:04	1
4,6-Dinitro-2-methylphenol	ND		4.3		ug/L		10/14/13 11:06	10/22/13 19:04	1
4-Bromophenyl phenyl ether	ND		0.43		ug/L		10/14/13 11:06	10/22/13 19:04	1
4-Chloro-3-methylphenol	ND		0.43		ug/L		10/14/13 11:06	10/22/13 19:04	1
4-Chlorophenyl phenyl ether	ND		0.43		ug/L		10/14/13 11:06	10/22/13 19:04	1
4-Nitrophenol	ND		3.2		ug/L		10/14/13 11:06	10/22/13 19:04	1
Acenaphthene	ND		0.11		ug/L		10/14/13 11:06	10/22/13 19:04	1
Acenaphthylene	ND		0.086		ug/L		10/14/13 11:06	10/22/13 19:04	1
Anthracene	ND		0.043		ug/L		10/14/13 11:06	10/22/13 19:04	1
Benzo[a]anthracene	ND		0.065		ug/L		10/14/13 11:06	10/22/13 19:04	1
Benzo[a]pyrene	ND		0.043		ug/L		10/14/13 11:06	10/22/13 19:04	1
Benzo[g,h,i]perylene	ND		0.065		ug/L		10/14/13 11:06	10/22/13 19:04	1
Benzofluoranthene	ND		0.086		ug/L		10/14/13 11:06	10/22/13 19:04	1
Bis(2-chloroethoxy)methane	ND		0.43		ug/L		10/14/13 11:06	10/22/13 19:04	1
Bis(2-chloroethyl)ether	ND		0.43		ug/L		10/14/13 11:06	10/22/13 19:04	1
Bis(2-ethylhexyl) phthalate	**54**		32		ug/L		10/14/13 11:06	10/23/13 20:22	10
Butyl benzyl phthalate	ND		0.65		ug/L		10/14/13 11:06	10/22/13 19:04	1
Carbazole	ND		0.43		ug/L		10/14/13 11:06	10/22/13 19:04	1
Chrysene	ND		0.043		ug/L		10/14/13 11:06	10/22/13 19:04	1
n-Decane	ND		0.65		ug/L		10/14/13 11:06	10/22/13 19:04	1
Di-n-butyl phthalate	ND	*	0.43		ug/L		10/14/13 11:06	10/22/13 19:04	1
Di-n-octyl phthalate	ND		0.43		ug/L		10/14/13 11:06	10/22/13 19:04	1
Dibenz(a,h)anthracene	ND		0.065		ug/L		10/14/13 11:06	10/22/13 19:04	1
Dibenzofuran	ND		0.43		ug/L		10/14/13 11:06	10/22/13 19:04	1
Diethyl phthalate	ND	*	0.43		ug/L		10/14/13 11:06	10/22/13 19:04	1
Dimethyl phthalate	ND	*	0.43		ug/L		10/14/13 11:06	10/22/13 19:04	1
Fluoranthene	ND		0.054		ug/L		10/14/13 11:06	10/22/13 19:04	1
Fluorene	ND		0.065		ug/L		10/14/13 11:06	10/22/13 19:04	1
Hexachlorobenzene	ND		0.43		ug/L		10/14/13 11:06	10/22/13 19:04	1
Hexachlorobutadiene	ND		0.65		ug/L		10/14/13 11:06	10/22/13 19:04	1
Hexachlorocyclopentadiene	ND		2.2		ug/L		10/14/13 11:06	10/22/13 19:04	1
Hexachloroethane	ND		0.65		ug/L		10/14/13 11:06	10/22/13 19:04	1
Indeno[1,2,3-cd]pyrene	ND		0.065		ug/L		10/14/13 11:06	10/22/13 19:04	1
Isophorone	ND		0.43		ug/L		10/14/13 11:06	10/22/13 19:04	1
N-Nitrosodimethylamine	ND		2.2		ug/L		10/14/13 11:06	10/22/13 19:04	1
N-Nitrosodiphenylamine	ND		0.43		ug/L		10/14/13 11:06	10/22/13 19:04	1
Octadecane	ND		0.43		ug/L		10/14/13 11:06	10/22/13 19:04	1
Naphthalene	ND		0.43		ug/L		10/14/13 11:06	10/22/13 19:04	1
Nitrobenzene	ND		0.43		ug/L		10/14/13 11:06	10/22/13 19:04	1
Pentachlorophenol	ND		0.76		ug/L		10/14/13 11:06	10/22/13 19:04	1
Phenanthrene	ND		0.086		ug/L		10/14/13 11:06	10/22/13 19:04	1
Phenol	ND	*	0.65		ug/L		10/14/13 11:06	10/22/13 19:04	1

Client Sample ID: YRWWTP Effluent
Date Collected: 10/08/13 08:15
Date Received: 10/08/13 15:00

Lab Sample ID: 580-40823-2
Matrix: Water

Method: 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Pyrene	ND		0.065		ug/L		10/14/13 11:06	10/22/13 19:04	1
1,2-Diphenylhydrazine (as Azobenzene)	ND		1.1		ug/L		10/14/13 11:06	10/22/13 19:04	1
bis (2-chloroisopropyl) ether	ND		0.43		ug/L		10/14/13 11:06	10/22/13 19:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*114*		*47 - 137*	*10/14/13 11:06*	*10/22/13 19:04*	*1*
2,4,6-Tribromophenol	*112*		*47 - 137*	*10/14/13 11:06*	*10/23/13 20:22*	*10*
2-Fluorobiphenyl	*81*		*56 - 124*	*10/14/13 11:06*	*10/22/13 19:04*	*1*
2-Fluorobiphenyl	*85*		*56 - 124*	*10/14/13 11:06*	*10/23/13 20:22*	*10*
2-Fluorophenol	*80*		*20 - 122*	*10/14/13 11:06*	*10/22/13 19:04*	*1*
2-Fluorophenol	*75*		*20 - 122*	*10/14/13 11:06*	*10/23/13 20:22*	*10*
Nitrobenzene-d5	*89*		*59 - 123*	*10/14/13 11:06*	*10/22/13 19:04*	*1*
Nitrobenzene-d5	*93*		*59 - 123*	*10/14/13 11:06*	*10/23/13 20:22*	*10*
Phenol-d5	*81*		*20 - 123*	*10/14/13 11:06*	*10/22/13 19:04*	*1*
Phenol-d5	*81*		*20 - 123*	*10/14/13 11:06*	*10/23/13 20:22*	*10*
Terphenyl-d14	*86*		*60 - 135*	*10/14/13 11:06*	*10/22/13 19:04*	*1*
Terphenyl-d14	*103*		*60 - 135*	*10/14/13 11:06*	*10/23/13 20:22*	*10*

Method: 608 - Organochlorine Pesticides/PCBs in Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND		0.011		ug/L		10/15/13 08:49	10/20/13 19:49	1
Aroclor 1016	ND		0.55		ug/L		10/15/13 08:49	10/20/13 11:26	1
alpha-BHC	ND		0.011		ug/L		10/15/13 08:49	10/20/13 19:49	1
beta-BHC	ND	^	0.022		ug/L		10/15/13 08:49	10/20/13 19:49	1
delta-BHC	ND		0.011		ug/L		10/15/13 08:49	10/20/13 19:49	1
gamma-BHC (Lindane)	ND		0.011		ug/L		10/15/13 08:49	10/20/13 19:49	1
4,4'-DDD	ND	^	0.022		ug/L		10/15/13 08:49	10/20/13 19:49	1
4,4'-DDE	ND		0.022		ug/L		10/15/13 08:49	10/20/13 19:49	1
Aroclor 1221	ND		0.55		ug/L		10/15/13 08:49	10/20/13 11:26	1
4,4'-DDT	ND	^	0.022		ug/L		10/15/13 08:49	10/20/13 19:49	1
Dieldrin	ND		0.022		ug/L		10/15/13 08:49	10/20/13 19:49	1
Endosulfan I	ND		0.022		ug/L		10/15/13 08:49	10/20/13 19:49	1
Aroclor 1232	ND		0.55		ug/L		10/15/13 08:49	10/20/13 11:26	1
Endosulfan II	ND		0.022		ug/L		10/15/13 08:49	10/20/13 19:49	1
Endosulfan sulfate	ND		0.022		ug/L		10/15/13 08:49	10/20/13 19:49	1
Endrin	ND	^	0.022		ug/L		10/15/13 08:49	10/20/13 19:49	1
Endrin aldehyde	ND		0.055		ug/L		10/15/13 08:49	10/20/13 19:49	1
Heptachlor	ND	^	0.011		ug/L		10/15/13 08:49	10/20/13 19:49	1
Heptachlor epoxide	ND		0.011		ug/L		10/15/13 08:49	10/20/13 19:49	1
Aroclor 1242	ND		0.55		ug/L		10/15/13 08:49	10/20/13 11:26	1
Toxaphene	ND		1.1		ug/L		10/15/13 08:49	10/20/13 19:49	1
alpha-Chlordane	ND		0.011		ug/L		10/15/13 08:49	10/20/13 19:49	1
Aroclor 1248	ND		0.55		ug/L		10/15/13 08:49	10/20/13 11:26	1
gamma-Chlordane	ND		0.011		ug/L		10/15/13 08:49	10/20/13 19:49	1
Aroclor 1254	ND		0.55		ug/L		10/15/13 08:49	10/20/13 11:26	1
Aroclor 1260	ND		0.55		ug/L		10/15/13 08:49	10/20/13 11:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*96*		*44 - 123*	*10/15/13 08:49*	*10/20/13 11:26*	*1*

Client: Cascade Analytical Inc
Project/Site: City of Yakima WWTP

TestAmerica Job ID: 580-40823-1

Client Sample ID: YRWWTP Effluent
Date Collected: 10/08/13 08:15
Date Received: 10/08/13 15:00

Lab Sample ID: 580-40823-2
Matrix: Water

Method: 608 - Organochlorine Pesticides/PCBs in Water (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*72*		*44 - 123*	*10/15/13 08:49*	*10/20/13 19:49*	*1*
DCB Decachlorobiphenyl	*77*		*37 - 156*	*10/15/13 08:49*	*10/20/13 11:26*	*1*
DCB Decachlorobiphenyl	*56*		*37 - 156*	*10/15/13 08:49*	*10/20/13 19:49*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenols, Total	ND		0.0070		mg/L		10/17/13 16:57	10/18/13 16:49	1

Client Sample ID: YRWWTP Biosolids
Date Collected: 10/08/13 11:00
Date Received: 10/08/13 15:00

Lab Sample ID: 580-40823-3
Matrix: Solid
Percent Solids: 19.4

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	**6800**		2400		ug/Kg	☼	10/18/13 14:33	10/20/13 18:37	5
Bis(2-chloroethyl)ether	ND		2400		ug/Kg	☼	10/18/13 14:33	10/20/13 18:37	5
2-Chlorophenol	ND		2400		ug/Kg	☼	10/18/13 14:33	10/20/13 18:37	5
1,3-Dichlorobenzene	ND		1200		ug/Kg	☼	10/18/13 14:33	10/20/13 18:37	5
1,4-Dichlorobenzene	ND		1200		ug/Kg	☼	10/18/13 14:33	10/20/13 18:37	5
Benzyl alcohol	ND		2400		ug/Kg	☼	10/18/13 14:33	10/20/13 18:37	5
1,2-Dichlorobenzene	ND		1300		ug/Kg	☼	10/18/13 14:33	10/20/13 18:37	5
2-Methylphenol	ND		2400		ug/Kg	☼	10/18/13 14:33	10/20/13 18:37	5
2,2'-oxybis[1-chloropropane]	ND		6000		ug/Kg	☼	10/18/13 14:33	10/20/13 18:37	5
3 & 4 Methylphenol	ND		4800		ug/Kg	☼	10/18/13 14:33	10/20/13 18:37	5
N-Nitrosodi-n-propylamine	ND		2400		ug/Kg	☼	10/18/13 14:33	10/20/13 18:37	5
Hexachloroethane	ND		2400		ug/Kg	☼	10/18/13 14:33	10/20/13 18:37	5
Nitrobenzene	ND		2400		ug/Kg	☼	10/18/13 14:33	10/20/13 18:37	5
Isophorone	ND		2400		ug/Kg	☼	10/18/13 14:33	10/20/13 18:37	5
2-Nitrophenol	ND		2400		ug/Kg	☼	10/18/13 14:33	10/20/13 18:37	5
2,4-Dimethylphenol	ND		2400		ug/Kg	☼	10/18/13 14:33	10/20/13 18:37	5
Benzoic acid	ND		60000		ug/Kg	☼	10/18/13 14:33	10/20/13 18:37	5
Bis(2-chloroethoxy)methane	ND		2400		ug/Kg	☼	10/18/13 14:33	10/20/13 18:37	5
2,4-Dichlorophenol	ND		2400		ug/Kg	☼	10/18/13 14:33	10/20/13 18:37	5
1,2,4-Trichlorobenzene	ND		1200		ug/Kg	☼	10/18/13 14:33	10/20/13 18:37	5
Naphthalene	ND		480		ug/Kg	☼	10/18/13 14:33	10/20/13 18:37	5
4-Chloroaniline	ND		2400		ug/Kg	☼	10/18/13 14:33	10/20/13 18:37	5
Hexachlorobutadiene	ND		1200		ug/Kg	☼	10/18/13 14:33	10/20/13 18:37	5
4-Chloro-3-methylphenol	ND		2400		ug/Kg	☼	10/18/13 14:33	10/20/13 18:37	5
2-Methylnaphthalene	ND		480		ug/Kg	☼	10/18/13 14:33	10/20/13 18:37	5
1-Methylnaphthalene	ND		720		ug/Kg	☼	10/18/13 14:33	10/20/13 18:37	5
Hexachlorocyclopentadiene	ND		2400		ug/Kg	☼	10/18/13 14:33	10/20/13 18:37	5
2,4,6-Trichlorophenol	ND		3600		ug/Kg	☼	10/18/13 14:33	10/20/13 18:37	5
2,4,5-Trichlorophenol	ND		2400		ug/Kg	☼	10/18/13 14:33	10/20/13 18:37	5
2-Chloronaphthalene	ND		480		ug/Kg	☼	10/18/13 14:33	10/20/13 18:37	5
2-Nitroaniline	ND		2400		ug/Kg	☼	10/18/13 14:33	10/20/13 18:37	5
Dimethyl phthalate	ND		2400		ug/Kg	☼	10/18/13 14:33	10/20/13 18:37	5
Acenaphthylene	ND		480		ug/Kg	☼	10/18/13 14:33	10/20/13 18:37	5
2,6-Dinitrotoluene	ND		2400		ug/Kg	☼	10/18/13 14:33	10/20/13 18:37	5
3-Nitroaniline	ND	*	2400		ug/Kg	☼	10/18/13 14:33	10/20/13 18:37	5
Acenaphthene	ND		480		ug/Kg	☼	10/18/13 14:33	10/20/13 18:37	5
2,4-Dinitrophenol	ND		24000		ug/Kg	☼	10/18/13 14:33	10/20/13 18:37	5
4-Nitrophenol	ND		24000		ug/Kg	☼	10/18/13 14:33	10/20/13 18:37	5
Dibenzofuran	ND		2400		ug/Kg	☼	10/18/13 14:33	10/20/13 18:37	5
2,4-Dinitrotoluene	ND		2400		ug/Kg	☼	10/18/13 14:33	10/20/13 18:37	5
Diethyl phthalate	ND		4800		ug/Kg	☼	10/18/13 14:33	10/20/13 18:37	5
4-Chlorophenyl phenyl ether	ND		2400		ug/Kg	☼	10/18/13 14:33	10/20/13 18:37	5
Fluorene	ND		480		ug/Kg	☼	10/18/13 14:33	10/20/13 18:37	5
4-Nitroaniline	ND		2400		ug/Kg	☼	10/18/13 14:33	10/20/13 18:37	5
4,6-Dinitro-2-methylphenol	ND		24000		ug/Kg	☼	10/18/13 14:33	10/20/13 18:37	5
N-Nitrosodiphenylamine	**1400**	*	1200		ug/Kg	☼	10/18/13 14:33	10/20/13 18:37	5
4-Bromophenyl phenyl ether	ND		2400		ug/Kg	☼	10/18/13 14:33	10/20/13 18:37	5
Hexachlorobenzene	ND		1200		ug/Kg	☼	10/18/13 14:33	10/20/13 18:37	5
Pentachlorophenol	ND		4800		ug/Kg	☼	10/18/13 14:33	10/20/13 18:37	5

Client Sample ID: YRWWTP Biosolids
Date Collected: 10/08/13 11:00
Date Received: 10/08/13 15:00

Lab Sample ID: 580-40823-3
Matrix: Solid
Percent Solids: 19.4

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenanthrene	ND		480		ug/Kg	☼	10/18/13 14:33	10/20/13 18:37	5
Anthracene	ND		480		ug/Kg	☼	10/18/13 14:33	10/20/13 18:37	5
Carbazole	ND		2400		ug/Kg	☼	10/18/13 14:33	10/20/13 18:37	5
Di-n-butyl phthalate	ND		12000		ug/Kg	☼	10/18/13 14:33	10/20/13 18:37	5
Fluoranthene	ND		480		ug/Kg	☼	10/18/13 14:33	10/20/13 18:37	5
Pyrene	ND		480		ug/Kg	☼	10/18/13 14:33	10/20/13 18:37	5
Butyl benzyl phthalate	ND		4800		ug/Kg	☼	10/18/13 14:33	10/20/13 18:37	5
3,3'-Dichlorobenzidine	ND	*	4800		ug/Kg	☼	10/18/13 14:33	10/20/13 18:37	5
Benzo[a]anthracene	ND		480		ug/Kg	☼	10/18/13 14:33	10/20/13 18:37	5
Chrysene	ND		600		ug/Kg	☼	10/18/13 14:33	10/20/13 18:37	5
Bis(2-ethylhexyl) phthalate	**53000**		14000		ug/Kg	☼	10/18/13 14:33	10/20/13 18:37	5
Di-n-octyl phthalate	ND		12000		ug/Kg	☼	10/18/13 14:33	10/20/13 18:37	5
Benzo[b]fluoranthene	ND		480		ug/Kg	☼	10/18/13 14:33	10/20/13 18:37	5
Benzo[k]fluoranthene	ND		600		ug/Kg	☼	10/18/13 14:33	10/20/13 18:37	5
Benzo[a]pyrene	ND		720		ug/Kg	☼	10/18/13 14:33	10/20/13 18:37	5
Indeno[1,2,3-cd]pyrene	**1100**		950		ug/Kg	☼	10/18/13 14:33	10/20/13 18:37	5
Dibenz(a,h)anthracene	ND		950		ug/Kg	☼	10/18/13 14:33	10/20/13 18:37	5
Benzo[g,h,i]perylene	ND		600		ug/Kg	☼	10/18/13 14:33	10/20/13 18:37	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorophenol	*97*		*36 - 145*	*10/18/13 14:33*	*10/20/13 18:37*	*5*
Phenol-d5	*83*		*38 - 149*	*10/18/13 14:33*	*10/20/13 18:37*	*5*
2,4,6-Tribromophenol	*85*		*28 - 143*	*10/18/13 14:33*	*10/20/13 18:37*	*5*
Nitrobenzene-d5	*88*		*38 - 141*	*10/18/13 14:33*	*10/20/13 18:37*	*5*
2-Fluorobiphenyl	*80*		*42 - 140*	*10/18/13 14:33*	*10/20/13 18:37*	*5*
Terphenyl-d14	*91*		*42 - 151*	*10/18/13 14:33*	*10/20/13 18:37*	*5*

Method: 8081A - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND		4.9		ug/Kg	☼	10/18/13 08:35	10/20/13 18:15	1
alpha-BHC	ND		4.9		ug/Kg	☼	10/18/13 08:35	10/20/13 18:15	1
beta-BHC	ND		4.9		ug/Kg	☼	10/18/13 08:35	10/20/13 18:15	1
delta-BHC	ND		4.9		ug/Kg	☼	10/18/13 08:35	10/20/13 18:15	1
gamma-BHC (Lindane)	ND		4.9		ug/Kg	☼	10/18/13 08:35	10/20/13 18:15	1
4,4'-DDD	ND	^	9.8		ug/Kg	☼	10/18/13 08:35	10/20/13 18:15	1
4,4'-DDE	ND		9.8		ug/Kg	☼	10/18/13 08:35	10/20/13 18:15	1
4,4'-DDT	ND	^	9.8		ug/Kg	☼	10/18/13 08:35	10/20/13 18:15	1
Dieldrin	ND		9.8		ug/Kg	☼	10/18/13 08:35	10/20/13 18:15	1
Endosulfan I	ND		4.9		ug/Kg	☼	10/18/13 08:35	10/20/13 18:15	1
Endosulfan II	ND		9.8		ug/Kg	☼	10/18/13 08:35	10/20/13 18:15	1
Endosulfan sulfate	ND		9.8		ug/Kg	☼	10/18/13 08:35	10/20/13 18:15	1
Endrin	ND		9.8		ug/Kg	☼	10/18/13 08:35	10/20/13 18:15	1
Endrin aldehyde	ND		9.8		ug/Kg	☼	10/18/13 08:35	10/20/13 18:15	1
Heptachlor	ND	^	9.8		ug/Kg	☼	10/18/13 08:35	10/20/13 18:15	1
Heptachlor epoxide	ND		4.9		ug/Kg	☼	10/18/13 08:35	10/20/13 18:15	1
Methoxychlor	ND	^	49		ug/Kg	☼	10/18/13 08:35	10/20/13 18:15	1
Endrin ketone	ND	^	9.8		ug/Kg	☼	10/18/13 08:35	10/20/13 18:15	1
Toxaphene	ND		490		ug/Kg	☼	10/18/13 08:35	10/20/13 18:15	1
alpha-Chlordane	ND		4.9		ug/Kg	☼	10/18/13 08:35	10/20/13 18:15	1
gamma-Chlordane	ND		4.9		ug/Kg	☼	10/18/13 08:35	10/20/13 18:15	1

Client: Cascade Analytical Inc
Project/Site: City of Yakima WWTP

TestAmerica Job ID: 580-40823-1

Client Sample ID: YRWWTP Biosolids
Date Collected: 10/08/13 11:00
Date Received: 10/08/13 15:00

Lab Sample ID: 580-40823-3
Matrix: Solid
Percent Solids: 19.4

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	61		49 - 123	10/18/13 08:35	10/20/13 18:15	1
DCB Decachlorobiphenyl	68		40 - 158	10/18/13 08:35	10/20/13 18:15	1

Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.049		mg/Kg	☼	10/18/13 08:35	10/20/13 12:35	1
PCB-1221	ND		0.054		mg/Kg	☼	10/18/13 08:35	10/20/13 12:35	1
PCB-1232	ND		0.054		mg/Kg	☼	10/18/13 08:35	10/20/13 12:35	1
PCB-1242	ND		0.049		mg/Kg	☼	10/18/13 08:35	10/20/13 12:35	1
PCB-1248	ND		0.049		mg/Kg	☼	10/18/13 08:35	10/20/13 12:35	1
PCB-1254	ND		0.049		mg/Kg	☼	10/18/13 08:35	10/20/13 12:35	1
PCB-1260	ND		0.049		mg/Kg	☼	10/18/13 08:35	10/20/13 12:35	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	78		45 - 135	10/18/13 08:35	10/20/13 12:35	1
DCB Decachlorobiphenyl	52		50 - 140	10/18/13 08:35	10/20/13 12:35	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenols, Total	ND		13		mg/Kg	☼	10/23/13 13:15	10/24/13 15:39	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		4.9		mg/Kg	☼	10/21/13 07:04	10/22/13 15:00	1
Percent Solids	19		0.10		%			10/14/13 13:32	1
Percent Moisture	81		0.10		%			10/14/13 13:32	1

Method: 624 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 490-115526/5
Matrix: Water
Analysis Batch: 115526

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0		ug/L			10/18/13 23:38	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			10/18/13 23:38	1
1,1,2-Trichloroethane	ND		1.0		ug/L			10/18/13 23:38	1
1,1-Dichloroethane	ND		1.0		ug/L			10/18/13 23:38	1
1,1-Dichloroethene	ND		1.0		ug/L			10/18/13 23:38	1
1,2-Dichlorobenzene	ND		1.0		ug/L			10/18/13 23:38	1
1,2-Dichloroethane	ND		1.0		ug/L			10/18/13 23:38	1
1,2-Dichloropropane	ND		1.0		ug/L			10/18/13 23:38	1
1,3-Dichlorobenzene	ND		1.0		ug/L			10/18/13 23:38	1
1,4-Dichlorobenzene	ND		1.0		ug/L			10/18/13 23:38	1
Benzene	ND		1.0		ug/L			10/18/13 23:38	1
Bromodichloromethane	ND		1.0		ug/L			10/18/13 23:38	1
Bromoform	ND		1.0		ug/L			10/18/13 23:38	1
Bromomethane	ND		1.0		ug/L			10/18/13 23:38	1
Carbon tetrachloride	ND		1.0		ug/L			10/18/13 23:38	1
Chlorobenzene	ND		1.0		ug/L			10/18/13 23:38	1
Chloroethane	ND		1.0		ug/L			10/18/13 23:38	1
Chloroform	ND		1.0		ug/L			10/18/13 23:38	1
Chloromethane	ND		1.0		ug/L			10/18/13 23:38	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			10/18/13 23:38	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			10/18/13 23:38	1
Dibromochloromethane	ND		1.0		ug/L			10/18/13 23:38	1
Dichlorodifluoromethane	ND		1.0		ug/L			10/18/13 23:38	1
Ethylbenzene	ND		1.0		ug/L			10/18/13 23:38	1
Methylene Chloride	ND		5.0		ug/L			10/18/13 23:38	1
Tetrachloroethene	ND		1.0		ug/L			10/18/13 23:38	1
Toluene	ND		1.0		ug/L			10/18/13 23:38	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			10/18/13 23:38	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			10/18/13 23:38	1
Trichloroethene	ND		1.0		ug/L			10/18/13 23:38	1
Trichlorofluoromethane	ND		1.0		ug/L			10/18/13 23:38	1
Vinyl chloride	ND		1.0		ug/L			10/18/13 23:38	1
Xylenes, Total	ND		2.0		ug/L			10/18/13 23:38	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*87*		*62 - 143*		*10/18/13 23:38*	*1*
4-Bromofluorobenzene (Surr)	*109*		*76 - 124*		*10/18/13 23:38*	*1*
Dibromofluoromethane (Surr)	*101*		*67 - 129*		*10/18/13 23:38*	*1*
Toluene-d8 (Surr)	*100*		*60 - 144*		*10/18/13 23:38*	*1*

Lab Sample ID: LCS 490-115526/3
Matrix: Water
Analysis Batch: 115526

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	20.0	20.5		ug/L		102	52 - 162
1,1,2,2-Tetrachloroethane	20.0	19.8		ug/L		99	46 - 157
1,1,2-Trichloroethane	20.0	18.3		ug/L		92	52 - 150

Method: 624 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 490-115526/3
Matrix: Water
Analysis Batch: 115526

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethane	20.0	18.0		ug/L		90	59 - 155
1,1-Dichloroethene	20.0	18.8		ug/L		94	10 - 234
1,2-Dichlorobenzene	20.0	19.1		ug/L		96	18 - 190
1,2-Dichloroethane	20.0	15.1		ug/L		76	49 - 155
1,2-Dichloropropane	20.0	19.1		ug/L		95	10 - 210
1,3-Dichlorobenzene	20.0	18.1		ug/L		90	59 - 156
1,4-Dichlorobenzene	20.0	18.4		ug/L		92	18 - 190
Benzene	20.0	18.7		ug/L		93	37 - 151
Bromodichloromethane	20.0	19.7		ug/L		99	35 - 155
Bromoform	20.0	24.8		ug/L		124	45 - 169
Bromomethane	20.0	23.1		ug/L		115	10 - 242
Carbon tetrachloride	20.0	19.6		ug/L		98	70 - 140
Chlorobenzene	20.0	18.8		ug/L		94	37 - 160
Chloroethane	20.0	18.6		ug/L		93	14 - 230
Chloroform	20.0	17.1		ug/L		86	51 - 138
Chloromethane	20.0	17.0		ug/L		85	10 - 273
cis-1,2-Dichloroethene	20.0	17.5		ug/L		88	68 - 135
cis-1,3-Dichloropropene	20.0	24.8		ug/L		124	10 - 227
Dibromochloromethane	20.0	21.6		ug/L		108	53 - 149
Dichlorodifluoromethane	20.0	17.2		ug/L		86	36 - 150
Ethylbenzene	20.0	18.8		ug/L		94	37 - 162
Methylene Chloride	20.0	16.8		ug/L		84	10 - 221
Tetrachloroethene	20.0	17.8		ug/L		89	64 - 148
Toluene	20.0	18.6		ug/L		93	47 - 150
trans-1,2-Dichloroethene	20.0	17.6		ug/L		88	54 - 156
trans-1,3-Dichloropropene	20.0	19.5		ug/L		97	17 - 183
Trichloroethene	20.0	19.3		ug/L		96	71 - 157
Trichlorofluoromethane	20.0	18.6		ug/L		93	17 - 181
Vinyl chloride	20.0	18.6		ug/L		93	10 - 251

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*83*		*62 - 143*
4-Bromofluorobenzene (Surr)	*100*		*76 - 124*
Dibromofluoromethane (Surr)	*98*		*67 - 129*
Toluene-d8 (Surr)	*98*		*60 - 144*

Lab Sample ID: LCSD 490-115526/4
Matrix: Water
Analysis Batch: 115526

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1-Trichloroethane	20.0	21.8		ug/L		109	52 - 162	6	
1,1,2,2-Tetrachloroethane	20.0	21.7		ug/L		109	46 - 157	9	
1,1,2-Trichloroethane	20.0	20.3		ug/L		101	52 - 150	10	
1,1-Dichloroethane	20.0	19.3		ug/L		96	59 - 155	7	
1,1-Dichloroethene	20.0	20.1		ug/L		100	10 - 234	6	
1,2-Dichlorobenzene	20.0	20.7		ug/L		103	18 - 190	8	
1,2-Dichloroethane	20.0	16.6		ug/L		83	49 - 155	9	

Method: 624 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 490-115526/4
Matrix: Water
Analysis Batch: 115526

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2-Dichloropropane	20.0	21.0		ug/L		105	10 - 210	10	
1,3-Dichlorobenzene	20.0	20.2		ug/L		101	59 - 156	11	
1,4-Dichlorobenzene	20.0	19.4		ug/L		97	18 - 190	5	
Benzene	20.0	20.2		ug/L		101	37 - 151	8	
Bromodichloromethane	20.0	21.2		ug/L		106	35 - 155	7	
Bromoform	20.0	28.1		ug/L		140	45 - 169	13	
Bromomethane	20.0	22.9		ug/L		114	10 - 242	1	
Carbon tetrachloride	20.0	21.1		ug/L		105	70 - 140	7	
Chlorobenzene	20.0	20.3		ug/L		101	37 - 160	8	
Chloroethane	20.0	18.3		ug/L		91	14 - 230	2	
Chloroform	20.0	18.5		ug/L		93	51 - 138	8	
Chloromethane	20.0	18.2		ug/L		91	10 - 273	7	
cis-1,2-Dichloroethene	20.0	19.4		ug/L		97	68 - 135	10	
cis-1,3-Dichloropropene	20.0	27.2		ug/L		136	10 - 227	9	
Dibromochloromethane	20.0	23.7		ug/L		119	53 - 149	9	
Dichlorodifluoromethane	20.0	15.6		ug/L		78	36 - 150	10	
Ethylbenzene	20.0	20.5		ug/L		103	37 - 162	9	
Methylene Chloride	20.0	18.4		ug/L		92	10 - 221	9	
Tetrachloroethene	20.0	19.6		ug/L		98	64 - 148	9	
Toluene	20.0	20.4		ug/L		102	47 - 150	9	
trans-1,2-Dichloroethene	20.0	18.8		ug/L		94	54 - 156	7	
trans-1,3-Dichloropropene	20.0	20.7		ug/L		104	17 - 183	6	
Trichloroethene	20.0	20.7		ug/L		104	71 - 157	7	
Trichlorofluoromethane	20.0	15.7		ug/L		79	17 - 181	17	
Vinyl chloride	20.0	17.5		ug/L		87	10 - 251	6	

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*84*		*62 - 143*
4-Bromofluorobenzene (Surr)	*102*		*76 - 124*
Dibromofluoromethane (Surr)	*97*		*67 - 129*
Toluene-d8 (Surr)	*99*		*60 - 144*

Method: 625 - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 580-147191/1-A
Matrix: Water
Analysis Batch: 147722

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 147191

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	ND		0.40		ug/L		10/14/13 11:06	10/22/13 17:03	1
1,2-Dichlorobenzene	ND		0.40		ug/L		10/14/13 11:06	10/22/13 17:03	1
1,3-Dichlorobenzene	ND		0.40		ug/L		10/14/13 11:06	10/22/13 17:03	1
1,4-Dichlorobenzene	ND		0.40		ug/L		10/14/13 11:06	10/22/13 17:03	1
2,4,5-Trichlorophenol	ND		0.40		ug/L		10/14/13 11:06	10/22/13 17:03	1
2,4,6-Trichlorophenol	ND		0.60		ug/L		10/14/13 11:06	10/22/13 17:03	1
2,4-Dichlorophenol	ND		0.40		ug/L		10/14/13 11:06	10/22/13 17:03	1
2,4-Dimethylphenol	ND		2.0		ug/L		10/14/13 11:06	10/22/13 17:03	1
2,4-Dinitrophenol	ND		5.0		ug/L		10/14/13 11:06	10/22/13 17:03	1

Method: 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 580-147191/1-A
Matrix: Water
Analysis Batch: 147722

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 147191

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-Dinitrotoluene	ND		0.40		ug/L		10/14/13 11:06	10/22/13 17:03	1
2,6-Dinitrotoluene	ND		0.40		ug/L		10/14/13 11:06	10/22/13 17:03	1
2-Chloronaphthalene	ND		0.060		ug/L		10/14/13 11:06	10/22/13 17:03	1
2-Chlorophenol	ND		0.40		ug/L		10/14/13 11:06	10/22/13 17:03	1
2-Methylphenol	ND		0.40		ug/L		10/14/13 11:06	10/22/13 17:03	1
2-Nitrophenol	ND		0.40		ug/L		10/14/13 11:06	10/22/13 17:03	1
3,3'-Dichlorobenzidine	ND		2.0		ug/L		10/14/13 11:06	10/22/13 17:03	1
4,6-Dinitro-2-methylphenol	ND		4.0		ug/L		10/14/13 11:06	10/22/13 17:03	1
4-Bromophenyl phenyl ether	ND		0.40		ug/L		10/14/13 11:06	10/22/13 17:03	1
4-Chloro-3-methylphenol	ND		0.40		ug/L		10/14/13 11:06	10/22/13 17:03	1
4-Chlorophenyl phenyl ether	ND		0.40		ug/L		10/14/13 11:06	10/22/13 17:03	1
4-Nitrophenol	ND		3.0		ug/L		10/14/13 11:06	10/22/13 17:03	1
Acenaphthene	ND		0.10		ug/L		10/14/13 11:06	10/22/13 17:03	1
Acenaphthylene	ND		0.080		ug/L		10/14/13 11:06	10/22/13 17:03	1
Anthracene	ND		0.040		ug/L		10/14/13 11:06	10/22/13 17:03	1
Benzo[a]anthracene	ND		0.060		ug/L		10/14/13 11:06	10/22/13 17:03	1
Benzo[a]pyrene	ND		0.040		ug/L		10/14/13 11:06	10/22/13 17:03	1
Benzo[g,h,i]perylene	ND		0.060		ug/L		10/14/13 11:06	10/22/13 17:03	1
Benzofluoranthene	ND		0.080		ug/L		10/14/13 11:06	10/22/13 17:03	1
Bis(2-chloroethoxy)methane	ND		0.40		ug/L		10/14/13 11:06	10/22/13 17:03	1
Bis(2-chloroethyl)ether	ND		0.40		ug/L		10/14/13 11:06	10/22/13 17:03	1
Bis(2-ethylhexyl) phthalate	ND		3.0		ug/L		10/14/13 11:06	10/22/13 17:03	1
Butyl benzyl phthalate	ND		0.60		ug/L		10/14/13 11:06	10/22/13 17:03	1
Carbazole	ND		0.40		ug/L		10/14/13 11:06	10/22/13 17:03	1
Chrysene	ND		0.040		ug/L		10/14/13 11:06	10/22/13 17:03	1
n-Decane	ND		0.60		ug/L		10/14/13 11:06	10/22/13 17:03	1
Di-n-butyl phthalate	ND		0.40		ug/L		10/14/13 11:06	10/22/13 17:03	1
Di-n-octyl phthalate	ND		0.40		ug/L		10/14/13 11:06	10/22/13 17:03	1
Dibenz(a,h)anthracene	ND		0.060		ug/L		10/14/13 11:06	10/22/13 17:03	1
Dibenzofuran	ND		0.40		ug/L		10/14/13 11:06	10/22/13 17:03	1
Diethyl phthalate	ND		0.40		ug/L		10/14/13 11:06	10/22/13 17:03	1
Dimethyl phthalate	ND		0.40		ug/L		10/14/13 11:06	10/22/13 17:03	1
Fluoranthene	ND		0.050		ug/L		10/14/13 11:06	10/22/13 17:03	1
Fluorene	ND		0.060		ug/L		10/14/13 11:06	10/22/13 17:03	1
Hexachlorobenzene	ND		0.40		ug/L		10/14/13 11:06	10/22/13 17:03	1
Hexachlorobutadiene	ND		0.60		ug/L		10/14/13 11:06	10/22/13 17:03	1
Hexachlorocyclopentadiene	ND		2.0		ug/L		10/14/13 11:06	10/22/13 17:03	1
Hexachloroethane	ND		0.60		ug/L		10/14/13 11:06	10/22/13 17:03	1
Indeno[1,2,3-cd]pyrene	ND		0.060		ug/L		10/14/13 11:06	10/22/13 17:03	1
Isophorone	ND		0.40		ug/L		10/14/13 11:06	10/22/13 17:03	1
N-Nitrosodimethylamine	ND		2.0		ug/L		10/14/13 11:06	10/22/13 17:03	1
N-Nitrosodiphenylamine	ND		0.40		ug/L		10/14/13 11:06	10/22/13 17:03	1
Octadecane	ND		0.40		ug/L		10/14/13 11:06	10/22/13 17:03	1
Naphthalene	ND		0.40		ug/L		10/14/13 11:06	10/22/13 17:03	1
Nitrobenzene	ND		0.40		ug/L		10/14/13 11:06	10/22/13 17:03	1
Pentachlorophenol	ND		0.70		ug/L		10/14/13 11:06	10/22/13 17:03	1
Phenanthrene	ND		0.080		ug/L		10/14/13 11:06	10/22/13 17:03	1
Phenol	ND		0.60		ug/L		10/14/13 11:06	10/22/13 17:03	1

Method: 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 580-147191/1-A
Matrix: Water
Analysis Batch: 147722

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 147191

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Pyrene	ND		0 060		ug/L		10/14/13 11:06	10/22/13 17:03	1
1,2-Diphenylhydrazine (as Azobenzene)	ND		1.0		ug/L		10/14/13 11:06	10/22/13 17:03	1
bis (2-chloroisopropyl) ether	ND		0.40		ug/L		10/14/13 11:06	10/22/13 17:03	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*78*		*47 - 137*	*10/14/13 11:06*	*10/22/13 17:03*	*1*
2-Fluorobiphenyl	*91*		*56 - 124*	*10/14/13 11:06*	*10/22/13 17:03*	*1*
2-Fluorophenol	*88*		*20 - 122*	*10/14/13 11:06*	*10/22/13 17:03*	*1*
Nitrobenzene-d5	*86*		*59 - 123*	*10/14/13 11:06*	*10/22/13 17:03*	*1*
Phenol-d5	*93*		*20 - 123*	*10/14/13 11:06*	*10/22/13 17:03*	*1*
Terphenyl-d14	*112*		*60 - 135*	*10/14/13 11:06*	*10/22/13 17:03*	*1*

Lab Sample ID: LCS 580-147191/2-A
Matrix: Water
Analysis Batch: 147722

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 147191

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,4-Trichlorobenzene	2.00	1.85		ug/L		93	44 - 142
1,2-Dichlorobenzene	2.00	1.94		ug/L		97	32 - 129
1,3-Dichlorobenzene	2.00	1.89		ug/L		95	1 - 172
1,4-Dichlorobenzene	2.00	1.92		ug/L		96	20 - 124
2,4,5-Trichlorophenol	2.00	2.36		ug/L		118	50 - 150
2,4,6-Trichlorophenol	1.99	2.37		ug/L		119	37 - 144
2,4-Dichlorophenol	1.98	2.57		ug/L		130	39 - 135
2,4-Dimethylphenol	1.98	2.24		ug/L		113	32 - 119
2,4-Dinitrotoluene	2.00	2.11		ug/L		105	39 - 139
2,6-Dinitrotoluene	2.00	2.17		ug/L		109	50 - 158
2-Chloronaphthalene	2.00	2.07		ug/L		103	60 - 118
2-Chlorophenol	1.98	2.54		ug/L		128	23 - 134
2-Nitrophenol	1.98	2.39		ug/L		121	29 - 182
3,3'-Dichlorobenzidine	3.97	3.93		ug/L		99	1 - 262
4,6-Dinitro-2-methylphenol	9.95	9.83		ug/L		99	1 - 181
4-Bromophenyl phenyl ether	2.00	2.20		ug/L		110	53 - 127
4-Chloro-3-methylphenol	2.04	2.65		ug/L		130	22 - 147
4-Chlorophenyl phenyl ether	2.00	2.04		ug/L		102	25 - 158
4-Nitrophenol	10.1	13.0		ug/L		128	1 - 132
Acenaphthene	2.00	2.04		ug/L		102	47 - 145
Acenaphthylene	2.00	2.24		ug/L		112	33 - 145
Anthracene	2.00	1.89		ug/L		95	27 - 133
Benzo[a]anthracene	2.00	2.10		ug/L		105	33 - 143
Benzo[a]pyrene	2.00	1.88		ug/L		94	17 - 163
Benzo[g,h,i]perylene	2.00	2.22		ug/L		111	1 - 219
Benzofluoranthene	4.00	4.31		ug/L		108	46 - 153
Bis(2-chloroethoxy)methane	2.00	1.92		ug/L		96	33 - 184
Bis(2-chloroethyl)ether	2.00	1.86		ug/L		93	12 - 158
Bis(2-ethylhexyl) phthalate	1.99	ND		ug/L		131	8 - 158
Butyl benzyl phthalate	2.00	2.56		ug/L		128	1 - 152

Method: 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 580-147191/2-A
Matrix: Water
Analysis Batch: 147722

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 147191

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Carbazole	2.00	2.30		ug/L		115	45 - 135
Chrysene	1.93	2.12		ug/L		110	17 - 168
n-Decane	1.99	1.89		ug/L		95	20 - 150
Di-n-butyl phthalate	2.00	2.45	*	ug/L		122	1 - 118
Di-n-octyl phthalate	2.00	2.53		ug/L		126	4 - 146
Dibenz(a,h)anthracene	2.00	2.09		ug/L		104	1 - 227
Dibenzofuran	2.00	2.13		ug/L		106	50 - 150
Diethyl phthalate	2.01	2.32	*	ug/L		115	1 - 114
Dimethyl phthalate	2.00	2.35	*	ug/L		118	1 - 112
Fluoranthene	2.00	2.09		ug/L		104	26 - 137
Fluorene	2.02	2.11		ug/L		104	59 - 121
Hexachlorobenzene	2.00	2.14		ug/L		107	1 - 152
Hexachlorobutadiene	2.00	1.80		ug/L		90	24 - 116
Hexachlorocyclopentadiene	2.00	ND		ug/L		56	20 - 150
Hexachloroethane	2.00	1.89		ug/L		95	40 - 113
Indeno[1,2,3-cd]pyrene	2.01	2.27		ug/L		113	1 - 171
Isophorone	2.00	2.45		ug/L		123	21 - 196
N-Nitrosodimethylamine	9.93	9.88		ug/L		99	20 - 150
N-Nitrosodiphenylamine	2.00	2.33		ug/L		117	50 - 150
Octadecane	1.99	2.40		ug/L		120	20 - 150
Naphthalene	2.01	1.92		ug/L		95	21 - 133
Nitrobenzene	2.01	2.29		ug/L		114	35 - 180
Pentachlorophenol	1.97	1.13		ug/L		58	14 - 176
Phenanthrene	2.01	2.08		ug/L		104	54 - 120
Phenol	2.03	2.38	*	ug/L		117	5 - 112
Pyrene	2.00	2.09		ug/L		105	52 - 115
bis (2-chloroisopropyl) ether	2.00	2.03		ug/L		102	36 - 166

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,4,6-Tribromophenol	*104*		*47 - 137*
2-Fluorobiphenyl	*99*		*56 - 124*
2-Fluorophenol	*104*		*20 - 122*
Nitrobenzene-d5	*93*		*59 - 123*
Phenol-d5	*99*		*20 - 123*
Terphenyl-d14	*119*		*60 - 135*

Lab Sample ID: LCSD 580-147191/3-A
Matrix: Water
Analysis Batch: 147722

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 147191

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,4-Trichlorobenzene	2.00	1.90		ug/L		95	44 - 142	2	50
1,2-Dichlorobenzene	2.00	1.91		ug/L		95	32 - 129	2	50
1,3-Dichlorobenzene	2.00	1.93		ug/L		96	1 - 172	2	50
1,4-Dichlorobenzene	2.00	1.93		ug/L		97	20 - 124	1	50
2,4,5-Trichlorophenol	2.00	2.34		ug/L		117	50 - 150	1	50
2,4,6-Trichlorophenol	1.99	2.46		ug/L		124	37 - 144	4	50
2,4-Dichlorophenol	1.98	2.67		ug/L		135	39 - 135	4	50

Method: 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 580-147191/3-A
Matrix: Water
Analysis Batch: 147722

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 147191

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2,4-Dimethylphenol	1.98	2.27		ug/L		115	32 - 119	1	50
2,4-Dinitrotoluene	2.00	2.18		ug/L		109	39 - 139	3	50
2,6-Dinitrotoluene	2.00	2.18		ug/L		109	50 - 158	0	50
2-Chloronaphthalene	2.00	2.11		ug/L		106	60 - 118	2	50
2-Chlorophenol	1.98	2.52		ug/L		127	23 - 134	1	50
2-Nitrophenol	1.98	2.55		ug/L		129	29 - 182	7	50
3,3'-Dichlorobenzidine	3.97	4.15		ug/L		104	1 - 262	5	50
4,6-Dinitro-2-methylphenol	9.95	10.5		ug/L		105	1 - 181	6	50
4-Bromophenyl phenyl ether	2.00	2.30		ug/L		115	53 - 127	4	50
4-Chloro-3-methylphenol	2.04	2.75		ug/L		135	22 - 147	4	50
4-Chlorophenyl phenyl ether	2.00	2.06		ug/L		103	25 - 158	1	50
4-Nitrophenol	10.1	12.9		ug/L		128	1 - 132	0	50
Acenaphthene	2.00	2.05		ug/L		102	47 - 145	1	50
Acenaphthylene	2.00	2.26		ug/L		113	33 - 145	1	50
Anthracene	2.00	1.96		ug/L		98	27 - 133	3	50
Benzo[a]anthracene	2.00	2.12		ug/L		106	33 - 143	1	50
Benzo[a]pyrene	2.00	1.97		ug/L		99	17 - 163	5	50
Benzo[g,h,i]perylene	2.00	2.33		ug/L		116	1 - 219	5	50
Benzofluoranthene	4.00	4.34		ug/L		109	46 - 153	1	50
Bis(2-chloroethoxy)methane	2.00	1.98		ug/L		99	33 - 184	3	50
Bis(2-chloroethyl)ether	2.00	1.86		ug/L		93	12 - 158	0	50
Bis(2-ethylhexyl) phthalate	1.99	ND		ug/L		129	8 - 158	2	50
Butyl benzyl phthalate	2.00	2.61		ug/L		130	1 - 152	2	50
Carbazole	2.00	2.31		ug/L		115	45 - 135	0	50
Chrysene	1.93	2.06		ug/L		107	17 - 168	3	50
n-Decane	1.99	1.94		ug/L		97	20 - 150	3	50
Di-n-butyl phthalate	2.00	2.51	*	ug/L		125	1 - 118	3	50
Di-n-octyl phthalate	2.00	2.52		ug/L		126	4 - 146	0	50
Dibenz(a,h)anthracene	2.00	2.15		ug/L		107	1 - 227	3	50
Dibenzofuran	2.00	2.10		ug/L		105	50 - 150	2	50
Diethyl phthalate	2.01	2.28		ug/L		114	1 - 114	2	50
Dimethyl phthalate	2.00	2.36	*	ug/L		118	1 - 112	0	50
Fluoranthene	2.00	2.09		ug/L		105	26 - 137	0	50
Fluorene	2.02	2.15		ug/L		106	59 - 121	2	50
Hexachlorobenzene	2.00	2.17		ug/L		108	1 - 152	1	50
Hexachlorobutadiene	2.00	1.85		ug/L		92	24 - 116	2	50
Hexachlorocyclopentadiene	2.00	ND		ug/L		59	20 - 150	5	50
Hexachloroethane	2.00	1.81		ug/L		91	40 - 113	4	50
Indeno[1,2,3-cd]pyrene	2.01	2.20		ug/L		109	1 - 171	3	50
Isophorone	2.00	2.58		ug/L		129	21 - 196	5	50
N-Nitrosodimethylamine	9.93	10.7		ug/L		107	20 - 150	8	50
N-Nitrosodiphenylamine	2.00	2.27		ug/L		114	50 - 150	3	50
Octadecane	1.99	2.39		ug/L		120	20 - 150	0	50
Naphthalene	2.01	1.98		ug/L		98	21 - 133	3	50
Nitrobenzene	2.01	2.47		ug/L		123	35 - 180	8	50
Pentachlorophenol	1.97	1.11		ug/L		56	14 - 176	2	50
Phenanthrene	2.01	2.10		ug/L		105	54 - 120	1	50
Phenol	2.03	2.51	*	ug/L		124	5 - 112	5	50

Method: 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 580-147191/3-A
Matrix: Water
Analysis Batch: 147722

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 147191

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Pyrene	2.00	2.13		ug/L		107	52 - 115	2	50
bis (2-chloroisopropyl) ether	2.00	1.93		ug/L		97	36 - 166	5	50

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2,4,6-Tribromophenol	*105*		*47 - 137*
2-Fluorobiphenyl	*98*		*56 - 124*
2-Fluorophenol	*107*		*20 - 122*
Nitrobenzene-d5	*102*		*59 - 123*
Phenol-d5	*96*		*20 - 123*
Terphenyl-d14	*120*		*60 - 135*

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 580-147558/1-A
Matrix: Solid
Analysis Batch: 147608

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 147558

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	ND		100		ug/Kg		10/18/13 14:33	10/20/13 17:37	1
Bis(2-chloroethyl)ether	ND		100		ug/Kg		10/18/13 14:33	10/20/13 17:37	1
2-Chlorophenol	ND		100		ug/Kg		10/18/13 14:33	10/20/13 17:37	1
1,3-Dichlorobenzene	ND		50		ug/Kg		10/18/13 14:33	10/20/13 17:37	1
1,4-Dichlorobenzene	ND		50		ug/Kg		10/18/13 14:33	10/20/13 17:37	1
Benzyl alcohol	ND		100		ug/Kg		10/18/13 14:33	10/20/13 17:37	1
1,2-Dichlorobenzene	ND		55		ug/Kg		10/18/13 14:33	10/20/13 17:37	1
2-Methylphenol	ND		100		ug/Kg		10/18/13 14:33	10/20/13 17:37	1
2,2'-oxybis[1-chloropropane]	ND		250		ug/Kg		10/18/13 14:33	10/20/13 17:37	1
3 & 4 Methylphenol	ND		200		ug/Kg		10/18/13 14:33	10/20/13 17:37	1
N-Nitrosodi-n-propylamine	ND		100		ug/Kg		10/18/13 14:33	10/20/13 17:37	1
Hexachloroethane	ND		100		ug/Kg		10/18/13 14:33	10/20/13 17:37	1
Nitrobenzene	ND		100		ug/Kg		10/18/13 14:33	10/20/13 17:37	1
Isophorone	ND		100		ug/Kg		10/18/13 14:33	10/20/13 17:37	1
2-Nitrophenol	ND		100		ug/Kg		10/18/13 14:33	10/20/13 17:37	1
2,4-Dimethylphenol	ND		100		ug/Kg		10/18/13 14:33	10/20/13 17:37	1
Benzoic acid	ND		2500		ug/Kg		10/18/13 14:33	10/20/13 17:37	1
Bis(2-chloroethoxy)methane	ND		100		ug/Kg		10/18/13 14:33	10/20/13 17:37	1
2,4-Dichlorophenol	ND		100		ug/Kg		10/18/13 14:33	10/20/13 17:37	1
1,2,4-Trichlorobenzene	ND		50		ug/Kg		10/18/13 14:33	10/20/13 17:37	1
Naphthalene	ND		20		ug/Kg		10/18/13 14:33	10/20/13 17:37	1
4-Chloroaniline	ND		100		ug/Kg		10/18/13 14:33	10/20/13 17:37	1
Hexachlorobutadiene	ND		50		ug/Kg		10/18/13 14:33	10/20/13 17:37	1
4-Chloro-3-methylphenol	ND		100		ug/Kg		10/18/13 14:33	10/20/13 17:37	1
2-Methylnaphthalene	ND		20		ug/Kg		10/18/13 14:33	10/20/13 17:37	1
1-Methylnaphthalene	ND		30		ug/Kg		10/18/13 14:33	10/20/13 17:37	1
Hexachlorocyclopentadiene	ND		100		ug/Kg		10/18/13 14:33	10/20/13 17:37	1
2,4,6-Trichlorophenol	ND		150		ug/Kg		10/18/13 14:33	10/20/13 17:37	1
2,4,5-Trichlorophenol	ND		100		ug/Kg		10/18/13 14:33	10/20/13 17:37	1
2-Chloronaphthalene	ND		20		ug/Kg		10/18/13 14:33	10/20/13 17:37	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 580-147558/1-A
Matrix: Solid
Analysis Batch: 147608

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 147558

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Nitroaniline	ND		100		ug/Kg		10/18/13 14:33	10/20/13 17:37	1
Dimethyl phthalate	ND		100		ug/Kg		10/18/13 14:33	10/20/13 17:37	1
Acenaphthylene	ND		20		ug/Kg		10/18/13 14:33	10/20/13 17:37	1
2,6-Dinitrotoluene	ND		100		ug/Kg		10/18/13 14:33	10/20/13 17:37	1
3-Nitroaniline	ND		100		ug/Kg		10/18/13 14:33	10/20/13 17:37	1
Acenaphthene	ND		20		ug/Kg		10/18/13 14:33	10/20/13 17:37	1
2,4-Dinitrophenol	ND		1000		ug/Kg		10/18/13 14:33	10/20/13 17:37	1
4-Nitrophenol	ND		1000		ug/Kg		10/18/13 14:33	10/20/13 17:37	1
Dibenzofuran	ND		100		ug/Kg		10/18/13 14:33	10/20/13 17:37	1
2,4-Dinitrotoluene	ND		100		ug/Kg		10/18/13 14:33	10/20/13 17:37	1
Diethyl phthalate	ND		200		ug/Kg		10/18/13 14:33	10/20/13 17:37	1
4-Chlorophenyl phenyl ether	ND		100		ug/Kg		10/18/13 14:33	10/20/13 17:37	1
Fluorene	ND		20		ug/Kg		10/18/13 14:33	10/20/13 17:37	1
4-Nitroaniline	ND		100		ug/Kg		10/18/13 14:33	10/20/13 17:37	1
4,6-Dinitro-2-methylphenol	ND		1000		ug/Kg		10/18/13 14:33	10/20/13 17:37	1
N-Nitrosodiphenylamine	ND		50		ug/Kg		10/18/13 14:33	10/20/13 17:37	1
4-Bromophenyl phenyl ether	ND		100		ug/Kg		10/18/13 14:33	10/20/13 17:37	1
Hexachlorobenzene	ND		50		ug/Kg		10/18/13 14:33	10/20/13 17:37	1
Pentachlorophenol	ND		200		ug/Kg		10/18/13 14:33	10/20/13 17:37	1
Phenanthrene	ND		20		ug/Kg		10/18/13 14:33	10/20/13 17:37	1
Anthracene	ND		20		ug/Kg		10/18/13 14:33	10/20/13 17:37	1
Carbazole	ND		100		ug/Kg		10/18/13 14:33	10/20/13 17:37	1
Di-n-butyl phthalate	ND		500		ug/Kg		10/18/13 14:33	10/20/13 17:37	1
Fluoranthene	ND		20		ug/Kg		10/18/13 14:33	10/20/13 17:37	1
Pyrene	ND		20		ug/Kg		10/18/13 14:33	10/20/13 17:37	1
Butyl benzyl phthalate	ND		200		ug/Kg		10/18/13 14:33	10/20/13 17:37	1
3,3'-Dichlorobenzidine	ND		200		ug/Kg		10/18/13 14:33	10/20/13 17:37	1
Benzo[a]anthracene	ND		20		ug/Kg		10/18/13 14:33	10/20/13 17:37	1
Chrysene	ND		25		ug/Kg		10/18/13 14:33	10/20/13 17:37	1
Bis(2-ethylhexyl) phthalate	ND		600		ug/Kg		10/18/13 14:33	10/20/13 17:37	1
Di-n-octyl phthalate	ND		500		ug/Kg		10/18/13 14:33	10/20/13 17:37	1
Benzo[b]fluoranthene	ND		20		ug/Kg		10/18/13 14:33	10/20/13 17:37	1
Benzo[k]fluoranthene	ND		25		ug/Kg		10/18/13 14:33	10/20/13 17:37	1
Benzo[a]pyrene	ND		30		ug/Kg		10/18/13 14:33	10/20/13 17:37	1
Indeno[1,2,3-cd]pyrene	ND		40		ug/Kg		10/18/13 14:33	10/20/13 17:37	1
Dibenz(a,h)anthracene	ND		40		ug/Kg		10/18/13 14:33	10/20/13 17:37	1
Benzo[g,h,i]perylene	ND		25		ug/Kg		10/18/13 14:33	10/20/13 17:37	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorophenol	*98*		*36 - 145*	*10/18/13 14:33*	*10/20/13 17:37*	*1*
Phenol-d5	*84*		*38 - 149*	*10/18/13 14:33*	*10/20/13 17:37*	*1*
2,4,6-Tribromophenol	*71*		*28 - 143*	*10/18/13 14:33*	*10/20/13 17:37*	*1*
Nitrobenzene-d5	*79*		*38 - 141*	*10/18/13 14:33*	*10/20/13 17:37*	*1*
2-Fluorobiphenyl	*84*		*42 - 140*	*10/18/13 14:33*	*10/20/13 17:37*	*1*
Terphenyl-d14	*89*		*42 - 151*	*10/18/13 14:33*	*10/20/13 17:37*	*1*

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 580-147558/2-A
Matrix: Solid
Analysis Batch: 147608

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 147558

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Phenol	1000	807		ug/Kg		81	66 - 126
Bis(2-chloroethyl)ether	1000	715		ug/Kg		72	57 - 122
2-Chlorophenol	1000	825		ug/Kg		82	65 - 125
1,3-Dichlorobenzene	1000	847		ug/Kg		85	64 - 124
1,4-Dichlorobenzene	1000	826		ug/Kg		83	62 - 132
Benzyl alcohol	1000	809		ug/Kg		81	42 - 147
1,2-Dichlorobenzene	1000	819		ug/Kg		82	68 - 118
2-Methylphenol	1000	865		ug/Kg		87	56 - 121
2,2'-oxybis[1-chloropropane]	720	733		ug/Kg		102	44 - 140
3 & 4 Methylphenol	1000	824		ug/Kg		82	61 - 126
N-Nitrosodi-n-propylamine	1000	881		ug/Kg		88	52 - 127
Hexachloroethane	1000	863		ug/Kg		86	56 - 131
Nitrobenzene	1000	814		ug/Kg		81	59 - 134
Isophorone	1000	876		ug/Kg		88	53 - 118
2-Nitrophenol	1000	816		ug/Kg		82	58 - 128
2,4-Dimethylphenol	1000	847		ug/Kg		85	58 - 133
Benzoic acid	2000	ND		ug/Kg		76	10 - 130
Bis(2-chloroethoxy)methane	1000	782		ug/Kg		78	63 - 128
2,4-Dichlorophenol	1000	835		ug/Kg		83	59 - 124
1,2,4-Trichlorobenzene	1000	830		ug/Kg		83	63 - 128
Naphthalene	1000	818		ug/Kg		82	64 - 129
4-Chloroaniline	1000	476		ug/Kg		48	20 - 181
Hexachlorobutadiene	1000	829		ug/Kg		83	59 - 134
4-Chloro-3-methylphenol	1000	736		ug/Kg		74	58 - 128
2-Methylnaphthalene	1000	874		ug/Kg		87	65 - 125
1-Methylnaphthalene	1000	955		ug/Kg		95	48 - 148
Hexachlorocyclopentadiene	1000	937		ug/Kg		94	30 - 132
2,4,6-Trichlorophenol	1000	751		ug/Kg		75	66 - 131
2,4,5-Trichlorophenol	1000	835		ug/Kg		84	64 - 124
2-Chloronaphthalene	1000	852		ug/Kg		85	69 - 129
2-Nitroaniline	1000	828		ug/Kg		83	58 - 133
Dimethyl phthalate	1000	959		ug/Kg		96	65 - 125
Acenaphthylene	1000	923		ug/Kg		92	69 - 129
2,6-Dinitrotoluene	1000	830		ug/Kg		83	65 - 125
3-Nitroaniline	1000	691	*	ug/Kg		69	80 - 165
Acenaphthene	1000	868		ug/Kg		87	65 - 130
2,4-Dinitrophenol	2000	1650		ug/Kg		83	53 - 168
4-Nitrophenol	2000	2010		ug/Kg		100	47 - 172
Dibenzofuran	1000	893		ug/Kg		89	70 - 125
2,4-Dinitrotoluene	1000	769		ug/Kg		77	57 - 122
Diethyl phthalate	1000	887		ug/Kg		89	64 - 129
4-Chlorophenyl phenyl ether	1000	870		ug/Kg		87	65 - 130
Fluorene	1000	933		ug/Kg		93	68 - 128
4-Nitroaniline	1000	800		ug/Kg		80	70 - 150
4,6-Dinitro-2-methylphenol	2000	1590		ug/Kg		80	38 - 143
N-Nitrosodiphenylamine	1000	855	*	ug/Kg		85	88 - 153
4-Bromophenyl phenyl ether	1000	938		ug/Kg		94	64 - 134
Hexachlorobenzene	1000	896		ug/Kg		90	61 - 136

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 580-147558/2-A
Matrix: Solid
Analysis Batch: 147608

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 147558

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Pentachlorophenol	2000	1410		ug/Kg		71	29 - 124
Phenanthrene	1000	877		ug/Kg		88	65 - 125
Anthracene	1000	867		ug/Kg		87	73 - 123
Carbazole	1000	920		ug/Kg		92	88 - 158
Di-n-butyl phthalate	1000	905		ug/Kg		90	69 - 124
Fluoranthene	1000	821		ug/Kg		82	61 - 121
Pyrene	1000	890		ug/Kg		89	54 - 134
Butyl benzyl phthalate	1000	919		ug/Kg		92	65 - 140
3,3'-Dichlorobenzidine	2000	1300	*	ug/Kg		65	73 - 163
Benzo[a]anthracene	1000	872		ug/Kg		87	64 - 124
Chrysene	1000	892		ug/Kg		89	71 - 126
Bis(2-ethylhexyl) phthalate	1000	996		ug/Kg		100	64 - 144
Di-n-octyl phthalate	1000	1030		ug/Kg		103	58 - 148
Benzo[b]fluoranthene	1000	896		ug/Kg		90	66 - 136
Benzo[k]fluoranthene	1000	884		ug/Kg		88	63 - 143
Benzo[a]pyrene	1000	938		ug/Kg		94	68 - 128
Indeno[1,2,3-cd]pyrene	1000	887		ug/Kg		89	59 - 139
Dibenz(a,h)anthracene	1000	923		ug/Kg		92	57 - 142
Benzo[g,h,i]perylene	1000	981		ug/Kg		98	57 - 142

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorophenol	*97*		*36 - 145*
Phenol-d5	*79*		*38 - 149*
2,4,6-Tribromophenol	*84*		*28 - 143*
Nitrobenzene-d5	*79*		*38 - 141*
2-Fluorobiphenyl	*80*		*42 - 140*
Terphenyl-d14	*90*		*42 - 151*

Lab Sample ID: LCSD 580-147558/3-A
Matrix: Solid
Analysis Batch: 147608

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 147558

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Phenol	1000	827		ug/Kg		83	66 - 126	3	26
Bis(2-chloroethyl)ether	1000	708		ug/Kg		71	57 - 122	1	60
2-Chlorophenol	1000	862		ug/Kg		86	65 - 125	4	27
1,3-Dichlorobenzene	1000	823		ug/Kg		82	64 - 124	3	60
1,4-Dichlorobenzene	1000	850		ug/Kg		85	62 - 132	3	32
Benzyl alcohol	1000	800		ug/Kg		80	42 - 147	1	60
1,2-Dichlorobenzene	1000	866		ug/Kg		87	68 - 118	6	60
2-Methylphenol	1000	894		ug/Kg		89	56 - 121	3	25
2,2'-oxybis[1-chloropropane]	720	785		ug/Kg		109	44 - 140	7	60
3 & 4 Methylphenol	1000	854		ug/Kg		85	61 - 126	4	27
N-Nitrosodi-n-propylamine	1000	935		ug/Kg		94	52 - 127	6	28
Hexachloroethane	1000	854		ug/Kg		85	56 - 131	1	60
Nitrobenzene	1000	875		ug/Kg		87	59 - 134	7	60
Isophorone	1000	926		ug/Kg		93	53 - 118	6	60
2-Nitrophenol	1000	828		ug/Kg		83	58 - 128	2	60

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 580-147558/3-A
Matrix: Solid
Analysis Batch: 147608

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 147558

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2,4-Dimethylphenol	1000	863		ug/Kg		86	58 - 133	2	60
Benzoic acid	2000	ND		ug/Kg		78	10 - 130	3	60
Bis(2-chloroethoxy)methane	1000	799		ug/Kg		80	63 - 128	2	60
2,4-Dichlorophenol	1000	831		ug/Kg		83	59 - 124	0	60
1,2,4-Trichlorobenzene	1000	856		ug/Kg		86	63 - 128	3	28
Naphthalene	1000	854		ug/Kg		85	64 - 129	4	26
4-Chloroaniline	1000	457		ug/Kg		46	20 - 181	4	60
Hexachlorobutadiene	1000	806		ug/Kg		81	59 - 134	3	60
4-Chloro-3-methylphenol	1000	721		ug/Kg		72	58 - 128	2	27
2-Methylnaphthalene	1000	893		ug/Kg		89	65 - 125	2	27
1-Methylnaphthalene	1000	978		ug/Kg		98	48 - 148	2	30
Hexachlorocyclopentadiene	1000	946		ug/Kg		95	30 - 132	1	60
2,4,6-Trichlorophenol	1000	821		ug/Kg		82	66 - 131	9	60
2,4,5-Trichlorophenol	1000	869		ug/Kg		87	64 - 124	4	60
2-Chloronaphthalene	1000	859		ug/Kg		86	69 - 129	1	25
2-Nitroaniline	1000	887		ug/Kg		89	58 - 133	7	60
Dimethyl phthalate	1000	986		ug/Kg		99	65 - 125	3	60
Acenaphthylene	1000	957		ug/Kg		96	69 - 129	4	28
2,6-Dinitrotoluene	1000	808		ug/Kg		81	65 - 125	3	60
3-Nitroaniline	1000	685	*	ug/Kg		69	80 - 165	1	60
Acenaphthene	1000	904		ug/Kg		90	65 - 130	4	27
2,4-Dinitrophenol	2000	1490		ug/Kg		75	53 - 168	10	60
4-Nitrophenol	2000	1900		ug/Kg		95	47 - 172	5	33
Dibenzofuran	1000	893		ug/Kg		89	70 - 125	0	60
2,4-Dinitrotoluene	1000	775		ug/Kg		77	57 - 122	1	31
Diethyl phthalate	1000	911		ug/Kg		91	64 - 129	3	26
4-Chlorophenyl phenyl ether	1000	881		ug/Kg		88	65 - 130	1	60
Fluorene	1000	935		ug/Kg		93	68 - 128	0	31
4-Nitroaniline	1000	870		ug/Kg		87	70 - 150	8	60
4,6-Dinitro-2-methylphenol	2000	1520		ug/Kg		76	38 - 143	5	60
N-Nitrosodiphenylamine	1000	850	*	ug/Kg		85	88 - 153	1	60
4-Bromophenyl phenyl ether	1000	968		ug/Kg		97	64 - 134	3	60
Hexachlorobenzene	1000	927		ug/Kg		93	61 - 136	3	60
Pentachlorophenol	2000	1390		ug/Kg		69	29 - 124	2	68
Phenanthrene	1000	874		ug/Kg		87	65 - 125	0	28
Anthracene	1000	869		ug/Kg		87	73 - 123	0	27
Carbazole	1000	942		ug/Kg		94	88 - 158	2	60
Di-n-butyl phthalate	1000	911		ug/Kg		91	69 - 124	1	60
Fluoranthene	1000	832		ug/Kg		83	61 - 121	1	36
Pyrene	1000	900		ug/Kg		90	54 - 134	1	31
Butyl benzyl phthalate	1000	886		ug/Kg		89	65 - 140	4	60
3,3'-Dichlorobenzidine	2000	1290	*	ug/Kg		64	73 - 163	1	60
Benzo[a]anthracene	1000	903		ug/Kg		90	64 - 124	4	27
Chrysene	1000	913		ug/Kg		91	71 - 126	2	26
Bis(2-ethylhexyl) phthalate	1000	989		ug/Kg		99	64 - 144	1	60
Di-n-octyl phthalate	1000	1050		ug/Kg		105	58 - 148	1	31
Benzo[b]fluoranthene	1000	942		ug/Kg		94	66 - 136	5	31
Benzo[k]fluoranthene	1000	860		ug/Kg		86	63 - 143	3	31

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 580-147558/3-A
Matrix: Solid
Analysis Batch: 147608

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 147558

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzo[a]pyrene	1000	918		ug/Kg		92	68 - 128	2	30
Indeno[1,2,3-cd]pyrene	1000	915		ug/Kg		92	59 - 139	3	29
Dibenz(a,h)anthracene	1000	940		ug/Kg		94	57 - 142	2	30
Benzo[g,h,i]perylene	1000	998		ug/Kg		100	57 - 142	2	28

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorophenol	*96*		*36 - 145*
Phenol-d5	*80*		*38 - 149*
2,4,6-Tribromophenol	*84*		*28 - 143*
Nitrobenzene-d5	*77*		*38 - 141*
2-Fluorobiphenyl	*80*		*42 - 140*
Terphenyl-d14	*89*		*42 - 151*

Lab Sample ID: 580-40823-3 MS
Matrix: Solid
Analysis Batch: 147608

Client Sample ID: YRWWTP Biosolids
Prep Type: Total/NA
Prep Batch: 147558

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Phenol	6800		4900	11000		ug/Kg	☼	86	70 - 140
Bis(2-chloroethyl)ether	ND		4900	3710		ug/Kg	☼	76	70 - 125
2-Chlorophenol	ND		4900	4060		ug/Kg	☼	83	65 - 135
1,3-Dichlorobenzene	ND		4900	4240	F	ug/Kg	☼	73	75 - 125
1,4-Dichlorobenzene	ND		4900	3270	F	ug/Kg	☼	67	75 - 125
Benzyl alcohol	ND		4900	3780		ug/Kg	☼	77	55 - 125
1,2-Dichlorobenzene	ND		4900	3580	F	ug/Kg	☼	73	75 - 125
2-Methylphenol	ND		4900	4040		ug/Kg	☼	82	75 - 130
2,2'-oxybis[1-chloropropane]	ND		3530	ND		ug/Kg	☼	93	75 - 125
3 & 4 Methylphenol	ND		4900	ND		ug/Kg	☼	85	75 - 130
N-Nitrosodi-n-propylamine	ND		4900	5060		ug/Kg	☼	103	75 - 140
Hexachloroethane	ND		4900	3200	F	ug/Kg	☼	65	75 - 125
Nitrobenzene	ND		4900	4110		ug/Kg	☼	84	75 - 125
Isophorone	ND		4900	4210		ug/Kg	☼	86	75 - 125
2-Nitrophenol	ND		4900	4150		ug/Kg	☼	85	65 - 140
2,4-Dimethylphenol	ND		4900	4250		ug/Kg	☼	87	65 - 140
Benzoic acid	ND		9800	ND		ug/Kg	☼	NC	20 - 175
Bis(2-chloroethoxy)methane	ND		4900	3680		ug/Kg	☼	75	75 - 125
2,4-Dichlorophenol	ND		4900	4220		ug/Kg	☼	86	65 - 130
1,2,4-Trichlorobenzene	ND		4900	3510		ug/Kg	☼	72	70 - 125
Naphthalene	ND		4900	3850		ug/Kg	☼	79	75 - 125
4-Chloroaniline	ND		4900	3410		ug/Kg	☼	41	20 - 160
Hexachlorobutadiene	ND		4900	3750		ug/Kg	☼	76	75 - 125
4-Chloro-3-methylphenol	ND		4900	4560		ug/Kg	☼	93	75 - 135
2-Methylnaphthalene	ND		4900	3700		ug/Kg	☼	76	75 - 125
1-Methylnaphthalene	ND		4900	4320		ug/Kg	☼	88	75 - 125
Hexachlorocyclopentadiene	ND		4900	ND	F	ug/Kg	☼	0	30 - 125
2,4,6-Trichlorophenol	ND		4900	ND		ug/Kg	☼	74	65 - 140
2,4,5-Trichlorophenol	ND		4900	4010		ug/Kg	☼	82	75 - 125
2-Chloronaphthalene	ND		4900	3630	F	ug/Kg	☼	74	75 - 125

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 580-40823-3 MS
Matrix: Solid
Analysis Batch: 147608

Client Sample ID: YRWWTP Biosolids
Prep Type: Total/NA
Prep Batch: 147558

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
2-Nitroaniline	ND		4900	4960		ug/Kg	☼	101	75 - 135
Dimethyl phthalate	ND		4900	4300		ug/Kg	☼	88	60 - 160
Acenaphthylene	ND		4900	4210		ug/Kg	☼	86	75 - 125
2,6-Dinitrotoluene	ND		4900	3770		ug/Kg	☼	77	75 - 125
3-Nitroaniline	ND	*	4900	3490		ug/Kg	☼	71	60 - 140
Acenaphthene	ND		4900	3750		ug/Kg	☼	77	75 - 125
2,4-Dinitrophenol	ND		9800	ND		ug/Kg	☼	111	60 - 135
4-Nitrophenol	ND		9800	ND	F	ug/Kg	☼	163	65 - 125
Dibenzofuran	ND		4900	3900		ug/Kg	☼	80	75 - 125
2,4-Dinitrotoluene	ND		4900	4490		ug/Kg	☼	92	75 - 125
Diethyl phthalate	ND		4900	ND		ug/Kg	☼	83	60 - 155
4-Chlorophenyl phenyl ether	ND		4900	3720		ug/Kg	☼	76	75 - 125
Fluorene	ND		4900	4280		ug/Kg	☼	87	75 - 125
4-Nitroaniline	ND		4900	4350		ug/Kg	☼	89	65 - 125
4,6-Dinitro-2-methylphenol	ND		9800	ND		ug/Kg	☼	67	50 - 135
N-Nitrosodiphenylamine	1400	*	4900	4980	F	ug/Kg	☼	73	75 - 125
4-Bromophenyl phenyl ether	ND		4900	4240		ug/Kg	☼	86	75 - 125
Hexachlorobenzene	ND		4900	3840		ug/Kg	☼	78	75 - 125
Pentachlorophenol	ND		9800	6590	F	ug/Kg	☼	51	55 - 125
Phenanthrene	ND		4900	4000		ug/Kg	☼	76	75 - 125
Anthracene	ND		4900	4240		ug/Kg	☼	87	75 - 125
Carbazole	ND		4900	4250		ug/Kg	☼	87	75 - 125
Di-n-butyl phthalate	ND		4900	ND		ug/Kg	☼	76	55 - 145
Fluoranthene	ND		4900	3690		ug/Kg	☼	70	70 - 125
Pyrene	ND		4900	4100		ug/Kg	☼	78	75 - 125
Butyl benzyl phthalate	ND		4900	5600		ug/Kg	☼	114	55 - 145
3,3'-Dichlorobenzidine	ND	*	9800	ND	F	ug/Kg	☼	16	20 - 160
Benzo[a]anthracene	ND		4900	4230		ug/Kg	☼	82	75 - 125
Chrysene	ND		4900	4070		ug/Kg	☼	83	75 - 125
Bis(2-ethylhexyl) phthalate	53000		4900	56200	4	ug/Kg	☼	67	55 - 145
Di-n-octyl phthalate	ND		4900	ND		ug/Kg	☼	100	55 - 145
Benzo[b]fluoranthene	ND		4900	4380		ug/Kg	☼	84	75 - 125
Benzo[k]fluoranthene	ND		4900	3940		ug/Kg	☼	77	75 - 125
Benzo[a]pyrene	ND		4900	4160		ug/Kg	☼	85	75 - 125
Indeno[1,2,3-cd]pyrene	1100		4900	2930	F	ug/Kg	☼	37	75 - 125
Dibenz(a,h)anthracene	ND		4900	2900	F	ug/Kg	☼	59	75 - 125
Benzo[g,h,i]perylene	ND		4900	3110	F	ug/Kg	☼	63	75 - 125

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
2-Fluorophenol	*87*		*36 - 145*
Phenol-d5	*80*		*38 - 149*
2,4,6-Tribromophenol	*86*		*28 - 143*
Nitrobenzene-d5	*74*		*38 - 141*
2-Fluorobiphenyl	*69*		*42 - 140*
Terphenyl-d14	*83*		*42 - 151*

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 580-40823-3 MSD
Matrix: Solid
Analysis Batch: 147608

Client Sample ID: YRWWTP Biosolids
Prep Type: Total/NA
Prep Batch: 147558

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Phenol	6800		4910	10600		ug/Kg	☼	77	70 - 140	4	26
Bis(2-chloroethyl)ether	ND		4910	3880		ug/Kg	☼	79	70 - 125	4	60
2-Chlorophenol	ND		4910	4150		ug/Kg	☼	84	65 - 135	2	27
1,3-Dichlorobenzene	ND		4910	4430		ug/Kg	☼	77	75 - 125	5	60
1,4-Dichlorobenzene	ND		4910	3760		ug/Kg	☼	77	75 - 125	14	32
Benzyl alcohol	ND		4910	4000		ug/Kg	☼	81	55 - 125	5	60
1,2-Dichlorobenzene	ND		4910	3860		ug/Kg	☼	78	75 - 125	7	60
2-Methylphenol	ND		4910	4390		ug/Kg	☼	89	75 - 130	8	25
2,2'-oxybis[1-chloropropane]	ND		3540	ND		ug/Kg	☼	100	75 - 125	8	60
3 & 4 Methylphenol	ND		4910	ND		ug/Kg	☼	81	75 - 130	5	27
N-Nitrosodi-n-propylamine	ND		4910	4960		ug/Kg	☼	101	75 - 140	2	28
Hexachloroethane	ND		4910	2710	F	ug/Kg	☼	55	75 - 125	17	60
Nitrobenzene	ND		4910	4310		ug/Kg	☼	88	75 - 125	5	60
Isophorone	ND		4910	4390		ug/Kg	☼	89	75 - 125	4	60
2-Nitrophenol	ND		4910	3860		ug/Kg	☼	78	65 - 140	7	60
2,4-Dimethylphenol	ND		4910	4460		ug/Kg	☼	91	65 - 140	5	60
Benzoic acid	ND		9830	ND		ug/Kg	☼	NC	20 - 175	NC	60
Bis(2-chloroethoxy)methane	ND		4910	3780		ug/Kg	☼	77	75 - 125	3	60
2,4-Dichlorophenol	ND		4910	4150		ug/Kg	☼	84	65 - 130	2	60
1,2,4-Trichlorobenzene	ND		4910	3870		ug/Kg	☼	79	70 - 125	10	28
Naphthalene	ND		4910	4140		ug/Kg	☼	84	75 - 125	7	26
4-Chloroaniline	ND		4910	3960		ug/Kg	☼	51	20 - 160	15	60
Hexachlorobutadiene	ND		4910	3720		ug/Kg	☼	76	75 - 125	1	60
4-Chloro-3-methylphenol	ND		4910	4630		ug/Kg	☼	94	75 - 135	2	27
2-Methylnaphthalene	ND		4910	4120		ug/Kg	☼	84	75 - 125	11	27
1-Methylnaphthalene	ND		4910	4450		ug/Kg	☼	90	75 - 125	3	30
Hexachlorocyclopentadiene	ND		4910	ND	F	ug/Kg	☼	0	30 - 125	NC	60
2,4,6-Trichlorophenol	ND		4910	4400		ug/Kg	☼	90	65 - 140	19	60
2,4,5-Trichlorophenol	ND		4910	4340		ug/Kg	☼	88	75 - 125	8	60
2-Chloronaphthalene	ND		4910	3860		ug/Kg	☼	79	75 - 125	6	25
2-Nitroaniline	ND		4910	4670		ug/Kg	☼	95	75 - 135	6	60
Dimethyl phthalate	ND		4910	4260		ug/Kg	☼	87	60 - 160	1	60
Acenaphthylene	ND		4910	4350		ug/Kg	☼	88	75 - 125	3	28
2,6-Dinitrotoluene	ND		4910	4840		ug/Kg	☼	98	75 - 125	25	60
3-Nitroaniline	ND	*	4910	4090		ug/Kg	☼	83	60 - 140	16	60
Acenaphthene	ND		4910	4030		ug/Kg	☼	82	75 - 125	7	27
2,4-Dinitrophenol	ND		9830	ND		ug/Kg	☼	109	60 - 135	1	60
4-Nitrophenol	ND		9830	ND	F	ug/Kg	☼	170	65 - 125	5	33
Dibenzofuran	ND		4910	4170		ug/Kg	☼	85	75 - 125	7	60
2,4-Dinitrotoluene	ND		4910	4140		ug/Kg	☼	84	75 - 125	8	31
Diethyl phthalate	ND		4910	ND		ug/Kg	☼	87	60 - 155	5	26
4-Chlorophenyl phenyl ether	ND		4910	3990		ug/Kg	☼	81	75 - 125	7	60
Fluorene	ND		4910	4320		ug/Kg	☼	88	75 - 125	1	31
4-Nitroaniline	ND		4910	4130		ug/Kg	☼	84	65 - 125	5	60
4,6-Dinitro-2-methylphenol	ND		9830	ND		ug/Kg	☼	79	50 - 135	16	60
N-Nitrosodiphenylamine	1400	*	4920	5620		ug/Kg	☼	86	75 - 125	12	60
4-Bromophenyl phenyl ether	ND		4910	4070		ug/Kg	☼	83	75 - 125	4	60
Hexachlorobenzene	ND		4910	4140		ug/Kg	☼	84	75 - 125	8	60

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 580-40823-3 MSD
Matrix: Solid
Analysis Batch: 147608

Client Sample ID: YRWWTP Biosolids
Prep Type: Total/NA
Prep Batch: 147558

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Pentachlorophenol	ND		9830	7280		ug/Kg	☼	58	55 - 125	10	68
Phenanthrene	ND		4910	4390		ug/Kg	☼	84	75 - 125	9	28
Anthracene	ND		4910	4390		ug/Kg	☼	89	75 - 125	4	27
Carbazole	ND		4910	4450		ug/Kg	☼	90	75 - 125	5	60
Di-n-butyl phthalate	ND		4910	ND		ug/Kg	☼	82	55 - 145	8	60
Fluoranthene	ND		4910	4160		ug/Kg	☼	79	70 - 125	12	36
Pyrene	ND		4910	4530		ug/Kg	☼	86	75 - 125	10	31
Butyl benzyl phthalate	ND		4910	6100		ug/Kg	☼	124	55 - 145	9	60
3,3'-Dichlorobenzidine	ND	*	9830	ND	F	ug/Kg	☼	19	20 - 160	16	60
Benzo[a]anthracene	ND		4910	4370		ug/Kg	☼	85	75 - 125	3	27
Chrysene	ND		4910	4340		ug/Kg	☼	88	75 - 125	6	26
Bis(2-ethylhexyl) phthalate	53000		4910	55200	4	ug/Kg	☼	47	55 - 145	2	60
Di-n-octyl phthalate	ND		4910	ND		ug/Kg	☼	101	55 - 145	1	31
Benzo[b]fluoranthene	ND		4910	4660		ug/Kg	☼	89	75 - 125	6	31
Benzo[k]fluoranthene	ND		4910	4120		ug/Kg	☼	80	75 - 125	5	31
Benzo[a]pyrene	ND		4910	4540		ug/Kg	☼	92	75 - 125	9	30
Indeno[1,2,3-cd]pyrene	1100		4910	4150	F	ug/Kg	☼	62	75 - 125	35	29
Dibenz(a,h)anthracene	ND		4910	3200	F	ug/Kg	☼	65	75 - 125	10	30
Benzo[g,h,i]perylene	ND		4910	3430	F	ug/Kg	☼	70	75 - 125	10	28

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
2-Fluorophenol	*81*		*36 - 145*
Phenol-d5	*84*		*38 - 149*
2,4,6-Tribromophenol	*89*		*28 - 143*
Nitrobenzene-d5	*90*		*38 - 141*
2-Fluorobiphenyl	*68*		*42 - 140*
Terphenyl-d14	*90*		*42 - 151*

Method: 608 - Organochlorine Pesticides/PCBs in Water

Lab Sample ID: MB 580-147264/1-A
Matrix: Water
Analysis Batch: 147601

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 147264

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor 1016	ND		0.50		ug/L		10/15/13 08:49	10/20/13 10:30	1
Aroclor 1221	ND		0.50		ug/L		10/15/13 08:49	10/20/13 10:30	1
Aroclor 1232	ND		0.50		ug/L		10/15/13 08:49	10/20/13 10:30	1
Aroclor 1242	ND		0.50		ug/L		10/15/13 08:49	10/20/13 10:30	1
Aroclor 1248	ND		0.50		ug/L		10/15/13 08:49	10/20/13 10:30	1
Aroclor 1254	ND		0.50		ug/L		10/15/13 08:49	10/20/13 10:30	1
Aroclor 1260	ND		0.50		ug/L		10/15/13 08:49	10/20/13 10:30	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*99*		*44 - 123*	*10/15/13 08:49*	*10/20/13 10:30*	*1*
DCB Decachlorobiphenyl	*114*		*37 - 156*	*10/15/13 08:49*	*10/20/13 10:30*	*1*

Method: 608 - Organochlorine Pesticides/PCBs in Water (Continued)

Lab Sample ID: MB 580-147264/1-A
Matrix: Water
Analysis Batch: 147612

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 147264

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND		0.010		ug/L		10/15/13 08:49	10/20/13 16:10	1
alpha-BHC	ND		0.010		ug/L		10/15/13 08:49	10/20/13 16:10	1
beta-BHC	ND		0.020		ug/L		10/15/13 08:49	10/20/13 16:10	1
delta-BHC	ND		0.010		ug/L		10/15/13 08:49	10/20/13 16:10	1
gamma-BHC (Lindane)	ND		0.010		ug/L		10/15/13 08:49	10/20/13 16:10	1
4,4'-DDD	ND		0.020		ug/L		10/15/13 08:49	10/20/13 16:10	1
4,4'-DDE	ND		0.020		ug/L		10/15/13 08:49	10/20/13 16:10	1
4,4'-DDT	ND		0.020		ug/L		10/15/13 08:49	10/20/13 16:10	1
Dieldrin	ND		0.020		ug/L		10/15/13 08:49	10/20/13 16:10	1
Endosulfan I	ND		0.020		ug/L		10/15/13 08:49	10/20/13 16:10	1
Endosulfan II	ND		0.020		ug/L		10/15/13 08:49	10/20/13 16:10	1
Endosulfan sulfate	ND		0.020		ug/L		10/15/13 08:49	10/20/13 16:10	1
Endrin	ND		0.020		ug/L		10/15/13 08:49	10/20/13 16:10	1
Endrin aldehyde	ND		0.050		ug/L		10/15/13 08:49	10/20/13 16:10	1
Heptachlor	ND		0.010		ug/L		10/15/13 08:49	10/20/13 16:10	1
Heptachlor epoxide	ND		0.010		ug/L		10/15/13 08:49	10/20/13 16:10	1
Toxaphene	ND		1.0		ug/L		10/15/13 08:49	10/20/13 16:10	1
alpha-Chlordane	ND		0.010		ug/L		10/15/13 08:49	10/20/13 16:10	1
gamma-Chlordane	ND		0.010		ug/L		10/15/13 08:49	10/20/13 16:10	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*79*		*44 - 123*	*10/15/13 08:49*	*10/20/13 16:10*	*1*
DCB Decachlorobiphenyl	*87*		*37 - 156*	*10/15/13 08:49*	*10/20/13 16:10*	*1*

Lab Sample ID: LCS 580-147264/2-A
Matrix: Water
Analysis Batch: 147612

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 147264

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aldrin	0.200	0.177		ug/L		89	42 - 122
alpha-BHC	0.200	0.176		ug/L		88	37 - 134
beta-BHC	0.200	0.168		ug/L		84	17 - 147
delta-BHC	0.200	0.149		ug/L		75	19 - 140
gamma-BHC (Lindane)	0.200	0.176		ug/L		88	32 - 127
4,4'-DDD	0.200	0.183		ug/L		92	31 - 141
4,4'-DDE	0.200	0.181		ug/L		90	30 - 145
4,4'-DDT	0.200	0.179		ug/L		89	25 - 160
Dieldrin	0.200	0.184		ug/L		92	36 - 146
Endosulfan I	0.200	0.174		ug/L		87	45 - 153
Endosulfan II	0.200	0.164		ug/L		82	0.1 - 202
Endosulfan sulfate	0.200	0.174		ug/L		87	26 - 144
Endrin	0.200	0.181		ug/L		91	30 - 147
Endrin aldehyde	0.200	0.178		ug/L		89	50 - 150
Heptachlor	0.200	0.183		ug/L		91	34 - 111
Heptachlor epoxide	0.200	0.188		ug/L		94	37 - 142
alpha-Chlordane	0.200	0.180		ug/L		90	50 - 150

Method: 608 - Organochlorine Pesticides/PCBs in Water (Continued)

Lab Sample ID: LCS 580-147264/2-A
Matrix: Water
Analysis Batch: 147612

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 147264

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Tetrachloro-m-xylene	82		44 - 123
DCB Decachlorobiphenyl	81		37 - 156

Lab Sample ID: LCS 580-147264/6-A
Matrix: Water
Analysis Batch: 147601

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 147264

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aroclor 1016	1.00	1.01		ug/L		101	50 - 114
Aroclor 1260	1.00	1.02		ug/L		102	8 - 127

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Tetrachloro-m-xylene	78		44 - 123
DCB Decachlorobiphenyl	87		37 - 156

Lab Sample ID: LCSD 580-147264/3-A
Matrix: Water
Analysis Batch: 147612

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 147264

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aldrin	0.200	0.185		ug/L		93	42 - 122	4	26
alpha-BHC	0.200	0.184		ug/L		92	37 - 134	4	24
beta-BHC	0.200	0.174		ug/L		87	17 - 147	4	27
delta-BHC	0.200	0.155		ug/L		77	19 - 140	4	32
gamma-BHC (Lindane)	0.200	0.183		ug/L		92	32 - 127	4	27
4,4'-DDD	0.200	0.196		ug/L		98	31 - 141	7	35
4,4'-DDE	0.200	0.189		ug/L		95	30 - 145	5	32
4,4'-DDT	0.200	0.193		ug/L		97	25 - 160	7	34
Dieldrin	0.200	0.197		ug/L		99	36 - 146	7	30
Endosulfan I	0.200	0.198		ug/L		99	45 - 153	13	27
Endosulfan II	0.200	0.212		ug/L		106	0.1 - 202	5	31
Endosulfan sulfate	0.200	0.184		ug/L		92	26 - 144	6	32
Endrin	0.200	0.192		ug/L		96	30 - 147	6	31
Endrin aldehyde	0.200	0.196		ug/L		98	50 - 150	9	35
Heptachlor	0.200	0.188		ug/L		94	34 - 111	3	25
Heptachlor epoxide	0.200	0.199		ug/L		100	37 - 142	6	26
alpha-Chlordane	0.200	0.199		ug/L		100	50 - 150	10	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Tetrachloro-m-xylene	88		44 - 123
DCB Decachlorobiphenyl	99		37 - 156

Method: 608 - Organochlorine Pesticides/PCBs in Water (Continued)

Lab Sample ID: LCSD 580-147264/7-A
Matrix: Water
Analysis Batch: 147601

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 147264

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aroclor 1016	1.00	1.07		ug/L		107	50 - 114	6	50
Aroclor 1260	1.00	1.20		ug/L		120	8 - 127	16	50

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Tetrachloro-m-xylene	*92*		*44 - 123*
DCB Decachlorobiphenyl	*102*		*37 - 156*

Method: 8081A - Organochlorine Pesticides (GC)

Lab Sample ID: MB 580-147508/1-A
Matrix: Solid
Analysis Batch: 147611

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 147508

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND		1.0		ug/Kg		10/18/13 08:35	10/20/13 15:23	1
alpha-BHC	ND		1.0		ug/Kg		10/18/13 08:35	10/20/13 15:23	1
beta-BHC	ND		1.0		ug/Kg		10/18/13 08:35	10/20/13 15:23	1
delta-BHC	ND		1.0		ug/Kg		10/18/13 08:35	10/20/13 15:23	1
gamma-BHC (Lindane)	ND		1.0		ug/Kg		10/18/13 08:35	10/20/13 15:23	1
4,4'-DDD	ND		2.0		ug/Kg		10/18/13 08:35	10/20/13 15:23	1
4,4'-DDE	ND		2.0		ug/Kg		10/18/13 08:35	10/20/13 15:23	1
4,4'-DDT	ND		2.0		ug/Kg		10/18/13 08:35	10/20/13 15:23	1
Dieldrin	ND		2.0		ug/Kg		10/18/13 08:35	10/20/13 15:23	1
Endosulfan I	ND		1.0		ug/Kg		10/18/13 08:35	10/20/13 15:23	1
Endosulfan II	ND		2.0		ug/Kg		10/18/13 08:35	10/20/13 15:23	1
Endosulfan sulfate	ND		2.0		ug/Kg		10/18/13 08:35	10/20/13 15:23	1
Endrin	ND		2.0		ug/Kg		10/18/13 08:35	10/20/13 15:23	1
Endrin aldehyde	ND		2.0		ug/Kg		10/18/13 08:35	10/20/13 15:23	1
Heptachlor	ND		2.0		ug/Kg		10/18/13 08:35	10/20/13 15:23	1
Heptachlor epoxide	ND		1.0		ug/Kg		10/18/13 08:35	10/20/13 15:23	1
Methoxychlor	ND		10		ug/Kg		10/18/13 08:35	10/20/13 15:23	1
Endrin ketone	ND		2.0		ug/Kg		10/18/13 08:35	10/20/13 15:23	1
Toxaphene	ND		100		ug/Kg		10/18/13 08:35	10/20/13 15:23	1
alpha-Chlordane	ND		1.0		ug/Kg		10/18/13 08:35	10/20/13 15:23	1
gamma-Chlordane	ND		1.0		ug/Kg		10/18/13 08:35	10/20/13 15:23	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*78*		*49 - 123*	*10/18/13 08:35*	*10/20/13 15:23*	*1*
DCB Decachlorobiphenyl	*91*		*40 - 158*	*10/18/13 08:35*	*10/20/13 15:23*	*1*

Lab Sample ID: LCS 580-147508/2-A
Matrix: Solid
Analysis Batch: 147611

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 147508

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aldrin	20.0	17.0		ug/Kg		85	54 - 128
alpha-BHC	20.0	16.8		ug/Kg		84	49 - 124

Method: 8081A - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: LCS 580-147508/2-A
Matrix: Solid
Analysis Batch: 147611

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 147508

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
beta-BHC	20.0	15.8		ug/Kg		79	51 - 129
delta-BHC	20.0	14.1		ug/Kg		70	36 - 139
gamma-BHC (Lindane)	20.0	16.8		ug/Kg		84	54 - 128
4,4'-DDD	20.0	17.6		ug/Kg		88	48 - 137
4,4'-DDE	20.0	17.3		ug/Kg		86	53 - 128
4,4'-DDT	20.0	17.2		ug/Kg		86	43 - 144
Dieldrin	20.0	17.8		ug/Kg		89	56 - 131
Endosulfan I	20.0	18.2		ug/Kg		91	50 - 130
Endosulfan II	20.0	19.5		ug/Kg		97	44 - 142
Endosulfan sulfate	20.0	16.5		ug/Kg		83	47 - 129
Endrin	20.0	17.5		ug/Kg		87	49 - 147
Endrin aldehyde	20.0	16.6		ug/Kg		83	52 - 136
Heptachlor	20.0	17.6		ug/Kg		88	36 - 137
Heptachlor epoxide	20.0	18.1		ug/Kg		90	57 - 130
Methoxychlor	20.0	17.6		ug/Kg		88	51 - 149
Endrin ketone	20.0	17.8		ug/Kg		89	52 - 148
alpha-Chlordane	20.0	18.2		ug/Kg		91	54 - 134
gamma-Chlordane	20.0	18.3		ug/Kg		92	52 - 131

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Tetrachloro-m-xylene	*83*		*49 - 123*
DCB Decachlorobiphenyl	*90*		*40 - 158*

Lab Sample ID: LCSD 580-147508/3-A
Matrix: Solid
Analysis Batch: 147611

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 147508

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aldrin	20.0	16.9		ug/Kg		84	54 - 128	1	24
alpha-BHC	20.0	16.7		ug/Kg		83	49 - 124	1	28
beta-BHC	20.0	15.6		ug/Kg		78	51 - 129	1	32
delta-BHC	20.0	14.0		ug/Kg		70	36 - 139	1	36
gamma-BHC (Lindane)	20.0	16.5		ug/Kg		82	54 - 128	2	29
4,4'-DDD	20.0	17.6		ug/Kg		88	48 - 137	0	41
4,4'-DDE	20.0	17.2		ug/Kg		86	53 - 128	0	40
4,4'-DDT	20.0	17.2		ug/Kg		86	43 - 144	0	47
Dieldrin	20.0	17.8		ug/Kg		89	56 - 131	0	32
Endosulfan I	20.0	17.4		ug/Kg		87	50 - 130	4	31
Endosulfan II	20.0	19.4		ug/Kg		97	44 - 142	1	36
Endosulfan sulfate	20.0	16.5		ug/Kg		82	47 - 129	0	43
Endrin	20.0	17.5		ug/Kg		88	49 - 147	0	36
Endrin aldehyde	20.0	16.6		ug/Kg		83	52 - 136	0	47
Heptachlor	20.0	17.4		ug/Kg		87	36 - 137	1	31
Heptachlor epoxide	20.0	17.9		ug/Kg		90	57 - 130	1	31
Methoxychlor	20.0	16.9		ug/Kg		84	51 - 149	4	46
Endrin ketone	20.0	17.8		ug/Kg		89	52 - 148	0	45
alpha-Chlordane	20.0	18.0		ug/Kg		90	54 - 134	1	33
gamma-Chlordane	20.0	18.2		ug/Kg		91	52 - 131	1	32

Method: 8081A - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: LCSD 580-147508/3-A
Matrix: Solid
Analysis Batch: 147611

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 147508

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Tetrachloro-m-xylene	*80*		*49 - 123*
DCB Decachlorobiphenyl	*91*		*40 - 158*

Lab Sample ID: 580-40823-3 MS
Matrix: Solid
Analysis Batch: 147611

Client Sample ID: YRWWTP Biosolids
Prep Type: Total/NA
Prep Batch: 147508

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Aldrin	ND		100	140	F	ug/Kg	☼	140	54 - 128
alpha-BHC	ND		100	70.7		ug/Kg	☼	71	49 - 124
beta-BHC	ND		100	83.4		ug/Kg	☼	83	51 - 129
delta-BHC	ND		100	90.8		ug/Kg	☼	91	36 - 139
gamma-BHC (Lindane)	ND		100	57.2		ug/Kg	☼	57	54 - 128
4,4'-DDD	ND	^	100	101	^	ug/Kg	☼	101	48 - 137
4,4'-DDE	1100		100	289	4	ug/Kg	☼	-783	53 - 128
4,4'-DDT	ND	^	100	39.9	F ^	ug/Kg	☼	40	43 - 144
Dieldrin	ND		100	125		ug/Kg	☼	125	56 - 131
Endosulfan I	ND		100	97.2		ug/Kg	☼	97	50 - 130
Endosulfan II	ND		100	298	F	ug/Kg	☼	298	44 - 142
Endosulfan sulfate	ND		100	112		ug/Kg	☼	112	47 - 129
Endrin	ND		100	103		ug/Kg	☼	103	49 - 147
Endrin aldehyde	ND		100	26.9	F	ug/Kg	☼	27	52 - 136
Heptachlor	ND	^	100	75.2	^	ug/Kg	☼	75	36 - 137
Heptachlor epoxide	ND		100	249	F	ug/Kg	☼	249	57 - 130
Methoxychlor	ND	^	100	96.3	^	ug/Kg	☼	96	51 - 149
Endrin ketone	ND	^	100	308	F ^	ug/Kg	☼	307	52 - 148
alpha-Chlordane	ND		100	3670	E F	ug/Kg	☼	3665	54 - 134
gamma-Chlordane	ND		100	ND	F	ug/Kg	☼	2	52 - 131

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Tetrachloro-m-xylene	*97*		*49 - 123*
DCB Decachlorobiphenyl	*72*		*40 - 158*

Lab Sample ID: 580-40823-3 MSD
Matrix: Solid
Analysis Batch: 147611

Client Sample ID: YRWWTP Biosolids
Prep Type: Total/NA
Prep Batch: 147508

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aldrin	ND		97.3	68.3	F	ug/Kg	☼	70	54 - 128	69	30
alpha-BHC	ND		97.3	51.2	F	ug/Kg	☼	53	49 - 124	32	30
beta-BHC	ND		97.3	ND	F	ug/Kg	☼	3	51 - 129	187	30
delta-BHC	ND		97.3	75.1		ug/Kg	☼	77	36 - 139	19	30
gamma-BHC (Lindane)	ND		97.3	38.9	F	ug/Kg	☼	40	54 - 128	38	30
4,4'-DDD	ND	^	97.3	63.8	F ^	ug/Kg	☼	66	48 - 137	45	30
4,4'-DDE	ND		97.3	62.9	F	ug/Kg	☼	65	53 - 128	194	30
4,4'-DDT	ND	^	97.3	13.0	F ^	ug/Kg	☼	13	43 - 144	102	30
Dieldrin	ND		97.3	121		ug/Kg	☼	124	56 - 131	3	30
Endosulfan I	ND		97.3	1640	F	ug/Kg	☼	1685	50 - 130	NC	30

Method: 8081A - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: 580-40823-3 MSD
Matrix: Solid
Analysis Batch: 147611

Client Sample ID: YRWWTP Biosolids
Prep Type: Total/NA
Prep Batch: 147508

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Endosulfan II	ND		97.3	118	F	ug/Kg	☼	121	44 - 142	87	30
Endosulfan sulfate	ND		97.3	83.1		ug/Kg	☼	85	47 - 129	30	30
Endrin	ND		97.3	102		ug/Kg	☼	105	49 - 147	1	30
Endrin aldehyde	ND		97.3	72.8	F	ug/Kg	☼	75	52 - 136	92	30
Heptachlor	ND	^	97.3	41.3	F ^	ug/Kg	☼	42	36 - 137	58	30
Heptachlor epoxide	ND		97.3	ND	F	ug/Kg	☼	0	57 - 130	NC	30
Methoxychlor	ND	^	97.3	53.1	F ^	ug/Kg	☼	55	51 - 149	58	30
Endrin ketone	ND	^	97.3	207	F ^	ug/Kg	☼	213	52 - 148	39	30
alpha-Chlordane	ND		97.3	ND	F	ug/Kg	☼	0	54 - 134	NC	30
gamma-Chlordane	ND		97.3	ND	F	ug/Kg	☼	0	52 - 131	NC	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Tetrachloro-m-xylene	*18*	*X*	*49 - 123*
DCB Decachlorobiphenyl	*71*		*40 - 158*

Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 580-147508/1-A
Matrix: Solid
Analysis Batch: 147602

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 147508

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.010		mg/Kg		10/18/13 08:35	10/20/13 11:53	1
PCB-1221	ND		0.011		mg/Kg		10/18/13 08:35	10/20/13 11:53	1
PCB-1232	ND		0.011		mg/Kg		10/18/13 08:35	10/20/13 11:53	1
PCB-1242	ND		0.010		mg/Kg		10/18/13 08:35	10/20/13 11:53	1
PCB-1248	ND		0.010		mg/Kg		10/18/13 08:35	10/20/13 11:53	1
PCB-1254	ND		0.010		mg/Kg		10/18/13 08:35	10/20/13 11:53	1
PCB-1260	ND		0.010		mg/Kg		10/18/13 08:35	10/20/13 11:53	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*85*		*45 - 135*	*10/18/13 08:35*	*10/20/13 11:53*	*1*
DCB Decachlorobiphenyl	*101*		*50 - 140*	*10/18/13 08:35*	*10/20/13 11:53*	*1*

Lab Sample ID: LCS 580-147508/4-A
Matrix: Solid
Analysis Batch: 147602

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 147508

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
PCB-1016	0.100	0.0964		mg/Kg		96	40 - 140
PCB-1260	0.100	0.110		mg/Kg		110	60 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Tetrachloro-m-xylene	*80*		*45 - 135*
DCB Decachlorobiphenyl	*96*		*50 - 140*

Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: LCSD 580-147508/5-A
Matrix: Solid
Analysis Batch: 147602

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 147508

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
PCB-1016	0.100	0.111		mg/Kg		111	40 - 140	14	20
PCB-1260	0.100	0.117		mg/Kg		117	60 - 130	6	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Tetrachloro-m-xylene	*89*		*45 - 135*
DCB Decachlorobiphenyl	*107*		*50 - 140*

Lab Sample ID: 580-40823-3 MS
Matrix: Solid
Analysis Batch: 147602

Client Sample ID: YRWWTP Biosolids
Prep Type: Total/NA
Prep Batch: 147508

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
PCB-1016	ND		0.495	0.425		mg/Kg	☼	86	40 - 140
PCB-1260	ND		0.495	0.449		mg/Kg	☼	91	60 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Tetrachloro-m-xylene	*78*		*45 - 135*
DCB Decachlorobiphenyl	*50*		*50 - 140*

Lab Sample ID: 580-40823-3 MSD
Matrix: Solid
Analysis Batch: 147602

Client Sample ID: YRWWTP Biosolids
Prep Type: Total/NA
Prep Batch: 147508

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
PCB-1016	ND		0.494	0.546	F	mg/Kg	☼	111	40 - 140	25	20
PCB-1260	ND		0.494	0.527		mg/Kg	☼	107	60 - 130	16	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Tetrachloro-m-xylene	*93*		*45 - 135*
DCB Decachlorobiphenyl	*57*		*50 - 140*

Method: 420.1 - Phenolics, Total Recoverable

Lab Sample ID: MB 280-196523/1-A
Matrix: Water
Analysis Batch: 196731

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 196523

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenols, Total	ND		0.0070		mg/L		10/17/13 16:57	10/18/13 16:49	1

Lab Sample ID: LCS 280-196523/2-A
Matrix: Water
Analysis Batch: 196731

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 196523

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Phenols, Total	0.0500	0.0460		mg/L		92	82 - 123

Method: 420.1 - Phenolics, Total Recoverable (Continued)

Lab Sample ID: LCSD 280-196523/3-A
Matrix: Water
Analysis Batch: 196731

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 196523

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Phenols, Total	0.0500	0.0444		mg/L		89	82 - 123	4	14

Lab Sample ID: 580-40823-1 MS
Matrix: Water
Analysis Batch: 196731

Client Sample ID: YRWWTP Influent
Prep Type: Total/NA
Prep Batch: 196523

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Phenols, Total	ND		0.0500	ND	F	mg/L		0	82 - 123

Lab Sample ID: 580-40823-1 MSD
Matrix: Water
Analysis Batch: 196731

Client Sample ID: YRWWTP Influent
Prep Type: Total/NA
Prep Batch: 196523

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Phenols, Total	ND		0.0500	0.0562		mg/L		112	82 - 123	NC	14

Method: 9012A - Cyanide, Total and/or Amenable

Lab Sample ID: MB 580-147622/1-A
Matrix: Solid
Analysis Batch: 147775

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 147622

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		1.0		mg/Kg		10/21/13 07:04	10/22/13 15:00	1

Lab Sample ID: LCS 580-147622/2-A
Matrix: Solid
Analysis Batch: 147775

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 147622

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	10.0	9.70		mg/Kg		97	80 - 120

Lab Sample ID: LCSD 580-147622/3-A
Matrix: Solid
Analysis Batch: 147775

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 147622

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cyanide, Total	10.0	9.88		mg/Kg		99	80 - 120	2	20

Method: 9066 - Phenolics, Total Recoverable

Lab Sample ID: MB 490-116452/1-A
Matrix: Solid
Analysis Batch: 116810

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 116452

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenols, Total	ND		2.5		mg/Kg		10/23/13 13:15	10/24/13 15:37	1

Method: 9066 - Phenolics, Total Recoverable (Continued)

Lab Sample ID: LCS 490-116452/2-A
Matrix: Solid
Analysis Batch: 116810

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 116452

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Phenols, Total	37.5	35.4		mg/Kg		94	80 - 120

Lab Sample ID: 580-40823-3 MS
Matrix: Solid
Analysis Batch: 116810

Client Sample ID: YRWWTP Biosolids
Prep Type: Total/NA
Prep Batch: 116452

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Phenols, Total	ND		193	158		mg/Kg	☼		

Lab Sample ID: 580-40823-3 MSD
Matrix: Solid
Analysis Batch: 116810

Client Sample ID: YRWWTP Biosolids
Prep Type: Total/NA
Prep Batch: 116452

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Phenols, Total	ND		193	153		mg/Kg	☼				

Lab Chronicle

Client: Cascade Analytical Inc
Project/Site: City of Yakima WWTP

TestAmerica Job ID: 580-40823-1

Client Sample ID: YRWWTP Influent

Lab Sample ID: 580-40823-1
Matrix: Water

Date Collected: 10/08/13 08:45
Date Received: 10/08/13 15:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624		1	115526	10/19/13 02:19	JJR	TAL NSH
Total/NA	Prep	CWA_Prep			147191	10/14/13 11:06	ALC	TAL SEA
Total/NA	Analysis	625		5	147722	10/22/13 18:44	ERB	TAL SEA
Total/NA	Prep	CWA_Prep			147264	10/15/13 08:49	ALC	TAL SEA
Total/NA	Analysis	608		1	147601	10/20/13 11:12	SGH	TAL SEA
Total/NA	Prep	CWA_Prep			147264	10/15/13 08:49	ALC	TAL SEA
Total/NA	Analysis	608		1	147612	10/20/13 19:33	SGH	TAL SEA
Total/NA	Prep	Distill/Phenol			196523	10/17/13 16:57	AFB	TAL DEN
Total/NA	Analysis	420.1		1	196731	10/18/13 16:49	AFB	TAL DEN

Client Sample ID: YRWWTP Effluent

Lab Sample ID: 580-40823-2
Matrix: Water

Date Collected: 10/08/13 08:15
Date Received: 10/08/13 15:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624		1	115526	10/19/13 01:52	JJR	TAL NSH
Total/NA	Analysis	625		1	147722	10/22/13 19:04	ERB	TAL SEA
Total/NA	Prep	CWA_Prep			147191	10/14/13 11:06	ALC	TAL SEA
Total/NA	Analysis	625		10	147861	10/23/13 20:22	ERB	TAL SEA
Total/NA	Prep	CWA_Prep			147264	10/15/13 08:49	ALC	TAL SEA
Total/NA	Analysis	608		1	147601	10/20/13 11:26	SGH	TAL SEA
Total/NA	Prep	CWA_Prep			147264	10/15/13 08:49	ALC	TAL SEA
Total/NA	Analysis	608		1	147612	10/20/13 19:49	SGH	TAL SEA
Total/NA	Prep	Distill/Phenol			196523	10/17/13 16:57	AFB	TAL DEN
Total/NA	Analysis	420.1		1	196731	10/18/13 16:49	AFB	TAL DEN

Client Sample ID: YRWWTP Biosolids

Lab Sample ID: 580-40823-3
Matrix: Solid
Percent Solids: 19.4

Date Collected: 10/08/13 11:00
Date Received: 10/08/13 15:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			147558	10/18/13 14:33	WW1	TAL SEA
Total/NA	Analysis	8270C		5	147608	10/20/13 18:37	CGM	TAL SEA
Total/NA	Prep	3550B			147508	10/18/13 08:35	WW1	TAL SEA
Total/NA	Analysis	8082		1	147602	10/20/13 12:35	SGH	TAL SEA
Total/NA	Prep	3550B			147508	10/18/13 08:35	WW1	TAL SEA
Total/NA	Analysis	8081A		1	147611	10/20/13 18:15	SGH	TAL SEA
Total/NA	Prep	Distill/Phenol			116452	10/23/13 13:15	WEC	TAL NSH
Total/NA	Analysis	9066		1	116810	10/24/13 15:39	TEM	TAL NSH
Total/NA	Analysis	D 2216		1	147204	10/14/13 13:32	JJP	TAL SEA
Total/NA	Prep	9012A			147622	10/21/13 07:04	SPP	TAL SEA
Total/NA	Analysis	9012A		1	147775	10/22/13 15:00	SPP	TAL SEA

Lab Chronicle

Client: Cascade Analytical Inc
Project/Site: City of Yakima WWTP

TestAmerica Job ID: 580-40823-1

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

TAL SEA = TestAmerica Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Certification Summary

Client: Cascade Analytical Inc
Project/Site: City of Yakima WWTP

TestAmerica Job ID: 580-40823-1

Laboratory: TestAmerica Seattle

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska (UST)	State Program	10	UST-022	03-04-14
California	NELAP	9	01115CA	01-31-14
L-A-B	DoD ELAP		L2236	01-19-16
L-A-B	ISO/IEC 17025		L2236	01-19-16
Montana (UST)	State Program	8	N/A	04-30-20
Oregon	NELAP	10	WA100007	11-06-13
USDA	Federal		P330-11-00222	05-20-14
Washington	State Program	10	C553	02-17-14

Laboratory: TestAmerica Denver

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		2907.01	10-31-13
A2LA	ISO/IEC 17025		2907.01	10-31-13
Alabama	State Program	4	40730	09-30-12 *
Alaska (UST)	State Program	10	UST-30	04-05-14
Arizona	State Program	9	AZ0713	12-19-13
Arkansas DEQ	State Program	6	88-0687	06-01-14
California	ELAP	9	2513	08-31-14
Colorado	State Program	8	N/A	09-30-14
Connecticut	State Program	1	PH-0686	09-30-14
Florida	NELAP	4	E87667	06-30-14
Illinois	NELAP	5	200017	04-30-14
Iowa	State Program	7	370	12-01-14
Kansas	NELAP	7	E-10166	04-30-14
Louisiana	NELAP	6	30785	06-30-14 *
Maine	State Program	1	CO0002	03-03-15
Maryland	State Program	3	268	03-31-14
Minnesota	NELAP	5	8-999-405	12-31-13
Nevada	State Program	9	CO0026	09-01-14
New Hampshire	NELAP	1	205310	04-28-14
New Jersey	NELAP	2	CO004	06-30-14
New Mexico	State Program	6	CO00026	06-30-14 *
New York	NELAP	2	11964	04-01-14
North Carolina DENR	State Program	4	358	12-31-13
North Dakota	State Program	8	R-034	06-30-14 *
Oklahoma	State Program	6	8614	08-31-14
Oregon	NELAP	10	CO200001	01-16-14
Pennsylvania	NELAP	3	68-00664	07-30-14
South Carolina	State Program	4	72002	06-30-14 *
Texas	NELAP	6	T104704183-08-TX	10-01-14
USDA	Federal		P330-13-00202	07-02-16
Utah	NELAP	8	CO000262012-4	07-31-14
Virginia	NELAP	3	460232	06-14-14
Washington	State Program	10	C583	08-03-14
West Virginia DEP	State Program	3	354	11-30-13
Wisconsin	State Program	5	999615430	08-31-14
Wyoming (UST)	A2LA	8		10-31-13

Laboratory: TestAmerica Nashville

* Expired certification is currently pending renewal and is considered valid.

Certification Summary

Client: Cascade Analytical Inc
Project/Site: City of Yakima WWTP

TestAmerica Job ID: 580-40823-1

Laboratory: TestAmerica Nashville (Continued)

All certifications held by this laboratory are listed Not all certifications are applicable to this report

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	ISO/IEC 17025		0453.07	12-31-13
Alaska (UST)	State Program	10	UST-087	07-24-14
Arizona	State Program	9	AZ0473	05-05-14
Arizona	State Program	9	AZ0473	05-05-14 *
Arkansas DEQ	State Program	6	88-0737	04-25-14
California	NELAP	9	1168CA	10-31-13
Canadian Assoc Lab Accred (CALA)	Canada		3744	03-08-14
Connecticut	State Program	1	PH-0220	12-31-13
Florida	NELAP	4	E87358	06-30-14
Illinois	NELAP	5	200010	12-09-13
Iowa	State Program	7	131	05-01-14
Kansas	NELAP	7	E-10229	10-31-13
Kentucky (UST)	State Program	4	19	06-30-14
Louisiana	NELAP	6	30613	06-30-14
Maryland	State Program	3	316	03-31-14
Massachusetts	State Program	1	M-TN032	06-30-14
Minnesota	NELAP	5	047-999-345	12-31-13
Mississippi	State Program	4	N/A	06-30-14
Montana (UST)	State Program	8	NA	01-01-20
Nevada	State Program	9	TN00032	07-31-14
New Hampshire	NELAP	1	2963	10-10-14
New Jersey	NELAP	2	TN965	06-30-14
New York	NELAP	2	11342	04-01-14
North Carolina DENR	State Program	4	387	12-31-13
North Dakota	State Program	8	R-146	06-30-14
Ohio VAP	State Program	5	CL0033	10-16-15
Oklahoma	State Program	6	9412	08-31-14
Oregon	NELAP	10	TN200001	04-29-14
Pennsylvania	NELAP	3	68-00585	06-30-14
Rhode Island	State Program	1	LAO00268	12-30-13
South Carolina	State Program	4	84009 (001)	02-28-14
Tennessee	State Program	4	2008	02-23-14
Texas	NELAP	6	T104704077-09-TX	08-31-14
USDA	Federal		S-48469	11-02-13
Utah	NELAP	8	TN00032	07-31-14
Virginia	NELAP	3	460152	06-14-14
Washington	State Program	10	C789	07-19-14
West Virginia DEP	State Program	3	219	02-28-14
Wisconsin	State Program	5	998020430	08-31-14
Wyoming (UST)	A2LA	8	453.07	12-31-13

* Expired certification is currently pending renewal and is considered valid.

Sample Summary

Client: Cascade Analytical Inc
Project/Site: City of Yakima WWTP

TestAmerica Job ID: 580-40823-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-40823-1	YRWWTP Influent	Water	10/08/13 08:45	10/08/13 15:00
580-40823-2	YRWWTP Effluent	Water	10/08/13 08:15	10/08/13 15:00
580-40823-3	YRWWTP Biosolids	Solid	10/08/13 11:00	10/08/13 15:00

CASCADE ANALYTICAL, INC.
1-800-545-4206

AGRICULTURE &
ENVIRONMENTAL ANALYSIS
(509) 662-1888
Fax: (509) 662-8183
3019 G.S. Center Road
Wenatchee, WA 98801
(509) 452-7707
Fax: (509) 452-7773
1008 W. Ahtanum Rd.
Union Gap, Wa 98903

Sub-Contract ORDER FORM

P.O. NO: 387566

PROJECT NAME	CONTRACT LAB
City of Yakima WWTP	TAL/S
	ADDRESS
	CITY, STATE, ZIP
	TELEPHONE

RELINQUISHED BY: Signature [1]	DATE	RELINQUISHED BY: Signature [2]	DATE	RELINQUISHED BY: Signature [3]	DATE
(Printed)	TIME	(Printed)	TIME	(Printed)	TIME
RECEIVED BY: Signature	DATE	RECEIVED BY: Signature	DATE	RECEIVED BY: Signature	DATE
(Printed)	TIME	(Printed)	TIME	(Printed)	TIME

1	Sample I.D. 13-C024743	Sample Date 10/8/13	Sample Time 0845
	ANALYSIS REQUESTED See attached		
	COMMENT		
2	Sample I.D. 13-C024744	Sample Date 10/8/13	Sample Time 0815
	ANALYSIS REQUESTED See attached		
	COMMENT		
3	Sample I.D. 13-C024745	Sample Date 10/8/13	Sample Time 1100
	ANALYSIS REQUESTED See attached		
	COMMENT		
4	Sample I.D.	Sample Date	Sample Time
	ANALYSIS REQUESTED		
	COMMENT		

580-40823 Chain of Custody

SPECIAL INSTRUCTIONS:

En Core plugs Frozen on reciept. A.S. 10/8/13

~~Cooler/TB~~ Dig/IR cor 5.3 °C unc 5.1 °C
Cooler Dsc Lg Green @ Lab 1500
Wet/Packs Packing Bubble w/cs

Cooler/TB Dig/IR cor 5.6 °C unc 5.4 °C
Cooler Dsc Sm Blue/White @ Lab 1500
Wet/Packs Packing Bubble w/cs

WHITE - Submit with sample, YELLOW - Client Copy, PINK - Laboratory Copy

Seattle
5755 8th St E

Tacoma, WA 98424
Phone:253-922-2310

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Andy Schut	Site Contact:	Date: 10/8/13	COC No:
Cascade Analytical	Tel/Fax:	Lab Contact:	Carrier: UPS	1 of 1 COCs
1008 W Ahtanum Rd	Analysis Turnaround Time			Job No.
Union Gap, WA 98903	Calendar (C) or Work Days (W)			
(509)452-7707	TAT if different from Below			SDG No.
(509)452-7773	☐ 2 weeks			
Project Name: City of Yakima WWTP	☐ 1 week			
Site:	☐ 2 days			
PO# 387566	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	EPA 624 w/ Trip Blank	EPA 625	EPA 608 PCB	EPA 608 Pest.	EPA 420.1 Total Phenols	SW846-8260 VOC	SW846-8270	8081	8082	9065	9012	Sample Specific Notes:
YR WWTP Influent	10/8/13	0845		W	10		X	X	X	X	X							13-C024743
YR WWTP Effluent	10/8/13	0815		W	10		X	X	X	X	X							13-C024744
YR WWTP Biosolids	10/8/13	1100		S	7							X	X	X	X	X	X	13-C024745
TRIP BLANKS - RUSH 10-11-13					2													

Preservation Used: 1= Ice, 2= HCl; 3= ~~H2SO4~~; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant Poison B ☐ Unknown ☒

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Special Instructions/QC Requirements & Comments:

En Core plugs frozen on receipt. AS 10/8/13

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

Login Sample Receipt Checklist

Client: Cascade Analytical Inc

Job Number: 580-40823-1

Login Number: 40823
List Number: 1
Creator: McDaniel, Ronald T

List Source: TestAmerica Seattle

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	False	Improper containers received.
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

See narrative on page 3 paragraph 2 of report.
AS. 11/1/13

Login Sample Receipt Checklist

Client: Cascade Analytical Inc

Job Number: 580-40823-1

Login Number: 40823
List Number: 1
Creator: Knauf, James R

List Source: TestAmerica Denver
List Creation: 10/16/13 04:55 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	FIELD LEFT BLANK
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Cascade Analytical Inc

Job Number: 580-40823-1

Login Number: 40823
List Number: 1
Creator: Ford, Easton

List Source: TestAmerica Nashville
List Creation: 10/16/13 02:06 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Cascade Analytical Inc

Job Number: 580-40823-1

Login Number: 40823
List Number: 2
Creator: Ford, Easton

List Source: TestAmerica Nashville
List Creation: 10/16/13 02:09 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

CASCADE ANALYTICAL, INC.

AGRICULTURAL&
ENVIRONMENTAL ANALYSIS

3019 G.S. Center Rd.
Wenatchee, WA 98801

(509) 662-1888
Fax: (509) 662-8183
1-800-545-4206

SPECIAL SERVICE ORDER FORM

SAMPLE #	1	2	3	4
SEND RESULTS TO 1)Client 2)Billing 3)Both				
SAMPLE REPRESENTS 1)Food 2)Water 3)Soil 4)Plant Tissue 5)Other				
SAMPLE BY 1)Client 2)Field Rep. 3)Quality Control 4)Cascade 5)Other				
SAMPLER'S NAME				

CLIENT NAME/ADDRESS
City of Yakima WWTP
2220 East Viola
Yakima WA 98901
PHONE NO. 509 575 6133

BILLING NAME/ADDRESS
Same
Please invoice P.O. #
545
PHONE NO.

EMAIL	

EMAIL	

FORM MUST BE COMPLETED BEFORE ANALYSIS WILL BE PERFORMED.

RELINQUISHED BY: (Signature) 1	DATE	RELINQUISHED BY: (Signature) 2	DATE	RELINQUISHED BY: (Signature) 3	DATE
Jennifer Key	10/8/13				
(Printed) Jennifer Key	TIME 1:25	(Printed)	TIME	(Printed)	TIME
RECEIVED BY: (Signature) DSchmidt	DATE 10/8/13	RECEIVED BY: (Signature) 387566	DATE	RECEIVED BY: (Signature)	DATE
(Printed) DSchmidt	TIME 13:25	(Printed)	TIME	(Printed)	TIME

1	SAMPLE I.D: YRWWTP Influent	Sample Date: 10/8/13	Sample Time: 0845
	ANALYSIS REQUESTED: EPA 624 + Trip Blank, 625, 608 O.C. Pesticides, 608 PCBs, 420.1		
	COMMENT: 13-CO24743		
2	SAMPLE I.D.: YRWWTP Effluent	Sample Date: 10/8/13	Sample Time: 0815
	ANALYSIS REQUESTED: EPA 624, + Trip Blank, 625, 608 O.C. Pesticides, 608 PCBs, 420.1		
	COMMENT: 13-CO24744		
3	SAMPLE I.D.: YRWWTP Biosolids	Sample Date: 10/8/13	Sample Time: 1100AM
	ANALYSIS REQUESTED: SW846-8260 (Encor), 8270, 8081, 8082, 9065, 9012		
	COMMENT: 13-CO24745		
4	SAMPLE I.D.	Sample Date	Sample Time
	ANALYSIS REQUESTED		
	COMMENT		

Sample container received by client was sealed Yes ____ No ____
Sample container received by laboratory was sealed Yes ____ No ____

Disclaimer:
Cascade Analytical, Inc., makes no warranty of any kind, expressed or implied, and customer assumes all risk and liability from use of Cascade Analytical test results Cascade neither assumes not authorizes any person to assume for Cascade any other liability in connection with the testing done by Cascade Analytical, Inc., and there are not other oral agreements or warranties collateral to or affecting this agreement.

Cascade Analytical, Inc.'s liability to customer as a result of customers use of Cascade's tests results shall be limited to a sum equal to the fees paid by customer to Cascade Analytical, Inc. for the testing work

Customer Signature Jennifer Key Date 10/8/13

CASCADE ANALYTICAL, INC

Sample Receipt Form

Date Received: 10/8/13 Time Received: 13:25 Initials: DS

Client Name: COYWWTP Project Name: _____

Temperature of cooler upon receipt: 2 °C Thermometer ID: ORI

Custody seals: Intact Broken (None) N/A

Chain of Custody Completed:

Client name, address, and phone number;	(Yes)	No
Date and time of sampling;	(Yes)	No
Test requests clear;	(Yes)	No
Completed in ink;	(Yes)	No
Signed by client;	(Yes)	No

All samples received:		(Yes)	No
All samples intact:		(Yes)	No
Sample ID's match COC form:		(Yes)	No
Appropriate containers used:		(Yes)	No
Sufficient amount of sample for analysis:		(Yes)	No
Correct preservative verified:	N/A	(Yes)	No
Air bubbles in VOC, TTHM, or HAA5 samples:	N/A	Yes	(No)
Sample(s) exceed hold time:		(Yes)	No

Type of coolant: Ice (Blue Ice) None Other Comment: _____

Shipping Method: FedEx UPS USPS Brett & Sons (Hand Delivered) CAI Sampled

Shipping Container: (CAI Cooler) CAI Cooler Box Client's Cooler None Other _____

Samples accepted for analysis: Yes No

Reason for Rejection: _____

Name of Person Contacted: _____ Date Contacted: _____

Comments: Trip blanks & Sample vials for VOC missing dates and or times.
As 10/8

CASCADE ANALYTICAL, INC.
1-800-545-4206

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3019 G. S. Center Road
Wenatchee, WA 98801

(509) 452-7707
Fax: (509) 452-7773
1008 W. Ahtanum Rd.
Union Gap, WA 98903

Batch: 388068
Client: CITY OF YAKIMA
Account: 148
Sampler: Jennifer Key
PO Number: 545

--- Analytical Services Report ---

Report Date: 11/ 5/13

CITY OF YAKIMA
WASTEWATER DIVISION
2220 E. VIOLA
YAKIMA, WA 98901

Laboratory Number: 13-C025802
Sample Identification: YRWWTP Biosolids

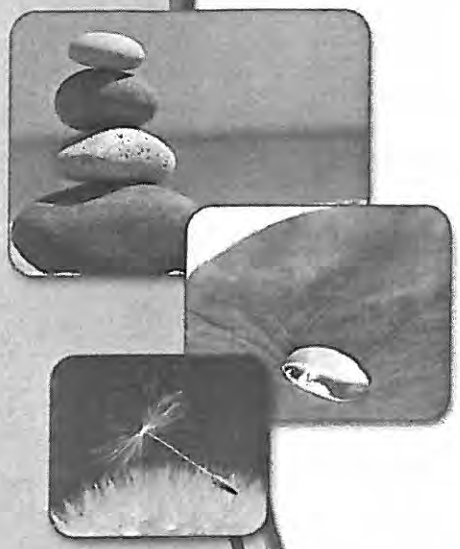
Date Received: 10/22/13
Date Sampled: 10/22/13

Test Requested	Results	Units	RL	Method	Date Analyzed	Flags
Other Analysis	Analyzed by TAL/S				10/29/13	

Approved By Name: Andy Schut
Function: Lab Manager/Yakima

Signature:

Cascade Analytical uses procedures established by EPA, AOAC, APHA, ASTM, and FDA/BAM. Cascade Analytical makes no warranty of any kind the client assumes all risk and liability from the use of these results. Cascade Analytical, Inc.'s liability to the client as a result of use of Cascade's test results shall be limited to a sum equal to the fees paid by the client to Cascade Analytical, Inc. for analysis. PLEASE REVIEW YOUR DATA IN A TIMELY MANNER. DATA GAPS OR ERRORS AFTER THREE MONTHS WILL NOT BE OUR RESPONSIBILITY. THOUGH WE DO KEEP ALL ANALYTICAL DATA FOR SEVERAL YEARS, SAMPLES ARE DISPOSED OF AFTER SIX WEEKS.



TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Seattle
5755 8th Street East
Tacoma, WA 98424
Tel: (253)922-2310

TestAmerica Job ID: 580-40987-1
Client Project/Site: City of Yakima WWTP

For:
Cascade Analytical Inc
3019 GS Center Road
Wenatchee, Washington 98801

Attn: Judy Brown

Pamela R. Johnson

Authorized for release by:
11/5/2013 11:24:32 AM

Pam Johnson, Project Manager I
(253)922-2310 x112
pamr.johnson@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Case Narrative

Client: Cascade Analytical Inc
Project/Site: City of Yakima WWTP

TestAmerica Job ID: 580-40987-1

Job ID: 580-40987-1

Laboratory: TestAmerica Seattle

Narrative

Receipt
The sample was received on 10/23/2013 9:25 AM; the sample arrived in good condition, properly preserved and, where required, on ice.

Except:

Temperature not taken, however samples appeared frozen, were packed in several solid gel packs and were within minutes taken to the Volatiles freezer.

GC/MS VOA - Method 8260B
The following sample 13-C025802 YRWWTP Biosolids (580-40987-1) was diluted due to the nature of the sample matrix. Elevated reporting limits (RLs) are provided.

Surrogate recovery for the following sample 13-C025802 YRWWTP Biosolids (580-40987-1) was outside control limits. Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed. The data have been qualified "X" and reported.

The %RPD of the laboratory control sample (LCS) and laboratory control standard duplicate (LCSD) for preparation batch 148169 recovered outside control limits for Cis-1,3-Dichloropropane,Trans-1,3-Dichloropropane and Vinyl Chloride. Individual recoveries within limits. The data have been qualified "*" and reported.

The following sample 13-C025802 YRWWTP Biosolids (580-40987-1) was prepared within holding time. Sample was received as encore placed in the freezer on 10/25/13 at 14:30. No HTV occurred therefore "H" flags have been removed by the analyst.

No other analytical or quality issues were noted.

General Chemistry
No analytical or quality issues were noted.

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*	RPD of the LCS and LCSD exceeds the control limits
X	Surrogate is outside control limits

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client Sample ID: 13-C025802 YRWWTP Biosolids
Date Collected: 10/22/13 09:40
Date Received: 10/23/13 09:25

Lab Sample ID: 580-40987-1
Matrix: Solid
Percent Solids: 18.5

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		6.1		mg/Kg	☼	10/29/13 09:07	10/29/13 15:31	1
1,1,1-Trichloroethane	ND		6.1		mg/Kg	☼	10/29/13 09:07	10/29/13 15:31	1
1,1,2,2-Tetrachloroethane	ND		1.5		mg/Kg	☼	10/29/13 09:07	10/29/13 15:31	1
1,1,2-Trichloroethane	ND		1.8		mg/Kg	☼	10/29/13 09:07	10/29/13 15:31	1
1,1-Dichloroethane	ND		6.1		mg/Kg	☼	10/29/13 09:07	10/29/13 15:31	1
1,1-Dichloroethene	ND		3.0		mg/Kg	☼	10/29/13 09:07	10/29/13 15:31	1
1,1-Dichloropropene	ND		6.1		mg/Kg	☼	10/29/13 09:07	10/29/13 15:31	1
1,2,3-Trichlorobenzene	ND		6.1		mg/Kg	☼	10/29/13 09:07	10/29/13 15:31	1
1,2,3-Trichloropropane	ND		6.1		mg/Kg	☼	10/29/13 09:07	10/29/13 15:31	1
1,2,4-Trichlorobenzene	ND		6.1		mg/Kg	☼	10/29/13 09:07	10/29/13 15:31	1
1,2,4-Trimethylbenzene	ND		6.1		mg/Kg	☼	10/29/13 09:07	10/29/13 15:31	1
1,2-Dibromo-3-Chloropropane	ND		30		mg/Kg	☼	10/29/13 09:07	10/29/13 15:31	1
1,2-Dichlorobenzene	ND		6.1		mg/Kg	☼	10/29/13 09:07	10/29/13 15:31	1
1,2-Dichloroethane	ND		2.4		mg/Kg	☼	10/29/13 09:07	10/29/13 15:31	1
1,2-Dichloropropane	ND		1.8		mg/Kg	☼	10/29/13 09:07	10/29/13 15:31	1
1,3,5-Trimethylbenzene	ND		6.1		mg/Kg	☼	10/29/13 09:07	10/29/13 15:31	1
1,3-Dichlorobenzene	ND		6.1		mg/Kg	☼	10/29/13 09:07	10/29/13 15:31	1
1,3-Dichloropropane	ND		6.1		mg/Kg	☼	10/29/13 09:07	10/29/13 15:31	1
1,4-Dichlorobenzene	ND		6.1		mg/Kg	☼	10/29/13 09:07	10/29/13 15:31	1
2,2-Dichloropropane	ND		6.1		mg/Kg	☼	10/29/13 09:07	10/29/13 15:31	1
2-Chlorotoluene	ND		6.1		mg/Kg	☼	10/29/13 09:07	10/29/13 15:31	1
4-Chlorotoluene	ND		6.1		mg/Kg	☼	10/29/13 09:07	10/29/13 15:31	1
4-Isopropyltoluene	ND		6.1		mg/Kg	☼	10/29/13 09:07	10/29/13 15:31	1
Benzene	ND		2.4		mg/Kg	☼	10/29/13 09:07	10/29/13 15:31	1
Bromobenzene	ND		6.1		mg/Kg	☼	10/29/13 09:07	10/29/13 15:31	1
Bromoform	ND		6.1		mg/Kg	☼	10/29/13 09:07	10/29/13 15:31	1
Bromomethane	ND		21		mg/Kg	☼	10/29/13 09:07	10/29/13 15:31	1
Carbon tetrachloride	ND		3.0		mg/Kg	☼	10/29/13 09:07	10/29/13 15:31	1
Chlorobenzene	ND		6.1		mg/Kg	☼	10/29/13 09:07	10/29/13 15:31	1
Chlorobromomethane	ND		6.1		mg/Kg	☼	10/29/13 09:07	10/29/13 15:31	1
Chlorodibromomethane	ND		3.0		mg/Kg	☼	10/29/13 09:07	10/29/13 15:31	1
Chloroethane	ND		61		mg/Kg	☼	10/29/13 09:07	10/29/13 15:31	1
Chloroform	ND		6.1		mg/Kg	☼	10/29/13 09:07	10/29/13 15:31	1
Chloromethane	ND		61		mg/Kg	☼	10/29/13 09:07	10/29/13 15:31	1
cis-1,2-Dichloroethene	ND		6.1		mg/Kg	☼	10/29/13 09:07	10/29/13 15:31	1
cis-1,3-Dichloropropene	ND		2.4		mg/Kg	☼	10/29/13 09:07	10/29/13 15:31	1
Dibromomethane	ND		6.1		mg/Kg	☼	10/29/13 09:07	10/29/13 15:31	1
Dichlorobromomethane	ND		6.1		mg/Kg	☼	10/29/13 09:07	10/29/13 15:31	1
Dichlorodifluoromethane	ND		6.1		mg/Kg	☼	10/29/13 09:07	10/29/13 15:31	1
Ethylbenzene	ND		6.1		mg/Kg	☼	10/29/13 09:07	10/29/13 15:31	1
Ethylene Dibromide	ND		6.1		mg/Kg	☼	10/29/13 09:07	10/29/13 15:31	1
Hexachlorobutadiene	ND		6.1		mg/Kg	☼	10/29/13 09:07	10/29/13 15:31	1
Isopropylbenzene	ND		6.1		mg/Kg	☼	10/29/13 09:07	10/29/13 15:31	1
Methylene Chloride	ND		2.4		mg/Kg	☼	10/29/13 09:07	10/29/13 15:31	1
m-Xylene & p-Xylene	ND		6.1		mg/Kg	☼	10/29/13 09:07	10/29/13 15:31	1
Naphthalene	ND		6.1		mg/Kg	☼	10/29/13 09:07	10/29/13 15:31	1
n-Butylbenzene	ND		6.1		mg/Kg	☼	10/29/13 09:07	10/29/13 15:31	1
N-Propylbenzene	ND		6.1		mg/Kg	☼	10/29/13 09:07	10/29/13 15:31	1
o-Xylene	ND		6.1		mg/Kg	☼	10/29/13 09:07	10/29/13 15:31	1

Client Sample ID: 13-C025802 YRWWTP Biosolids
Date Collected: 10/22/13 09:40
Date Received: 10/23/13 09:25

Lab Sample ID: 580-40987-1
Matrix: Solid
Percent Solids: 18.5

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
sec-Butylbenzene	ND		6.1		mg/Kg	☼	10/29/13 09:07	10/29/13 15:31	1
Styrene	ND		6.1		mg/Kg	☼	10/29/13 09:07	10/29/13 15:31	1
tert-Butylbenzene	ND		6.1		mg/Kg	☼	10/29/13 09:07	10/29/13 15:31	1
Tetrachloroethene	ND		3.0		mg/Kg	☼	10/29/13 09:07	10/29/13 15:31	1
Toluene	ND		6.1		mg/Kg	☼	10/29/13 09:07	10/29/13 15:31	1
trans-1,2-Dichloroethene	ND		6.1		mg/Kg	☼	10/29/13 09:07	10/29/13 15:31	1
trans-1,3-Dichloropropene	ND	*	2.4		mg/Kg	☼	10/29/13 09:07	10/29/13 15:31	1
Trichloroethene	ND		2.4		mg/Kg	☼	10/29/13 09:07	10/29/13 15:31	1
Trichlorofluoromethane	ND		6.1		mg/Kg	☼	10/29/13 09:07	10/29/13 15:31	1
Vinyl chloride	ND	*	1.2		mg/Kg	☼	10/29/13 09:07	10/29/13 15:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*117*		*71 - 136*	*10/29/13 09:07*	*10/29/13 15:31*	*1*
4-Bromofluorobenzene (Surr)	*100*		*70 - 120*	*10/29/13 09:07*	*10/29/13 15:31*	*1*
Dibromofluoromethane (Surr)	*103*		*75 - 125*	*10/29/13 09:07*	*10/29/13 15:31*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*	*10/29/13 09:07*	*10/29/13 15:31*	*1*
Trifluorotoluene (Surr)	*45*	*X*	*65 - 140*	*10/29/13 09:07*	*10/29/13 15:31*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	18		0.10		%			10/30/13 13:46	1
Percent Moisture	82		0.10		%			10/30/13 13:46	1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 580-148184/1-A
Matrix: Solid
Analysis Batch: 148169

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 148184

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.040		mg/Kg		10/29/13 09:07	10/29/13 12:40	1
1,1,1-Trichloroethane	ND		0.040		mg/Kg		10/29/13 09:07	10/29/13 12:40	1
1,1,2,2-Tetrachloroethane	ND		0.010		mg/Kg		10/29/13 09:07	10/29/13 12:40	1
1,1,2-Trichloroethane	ND		0.012		mg/Kg		10/29/13 09:07	10/29/13 12:40	1
1,1-Dichloroethane	ND		0.040		mg/Kg		10/29/13 09:07	10/29/13 12:40	1
1,1-Dichloroethene	ND		0.020		mg/Kg		10/29/13 09:07	10/29/13 12:40	1
1,1-Dichloropropene	ND		0.040		mg/Kg		10/29/13 09:07	10/29/13 12:40	1
1,2,3-Trichlorobenzene	ND		0.040		mg/Kg		10/29/13 09:07	10/29/13 12:40	1
1,2,3-Trichloropropane	ND		0.040		mg/Kg		10/29/13 09:07	10/29/13 12:40	1
1,2,4-Trichlorobenzene	ND		0.040		mg/Kg		10/29/13 09:07	10/29/13 12:40	1
1,2,4-Trimethylbenzene	ND		0.040		mg/Kg		10/29/13 09:07	10/29/13 12:40	1
1,2-Dibromo-3-Chloropropane	ND		0.20		mg/Kg		10/29/13 09:07	10/29/13 12:40	1
1,2-Dichlorobenzene	ND		0.040		mg/Kg		10/29/13 09:07	10/29/13 12:40	1
1,2-Dichloroethane	ND		0.016		mg/Kg		10/29/13 09:07	10/29/13 12:40	1
1,2-Dichloropropane	ND		0.012		mg/Kg		10/29/13 09:07	10/29/13 12:40	1
1,3,5-Trimethylbenzene	ND		0.040		mg/Kg		10/29/13 09:07	10/29/13 12:40	1
1,3-Dichlorobenzene	ND		0.040		mg/Kg		10/29/13 09:07	10/29/13 12:40	1
1,3-Dichloropropane	ND		0.040		mg/Kg		10/29/13 09:07	10/29/13 12:40	1
1,4-Dichlorobenzene	ND		0.040		mg/Kg		10/29/13 09:07	10/29/13 12:40	1
2,2-Dichloropropane	ND		0.040		mg/Kg		10/29/13 09:07	10/29/13 12:40	1
2-Chlorotoluene	ND		0.040		mg/Kg		10/29/13 09:07	10/29/13 12:40	1
4-Chlorotoluene	ND		0.040		mg/Kg		10/29/13 09:07	10/29/13 12:40	1
4-Isopropyltoluene	ND		0.040		mg/Kg		10/29/13 09:07	10/29/13 12:40	1
Benzene	ND		0.016		mg/Kg		10/29/13 09:07	10/29/13 12:40	1
Bromobenzene	ND		0.040		mg/Kg		10/29/13 09:07	10/29/13 12:40	1
Bromoform	ND		0.040		mg/Kg		10/29/13 09:07	10/29/13 12:40	1
Bromomethane	ND		0.14		mg/Kg		10/29/13 09:07	10/29/13 12:40	1
Carbon tetrachloride	ND		0.020		mg/Kg		10/29/13 09:07	10/29/13 12:40	1
Chlorobenzene	ND		0.040		mg/Kg		10/29/13 09:07	10/29/13 12:40	1
Chlorobromomethane	ND		0.040		mg/Kg		10/29/13 09:07	10/29/13 12:40	1
Chlorodibromomethane	ND		0.020		mg/Kg		10/29/13 09:07	10/29/13 12:40	1
Chloroethane	ND		0.40		mg/Kg		10/29/13 09:07	10/29/13 12:40	1
Chloroform	ND		0.040		mg/Kg		10/29/13 09:07	10/29/13 12:40	1
Chloromethane	ND		0.40		mg/Kg		10/29/13 09:07	10/29/13 12:40	1
cis-1,2-Dichloroethene	ND		0.040		mg/Kg		10/29/13 09:07	10/29/13 12:40	1
cis-1,3-Dichloropropene	ND		0.016		mg/Kg		10/29/13 09:07	10/29/13 12:40	1
Dibromomethane	ND		0.040		mg/Kg		10/29/13 09:07	10/29/13 12:40	1
Dichlorobromomethane	ND		0.040		mg/Kg		10/29/13 09:07	10/29/13 12:40	1
Dichlorodifluoromethane	ND		0.040		mg/Kg		10/29/13 09:07	10/29/13 12:40	1
Ethylbenzene	ND		0.040		mg/Kg		10/29/13 09:07	10/29/13 12:40	1
Ethylene Dibromide	ND		0.040		mg/Kg		10/29/13 09:07	10/29/13 12:40	1
Hexachlorobutadiene	ND		0.040		mg/Kg		10/29/13 09:07	10/29/13 12:40	1
Isopropylbenzene	ND		0.040		mg/Kg		10/29/13 09:07	10/29/13 12:40	1
Methylene Chloride	ND		0.016		mg/Kg		10/29/13 09:07	10/29/13 12:40	1
m-Xylene & p-Xylene	ND		0.040		mg/Kg		10/29/13 09:07	10/29/13 12:40	1
Naphthalene	ND		0.040		mg/Kg		10/29/13 09:07	10/29/13 12:40	1
n-Butylbenzene	ND		0.040		mg/Kg		10/29/13 09:07	10/29/13 12:40	1
N-Propylbenzene	ND		0.040		mg/Kg		10/29/13 09:07	10/29/13 12:40	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 580-148184/1-A
Matrix: Solid
Analysis Batch: 148169

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 148184

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	ND		0.040		mg/Kg		10/29/13 09:07	10/29/13 12:40	1
sec-Butylbenzene	ND		0.040		mg/Kg		10/29/13 09:07	10/29/13 12:40	1
Styrene	ND		0.040		mg/Kg		10/29/13 09:07	10/29/13 12:40	1
tert-Butylbenzene	ND		0.040		mg/Kg		10/29/13 09:07	10/29/13 12:40	1
Tetrachloroethene	ND		0.020		mg/Kg		10/29/13 09:07	10/29/13 12:40	1
Toluene	ND		0.040		mg/Kg		10/29/13 09:07	10/29/13 12:40	1
trans-1,2-Dichloroethene	ND		0.040		mg/Kg		10/29/13 09:07	10/29/13 12:40	1
trans-1,3-Dichloropropene	ND		0.016		mg/Kg		10/29/13 09:07	10/29/13 12:40	1
Trichloroethene	ND		0.016		mg/Kg		10/29/13 09:07	10/29/13 12:40	1
Trichlorofluoromethane	ND		0.040		mg/Kg		10/29/13 09:07	10/29/13 12:40	1
Vinyl chloride	ND		0.0080		mg/Kg		10/29/13 09:07	10/29/13 12:40	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*118*		*71 - 136*	*10/29/13 09:07*	*10/29/13 12:40*	*1*
4-Bromofluorobenzene (Surr)	*100*		*70 - 120*	*10/29/13 09:07*	*10/29/13 12:40*	*1*
Dibromofluoromethane (Surr)	*100*		*75 - 125*	*10/29/13 09:07*	*10/29/13 12:40*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*	*10/29/13 09:07*	*10/29/13 12:40*	*1*
Trifluorotoluene (Surr)	*120*		*65 - 140*	*10/29/13 09:07*	*10/29/13 12:40*	*1*

Lab Sample ID: LCS 580-148184/2-A
Matrix: Solid
Analysis Batch: 148169

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 148184

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	0.800	0.629		mg/Kg		79	72 - 123
1,1,1-Trichloroethane	0.800	0.737		mg/Kg		92	63 - 135
1,1,2,2-Tetrachloroethane	0.800	0.757		mg/Kg		95	73 - 125
1,1,2-Trichloroethane	0.800	0.711		mg/Kg		89	77 - 124
1,1-Dichloroethane	0.800	0.762		mg/Kg		95	70 - 128
1,1-Dichloroethene	0.800	0.724		mg/Kg		90	70 - 133
1,1-Dichloropropene	0.800	0.763		mg/Kg		95	77 - 123
1,2,3-Trichlorobenzene	0.800	0.631		mg/Kg		79	61 - 130
1,2,3-Trichloropropane	0.800	0.818		mg/Kg		102	77 - 123
1,2,4-Trichlorobenzene	0.800	0.614		mg/Kg		77	61 - 130
1,2,4-Trimethylbenzene	0.800	0.712		mg/Kg		89	79 - 124
1,2-Dibromo-3-Chloropropane	0.800	0.852		mg/Kg		107	53 - 132
1,2-Dichlorobenzene	0.800	0.660		mg/Kg		83	79 - 117
1,2-Dichloroethane	0.800	0.791		mg/Kg		99	71 - 128
1,2-Dichloropropane	0.800	0.979		mg/Kg		122	76 - 161
1,3,5-Trimethylbenzene	0.800	0.730		mg/Kg		91	80 - 125
1,3-Dichlorobenzene	0.800	0.644		mg/Kg		80	79 - 119
1,3-Dichloropropane	0.800	0.726		mg/Kg		91	77 - 123
1,4-Dichlorobenzene	0.800	0.636		mg/Kg		79	79 - 117
2,2-Dichloropropane	0.800	0.912		mg/Kg		114	56 - 144
2-Chlorotoluene	0.800	0.669		mg/Kg		84	79 - 122
4-Chlorotoluene	0.800	0.708		mg/Kg		89	80 - 122
4-Isopropyltoluene	0.800	0.712		mg/Kg		89	78 - 126
Benzene	0.800	0.718		mg/Kg		90	70 - 128

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 580-148184/2-A
Matrix: Solid
Analysis Batch: 148169

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 148184

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromobenzene	0.800	0.696		mg/Kg		87	80 - 120
Bromoform	0.800	0.660		mg/Kg		82	50 - 124
Bromomethane	0.800	0.485		mg/Kg		61	57 - 148
Carbon tetrachloride	0.800	0.881		mg/Kg		110	59 - 145
Chlorobenzene	0.800	0.680		mg/Kg		85	75 - 120
Chlorobromomethane	0.800	0.765		mg/Kg		96	78 - 123
Chlorodibromomethane	0.800	0.818		mg/Kg		102	69 - 129
Chloroethane	0.800	0.581		mg/Kg		73	48 - 167
Chloroform	0.800	0.804		mg/Kg		100	78 - 125
Chloromethane	0.800	0.510		mg/Kg		64	55 - 136
cis-1,2-Dichloroethene	0.800	0.758		mg/Kg		95	70 - 130
cis-1,3-Dichloropropene	0.800	0.773		mg/Kg		97	69 - 129
Dibromomethane	0.800	0.713		mg/Kg		89	78 - 126
Dichlorobromomethane	0.800	0.655		mg/Kg		82	58 - 133
Dichlorodifluoromethane	0.800	0.467		mg/Kg		58	38 - 150
Ethylbenzene	0.800	0.679		mg/Kg		85	78 - 126
Ethylene Dibromide	0.800	0.755		mg/Kg		94	69 - 126
Hexachlorobutadiene	0.800	0.587		mg/Kg		73	68 - 134
Isopropylbenzene	0.800	0.649		mg/Kg		81	79 - 127
Methylene Chloride	0.800	0.717		mg/Kg		90	57 - 146
m-Xylene & p-Xylene	0.800	0.683		mg/Kg		85	78 - 126
Naphthalene	0.800	0.669		mg/Kg		84	14 - 170
n-Butylbenzene	0.800	0.662		mg/Kg		83	78 - 128
N-Propylbenzene	0.800	0.733		mg/Kg		92	81 - 127
o-Xylene	0.800	0.669		mg/Kg		84	77 - 127
sec-Butylbenzene	0.800	0.728		mg/Kg		91	78 - 128
Styrene	0.800	0.672		mg/Kg		84	79 - 127
tert-Butylbenzene	0.800	0.715		mg/Kg		89	71 - 136
Tetrachloroethene	0.800	0.679		mg/Kg		85	56 - 150
Toluene	0.800	0.680		mg/Kg		85	75 - 126
trans-1,2-Dichloroethene	0.800	0.751		mg/Kg		94	76 - 131
trans-1,3-Dichloropropene	0.800	0.829		mg/Kg		104	72 - 129
Trichloroethene	0.800	0.718		mg/Kg		90	83 - 124
Trichlorofluoromethane	0.800	0.555		mg/Kg		69	47 - 165
Vinyl chloride	0.800	0.533		mg/Kg		67	67 - 131

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*118*		*71 - 136*
4-Bromofluorobenzene (Surr)	*94*		*70 - 120*
Dibromofluoromethane (Surr)	*112*		*75 - 125*
Toluene-d8 (Surr)	*99*		*80 - 120*
Trifluorotoluene (Surr)	*98*		*65 - 140*

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 580-148184/3-A
Matrix: Solid
Analysis Batch: 148169

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 148184

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	0.800	0.758		mg/Kg		95	72 - 123	19	20
1,1,1-Trichloroethane	0.800	0.866		mg/Kg		108	63 - 135	16	20
1,1,2,2-Tetrachloroethane	0.800	0.911		mg/Kg		114	73 - 125	18	22
1,1,2-Trichloroethane	0.800	0.855		mg/Kg		107	77 - 124	18	18
1,1-Dichloroethane	0.800	0.884		mg/Kg		111	70 - 128	15	21
1,1-Dichloroethene	0.800	0.863		mg/Kg		108	70 - 133	17	23
1,1-Dichloropropene	0.800	0.868		mg/Kg		109	77 - 123	13	16
1,2,3-Trichlorobenzene	0.800	0.753		mg/Kg		94	61 - 130	18	23
1,2,3-Trichloropropane	0.800	0.919		mg/Kg		115	77 - 123	12	23
1,2,4-Trichlorobenzene	0.800	0.719		mg/Kg		90	61 - 130	16	22
1,2,4-Trimethylbenzene	0.800	0.826		mg/Kg		103	79 - 124	15	18
1,2-Dibromo-3-Chloropropane	0.800	1.04		mg/Kg		130	53 - 132	20	27
1,2-Dichlorobenzene	0.800	0.770		mg/Kg		96	79 - 117	15	17
1,2-Dichloroethane	0.800	0.934		mg/Kg		117	71 - 128	17	18
1,2-Dichloropropane	0.800	1.10		mg/Kg		138	76 - 161	12	15
1,3,5-Trimethylbenzene	0.800	0.841		mg/Kg		105	80 - 125	14	18
1,3-Dichlorobenzene	0.800	0.751		mg/Kg		94	79 - 119	15	17
1,3-Dichloropropane	0.800	0.868		mg/Kg		109	77 - 123	18	19
1,4-Dichlorobenzene	0.800	0.747		mg/Kg		93	79 - 117	16	18
2,2-Dichloropropane	0.800	1.03		mg/Kg		128	56 - 144	12	21
2-Chlorotoluene	0.800	0.777		mg/Kg		97	79 - 122	15	18
4-Chlorotoluene	0.800	0.791		mg/Kg		99	80 - 122	11	18
4-Isopropyltoluene	0.800	0.825		mg/Kg		103	78 - 126	15	18
Benzene	0.800	0.846		mg/Kg		106	70 - 128	16	19
Bromobenzene	0.800	0.801		mg/Kg		100	80 - 120	14	19
Bromoform	0.800	0.817		mg/Kg		102	50 - 124	21	25
Bromomethane	0.800	0.566		mg/Kg		71	57 - 148	15	29
Carbon tetrachloride	0.800	1.02		mg/Kg		128	59 - 145	15	19
Chlorobenzene	0.800	0.788		mg/Kg		99	75 - 120	15	21
Chlorobromomethane	0.800	0.875		mg/Kg		109	78 - 123	13	19
Chlorodibromomethane	0.800	1.01		mg/Kg		126	69 - 129	21	23
Chloroethane	0.800	0.745		mg/Kg		93	48 - 167	25	53
Chloroform	0.800	0.939		mg/Kg		117	78 - 125	16	17
Chloromethane	0.800	0.643		mg/Kg		80	55 - 136	23	26
cis-1,2-Dichloroethene	0.800	0.864		mg/Kg		108	70 - 130	13	19
cis-1,3-Dichloropropene	0.800	0.951	*	mg/Kg		119	69 - 129	21	19
Dibromomethane	0.800	0.838		mg/Kg		105	78 - 126	16	18
Dichlorobromomethane	0.800	0.780		mg/Kg		98	58 - 133	17	19
Dichlorodifluoromethane	0.800	0.598		mg/Kg		75	38 - 150	25	26
Ethylbenzene	0.800	0.798		mg/Kg		100	78 - 126	16	23
Ethylene Dibromide	0.800	0.913		mg/Kg		114	69 - 126	19	21
Hexachlorobutadiene	0.800	0.686		mg/Kg		86	68 - 134	15	21
Isopropylbenzene	0.800	0.769		mg/Kg		96	79 - 127	17	20
Methylene Chloride	0.800	0.827		mg/Kg		103	57 - 146	14	21
m-Xylene & p-Xylene	0.800	0.811		mg/Kg		101	78 - 126	17	23
Naphthalene	0.800	0.820		mg/Kg		103	14 - 170	20	50
n-Butylbenzene	0.800	0.771		mg/Kg		96	78 - 128	15	17
N-Propylbenzene	0.800	0.857		mg/Kg		107	81 - 127	16	20

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 580-148184/3-A
Matrix: Solid
Analysis Batch: 148169

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 148184

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
o-Xylene	0.800	0.791		mg/Kg		99	77 - 127	17	22
sec-Butylbenzene	0.800	0.842		mg/Kg		105	78 - 128	15	17
Styrene	0.800	0.809		mg/Kg		101	79 - 127	19	21
tert-Butylbenzene	0.800	0.832		mg/Kg		104	71 - 136	15	27
Tetrachloroethene	0.800	0.794		mg/Kg		99	56 - 150	16	27
Toluene	0.800	0.802		mg/Kg		100	75 - 126	17	19
trans-1,2-Dichloroethene	0.800	0.886		mg/Kg		111	76 - 131	17	18
trans-1,3-Dichloropropene	0.800	1.02	*	mg/Kg		128	72 - 129	21	20
Trichloroethene	0.800	0.841		mg/Kg		105	83 - 124	16	17
Trichlorofluoromethane	0.800	0.675		mg/Kg		84	47 - 165	20	54
Vinyl chloride	0.800	0.736	*	mg/Kg		92	67 - 131	32	22

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*114*		*71 - 136*
4-Bromofluorobenzene (Surr)	*97*		*70 - 120*
Dibromofluoromethane (Surr)	*113*		*75 - 125*
Toluene-d8 (Surr)	*100*		*80 - 120*
Trifluorotoluene (Surr)	*98*		*65 - 140*

Client Sample ID: 13-C025802 YRWWTP Biosolids
Date Collected: 10/22/13 09:40
Date Received: 10/23/13 09:25

Lab Sample ID: 580-40987-1
Matrix: Solid
Percent Solids: 18.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			148184	10/29/13 09:07	MMH	TAL SEA
Total/NA	Analysis	8260B		1	148169	10/29/13 15:31	MMH	TAL SEA
Total/NA	Analysis	D 2216		1	148314	10/30/13 13:46	JJP	TAL SEA

Laboratory References:

TAL SEA = TestAmerica Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Certification Summary

Client: Cascade Analytical Inc
Project/Site: City of Yakima WWTP

TestAmerica Job ID: 580-40987-1

Laboratory: TestAmerica Seattle

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska (UST)	State Program	10	UST-022	03-04-14
California	NELAP	9	01115CA	01-31-14
L-A-B	DoD ELAP		L2236	01-19-16
L-A-B	ISO/IEC 17025		L2236	01-19-16
Montana (UST)	State Program	8	N/A	04-30-20
Oregon	NELAP	10	WA100007	11-06-13
USDA	Federal		P330-11-00222	05-20-14
Washington	State Program	10	C553	02-17-14

Sample Summary

Client: Cascade Analytical Inc
Project/Site: City of Yakima WWTP

TestAmerica Job ID: 580-40987-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-40987-1	13-C025802 YRWWTP Biosolids	Solid	10/22/13 09:40	10/23/13 09:25

Seattle
5755 8th St E

Tacoma, WA 98424
Phone:253-922-2310

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager:	Site Contact:	Date: 10/22/13	COC No:
Cascade Analytical	Tel/Fax:	Lab Contact: ANDY	Carrier: UPS	1 of 1 COCs
1008 W Ahtanum Rd	Analysis Turnaround Time			Job No.
Union Gap, WA 98903	Calendar (C) or Work Days (W) _____			
(509)452-7707	TAT if different from Below _____			
(509)452-7773	☒ 2 weeks			SDG No.
Project Name: City of Yakima WWTP	☐ 1 week			
Site:	☐ 2 days			
PO# 3880608	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	SW8260 - 8260 ENCORE	Sample Specific Notes:
YR WWTP Biosolids	10/22/13	9:40		ms	3		X	13-C025802

580-40987 Chain of Custody

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant Poison B ☐ Unknown ☒

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Special Instructions/QC Requirements & Comments:

EnCore Samples frozen on reciept. AS 10/22/13

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	CAT	10/22 1600		TAISEA	10-23-13 0925
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

11/5/2013

Login Sample Receipt Checklist

Client: Cascade Analytical Inc

Job Number: 580-40987-1

Login Number: 40987
List Number: 1
Creator: McDaniel, Ronald T

List Source: TestAmerica Seattle

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	Temp not taken, but Encores were packed in many gel packs and taken to freezer.
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

CASCADE ANALYTICAL, INC.

AGRICULTURAL&
ENVIRONMENTAL ANALYSIS

3019 G.S. Center Rd.
Wenatchee, WA 98801

(509) 662-1888
Fax: (509) 662-8183
1-800-545-4206

SPECIAL SERVICE ORDER FORM

SAMPLE #	1	2	3	4
SEND RESULTS TO 1)Client 2)Billing 3)Both				
SAMPLE REPRESENTS 1)Food 2)Water 3)Soil 4)Plant Tissue 5)Other				
SAMPLE BY 1)Client 2)Field Rep 3)Quality Control 4)Cascade 5)Other				
SAMPLER'S NAME				

CLIENT NAME/ADDRESS
City of Yakima WWTP
2220 East Viola
Yakima WA 98901
PHONE NO. 509 575613

BILLING NAME/ADDRESS Same
Please Invoice P.O. #
545
PHONE NO.

EMAIL	

EMAIL	

FORM MUST BE COMPLETED BEFORE ANALYSIS WILL BE PERFORMED. #388068

RELINQUISHED BY: (Signature) 1	DATE	RELINQUISHED BY: (Signature) 2	DATE	RELINQUISHED BY: (Signature) 3	DATE
(Printed) Jennifer Kay	TIME 1025Am	(Printed)	TIME	(Printed)	TIME
RECEIVED BY: (Signature) DSchmidt	DATE 10/22/13	RECEIVED BY: (Signature)	DATE	RECEIVED BY: (Signature)	DATE
(Printed) DSchmidt	TIME 10:25	(Printed)	TIME	(Printed)	TIME

1	SAMPLE I.D YRWWTP Biosolids - 13-C025802	Sample Date 10/22/13	Sample Time 0940AM
	ANALYSIS REQUESTED SW846 - 8260 Encore		
	COMMENT		
2	SAMPLE I.D * Resample due to Error	Sample Date	Sample Time
	ANALYSIS REQUESTED		
	COMMENT		
3	SAMPLE I.D.	Sample Date	Sample Time
	ANALYSIS REQUESTED		
	COMMENT		
4	SAMPLE I.D.	Sample Date	Sample Time
	ANALYSIS REQUESTED		
	COMMENT		

Sample container received by client was sealed Yes _____ No _____
Sample container received by laboratory was sealed Yes _____ No _____

Disclaimer:
Cascade Analytical, Inc., makes no warranty of any kind, expressed or implied, and customer assumes all risk and liability from use of Cascade Analytical test results. Cascade neither assumes not authorizes any person to assume for Cascade any other liability in connection with the testing done by Cascade Analytical, Inc., and there are not other oral agreements or warranties collateral to or affecting this agreement.

Cascade Analytical, Inc.'s liability to customer as a result of customers use of Cascade's tests results shall be limited to a sum equal to the fees paid by customer to Cascade Analytical, Inc for the testing work.

Customer Signature _____ Date 10/22/13

CASCADE ANALYTICAL, INC.

Sample Receipt Form

Date Received: 10/22/13 Time Received: 10:25 Initials: DS

Client Name: COY WWTP Project Name: 388068

Temperature of cooler upon receipt: 10 °C Thermometer ID: ORI

Custody seals: (Intact) Broken None N/A

Chain of Custody Completed:

Client name, address, and phone number;	(Yes)	No
Date and time of sampling;	(Yes)	No
Test requests clear;	(Yes)	No
Completed in ink;	(Yes)	No
Signed by client;	(Yes)	No

All samples received:		(Yes)	No
All samples intact:		(Yes)	No
Sample ID's match COC form:		(Yes)	No
Appropriate containers used:		(Yes)	No
Sufficient amount of sample for analysis:		(Yes)	No
Correct preservative verified:	N/A	(Yes)	No
Air bubbles in VOC, TTHM, or HAA5 samples:	(N/A)	Yes	No
Sample(s) exceed hold time:		Yes	(No)

Type of coolant: Ice (Blue Ice) None Other Comment: _____

Shipping Method: FedEx UPS USPS Brett & Sons (Hand Delivered) CAI Sampled

Shipping Container: (CAI Cooler) CAI Cooler Box Client's Cooler None Other _____

Samples accepted for analysis: (Yes) No

Reason for Rejection: _____

Name of Person Contacted: _____ Date Contacted: _____

Comments: _____

CASCADE ANALYTICAL, INC.
1-800-545-4206

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3019 G. S. Center Road
Wenatchee, WA 98801

(509) 452-7707
Fax: (509) 452-7773
1008 W. Ahtanum Rd
Union Gap, WA 98903

Batch: 387661
Client: CITY OF YAKIMA
Account: 148
Sampler: Jennifer
PO Number:

--- Water Analytical Report ---

CITY OF YAKIMA
WASTEWATER DIVISION
2220 E. VIOLA
YAKIMA, WA 98901

Wastewater
OCT 15 2013
Treatment Plant

Report Date: 10/11/13

Laboratory Number: 13-E024914
Sample Identification: YRWWTP-Influent

Date Received: 10/ 9/13
Date Sampled: 10/ 8/13

Test Requested	Results	Units	RL	Method	Date Analyzed	Flags
Cyanide Total-OI Flow	0.011	mg/L	10	ASTM D7511-09	10/11/13	

Approved By Name: [signature]
Function: LAB Supervisor

Signature: [signature]

Cascade Analytical uses procedures established by EPA, AOAC, APHA, ASTM, and FDA/BAM. Cascade Analytical makes no warranty of any kind the client assumes all risk and liability from the use of these results. Cascade Analytical, Inc.'s liability to the client as a result of use of Cascade's test results shall be limited to a sum equal to the fees paid by the client to Cascade Analytical, Inc. for analysis. PLEASE REVIEW YOUR DATA IN A TIMELY MANNER. DATA GAPS OR ERRORS AFTER THREE MONTHS WILL NOT BE OUR RESPONSIBILITY. THOUGH WE DO KEEP ALL ANALYTICAL DATA FOR SEVERAL YEARS, SAMPLES ARE DISPOSED OF AFTER SIX WEEKS.

CASCADE ANALYTICAL, INC.
1-800-545-4206

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(509) 452-7707
Fax: (509) 452-7773
1008 W. Ahtanum Rd
Union Gap, WA 98903

Batch: 387661
Client: CITY OF YAKIMA
Account: 148
Sampler: Jennifer
PO Number:

--- Water Analytical Report ---

Report Date: 10/11/13

CITY OF YAKIMA
WASTEWATER DIVISION
2220 E. VIOLA
YAKIMA, WA 98901

Laboratory Number: 13-E024915
Sample Identification: YRWWTP-Effluent

Date Received: 10/ 9/13
Date Sampled: 10/ 8/13

Test Requested	Results	Units	RL	Method	Date Analyzed	Flags
Cyanide Total-OI Flow	< 0.01	mg/L	10	ASTM D7511-09	10/11/13	

Approved By Name: [signature]
Function: LAB Supervisor

Signature: [signature]

Cascade Analytical uses procedures established by EPA, AOAC, APHA, ASTM, and FDA/BAM. Cascade Analytical makes no warranty of any kind the client assumes all risk and liability from the use of these results. Cascade Analytical, Inc.'s liability to the client as a result of use of Cascade's test results shall be limited to a sum equal to the fees paid by the client to Cascade Analytical, Inc. for analysis. PLEASE REVIEW YOUR DATA IN A TIMELY MANNER. DATA GAPS OR ERRORS AFTER THREE MONTHS WILL NOT BE OUR RESPONSIBILITY. THOUGH WE DO KEEP ALL ANALYTICAL DATA FOR SEVERAL YEARS, SAMPLES ARE DISPOSED OF AFTER SIX WEEKS.

CASCADE ANALYTICAL, INC.

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1-800-545-4206

1008 W. Ahtanum Rd.
Union Gap, WA 98903
(509) 452-7707
Fax: (509) 452-7773

WATER ANALYSIS ORDER FORM

Batch#	SAMPLE # 1	2	3	4	5
SEND RESULTS TO 1) Client 2) Billing 3) Both					
SAMPLE REPRESENTS 1) Irrigation 2) Waste Water 3) Other					
SAMPLE BY 1) Client 2) Quality Control 3) Cascade 4) Other					

New Acct #

CLIENT NAME/ADDRESS	BILLING NAME/ADDRESS
City of Yakima WWTP	same
2220 East Viola	Please invoice P.O. #
Yakima, WA 98901	545
SAMPLER'S NAME	PHONE
	509 575 6133

E-mail _____ E-mail _____

RELINQUISHED BY: (Signature) 1	DATE	RELINQUISHED BY: (Signature) 2	DATE	RELINQUISHED BY: (Signature) 3	DATE
Jennifer Kay	10/8/13				
(Printed) Jennifer Kay	TIME 1:45 PM	(Printed)	TIME	(Printed)	TIME
RECEIVED BY: (Signature) DSchmidt	DATE 10/8/13	RECEIVED BY: (Signature)	DATE	RECEIVED FOR LAB BY: (Signature)	DATE 10/9/13
(Printed) DSchmidt	TIME 13:25	(Printed)	TIME	(Printed)	TIME

FORM MUST BE COMPLETED BEFORE ANALYSIS WILL BE PERFORMED.

1	YRWWTP Influent Total Cyanide	1 - 125mL Plastic (13 AG)	Sample Date 10/8/13 Sample Time 0845
2	YRWWTP Effluent Total Cyanide	1 - 125mL Plastic (BAG)	Sample Date 10/8/13 Sample Time 0845
3			Sample Date ~~10/8/13~~ Sample Time
4	Note: No PP metals needed (JK)		Sample Date Sample Time
5			Sample Date Sample Time

*METALS - indicate type of analysis - T=total, D=dissolved

Total N package = TKN, NO_3, NO_2, NH_3

Sample container received by client was sealed Yes_____ No_____

Sample container received by laboratory was sealed Yes_____ No_____

Disclaimer:

Cascade Analytical, Inc., makes no warranty of any kind, expressed or implied, and customer assumes all risk and liability from the use of Cascade's test results. Cascade neither assumes nor authorizes any person to assume for Cascade any other liability in connection with the testing done by Cascade Analytical, Inc., and there are no other oral agreements or warranties collateral to or affecting this agreement.

Cascade Analytical Inc.'s liability to customer as a result of customers use of Cascade's test results shall be limited to a sum equal to the fees paid by customer to Cascade Analytical, Inc. for the testing work.

Customer Signature: Jennifer Kay Date 10/8/13

This form also serves as "Chain of Custody."

(see legend on back) SAMPLE #

		1	2	3	4	5
	IRRIGATION WATER Standard					
	GENERAL CHEMISTRY					
1135	pH					
1140	Conductivity					
1200	Solids-Dis. (TDS)					
1230	Solids-Susp. (TSS)					
1240	Tot. Phosphorus					
1250	Orthophosphate					
1260	Kjeldahl Nitrogen (TKN)					
1170	Nitrate+Nitrite					
1265	NO_3 (As N)					
1280	Ammonia					
1300	Biol. Oxy. Demand					
1310	Chem. Oxy. Demand					
1190	Sulfate (SO4)					
1180	Chloride (Cl)					
110	TOC					
1320	Hexane Ext. Mat.					
1340	Alkalinity					
217	Total N Pkg					
	Tot. Cyanide	✓	✓			
	MICROBIOLOGY					
10040	Total Coliform MF					
10010	Fecal Coliform MF					
10041	Total Coliform MPN					
10011	Fecal Coliform MPN					
	METALS - TOTAL OR DISSOLVED					
	Priority Pollutants					
1391	Antimony (Sb)					
1011	Arsenic (As)					
1025	Barium (Ba)					
1405	Beryllium (Be)					
1031	Cadmium (Cd)					
1045	Chromium (Cr)					
1215	Copper (Cu)					
1065	Iron (Fe)					
1075	Manganese (Mn)					
1081	Mercury (Hg)					
1051	Lead (Pb)					
1335	Nickel (Ni)					
1091	Selenium (Se)					
1105	Silver (Ag)					
1381	Thallium (Tl)					
1225	Zinc (Zn)					
	MINERALS					
1120	Calcium (Ca)					
1130	Magnesium (Mg)					
1115	Potassium (K)					
1110	Sodium (Na)					

Checked VAW

YAKIMA WASTEWATER PLANT

FATS OILS AND GREASE

Sample Date: 10-7-13 **Performed By:** [illegible]

Test Date: 10-8-13

Method on Analysis EPA 1664

SAMPLE	YRWWTP Influent			
FLASK #				
ml USED	385			
WT. DRY FLASK	~~2.3555~~ 2.2355			
WT MT FLASK	2.2219			
mg/l= wt x 1000 / L	~~347~~ 35			

Sample Location YRWWTP Influent

Collector(s) ~~[illegible]~~ T. Bagley

Time 0400 Sample Type FOG grab

Acid Added ✓

pH = 6.75

WSTWTR-T F-01
8/7/13 DES

Checked JM

YAKIMA WASTEWATER PLANT

FATS OILS AND GREASE

Sample Date: 10-7-13 **Performed By:** JM

Test Date: 10-8-13

Method on Analysis EPA 1664

Duplicate

SAMPLE	YRW WTP Effluent			
FLASK #				
ml USED	440			
WT. DRY FLASK	2.2408			
WT MT FLASK	2.2400			
mg/l= wt x 1000 / L	2			

Sample Location YRWWTP Effluent

Collector(s) T. Bayley

Time 0400 Sample Type FOG grab

Acid Added ✓

pH = 6.99

SAMPLE FORM S-11

( ) Entered

CITY OF YAKIMA WASTEWATER TREATMENT PLANT

Sample Date: 11-2-13

Analysis By: QL

Total Suspended Solids	Sample ID:	Sample ID: Effluent TSS
Sample (mL)		25
Pad + Sample (g)		2.1027
Pad Weight (g)		2.0790 pan
mg/L=Sample (g)*10^6 / Sample (mL)		548 mg/L

Incubation Date:_____

Testing Date:_____ Work Order Acct. #_____

Analysis By: /

Sample	Bottle #	mL	Initial DO	Final DO	Depletion	BOD	**BOD AVE**
Dilution:			pH:			Grab pH:	

Sample Location Effluent Composite

Collector(s) T. Bagley

Time 0900 Grab_____ Composite_____

Standard Methods 18th Edition 2540 D / /EPA 360.3 (Hach 10360)