

ANALYTICAL REPORT

Job Number: 680-57854-1

Job Description: City of Yelm

For:

Golder Associates Inc.

9 Monroe Parkway

Lake Oswego, OR 97035

Attention: Kenny Janssen



Approved for release.
Bernard Kirkland
Project Manager I
6/8/2010 12:30 PM

Bernard Kirkland

Project Manager I

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06/08/2010

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Job Narrative
680-57854-1

Receipt

All samples were received in good condition within temperature requirements.

Metals

No analytical or quality issues were noted.

General Chemistry

Method(s) 300.0: Due to the high concentration of nitrate, the matrix spike (MS) for batch 169566 could not be evaluated for accuracy . The associated laboratory control sample (LCS) met acceptance criteria.

Method(s) 4500 P F: The following sample was received with little holding time remaining and was analyzed outside of analytical holding time : SW Well No 1 (680-57854-1). Data has been flagged.

No other analytical or quality issues were noted.

METHOD SUMMARY

Client: Golder Associates Inc.

Job Number: 680-57854-1

Description		Lab Location	Method	Preparation Method
Matrix	Water			
Metals (ICP)		TAL SAV	40CFR136A 200.7 Rev 4.4	
Metals (ICP)		TAL SAV	EPA 200.7 Rev 4.4	
Sample Filtration		TAL SAV		FILTRATION
Preparation, Metals		TAL SAV		EPA 200
Sample Filtration		TAL SAV		FILTRATION
Metals (ICP/MS)		TAL SAV	EPA 200.8	
Preparation, Metals		TAL SAV		EPA 200
Anions, Ion Chromatography		TAL SAV	MCAWW 300.0	
Anions, Ion Chromatography		TAL SAV	MCAWW 300.0	
Orthophosphate		TAL SAV	SM 4500 P F	
Alkalinity		TAL SAV	SM SM 2320B	
Solids, Total Dissolved (TDS)		TAL SAV	SM SM 2540C	

Lab References:

TAL SAV = TestAmerica Savannah

Method References:

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater",

SAMPLE SUMMARY

Client: Golder Associates Inc.

Job Number: 680-57854-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
680-57854-1	SW Well No 1	Water	05/19/2010 1720	05/21/2010 0845

Analytical Data

Client: Golder Associates Inc.

Job Number: 680-57854-1

Client Sample ID: SW Well No 1

Lab Sample ID: 680-57854-1

Date Sampled: 05/19/2010 1720

Client Matrix: Water

Date Received: 05/21/2010 0845

200.7 Rev 4.4 Metals (ICP)

Method:	200.7 Rev 4.4	Analysis Batch: 680-170366	Instrument ID:	ICPD
Preparation:	200	Prep Batch: 680-169672	Lab File ID:	169672.chr
Dilution:	1.0		Initial Weight/Volume:	50 mL
Date Analyzed:	06/01/2010 2223		Final Weight/Volume:	50 mL
Date Prepared:	05/25/2010 1340			

Analyte	Result (ug/L)	Qualifier	MDL	RL
Aluminum	200	U	100	200
Calcium	13000		97	500
Copper	20	U	5.0	20
Iron	1200		24	50
Magnesium	8400		20	500
Manganese	140		3.0	10
Potassium	2000		40	1000
Silver	10	U	0.97	10
Sodium	7800		280	1000
Zinc	6.8	J	6.3	20

200.7 Rev 4.4 Metals (ICP)-Dissolved

Method:	200.7 Rev 4.4	Analysis Batch: 680-170764	Instrument ID:	Varian ICP
Preparation:	N/A		Lab File ID:	E006072010A.csv
Dilution:	1.0		Initial Weight/Volume:	
Date Analyzed:	06/07/2010 1503		Final Weight/Volume:	1.0 mL
Date Prepared:				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Dissolved SiO2, Silica	41000		50	500

Method:	200.7 Rev 4.4	Analysis Batch: 680-170811	Instrument ID:	ICPD
Preparation:	200	Prep Batch: 680-170376	Lab File ID:	170376.chr
Dilution:	1.0		Initial Weight/Volume:	50 mL
Date Analyzed:	06/07/2010 2028		Final Weight/Volume:	50 mL
Date Prepared:	06/02/2010 1529			

Analyte	Result (ug/L)	Qualifier	MDL	RL
Dissolved Iron	50	U	24	50
Dissolved Manganese	20		3.0	10

200.8 Metals (ICP/MS)

Method:	200.8	Analysis Batch: 680-170612	Instrument ID:	ICPMSB
Preparation:	200	Prep Batch: 680-169606	Lab File ID:	169606.chr
Dilution:	1.0		Initial Weight/Volume:	50 mL
Date Analyzed:	05/28/2010 0713		Final Weight/Volume:	50 mL
Date Prepared:	05/25/2010 0936			

Analyte	Result (ug/L)	Qualifier	MDL	RL
Antimony	1.0	U	0.40	1.0
Arsenic	5.1		0.37	1.0

Analytical Data

Client: Golder Associates Inc.

Job Number: 680-57854-1

Client Sample ID: SW Well No 1

Lab Sample ID: 680-57854-1

Client Matrix: Water

Date Sampled: 05/19/2010 1720

Date Received: 05/21/2010 0845

200.8 Metals (ICP/MS)

Analyte	Result (ug/L)	Qualifier	MDL	RL
Barium	6.6		0.14	2.0
Cadmium	0.10	U	0.043	0.10
Chromium	2.0	U	1.0	2.0
Copper	1.9		0.50	1.0
Lead	0.29	J	0.060	0.30
Mercury	0.20	U	0.058	0.20
Selenium	2.0	U	0.58	2.0
Thallium	0.20	U	0.10	0.20

Method: 200.8

Analysis Batch: 680-170609

Instrument ID: ICPMSB

Preparation: 200

Prep Batch: 680-169606

Lab File ID: 169606606.chr

Dilution: 1.0

Initial Weight/Volume: 50 mL

Date Analyzed: 06/04/2010 0531

Final Weight/Volume: 50 mL

Date Prepared: 05/25/2010 0936

Analyte	Result (ug/L)	Qualifier	MDL	RL
Beryllium	0.40	U	0.15	0.40

Analytical Data

Client: Golder Associates Inc.

Job Number: 680-57854-1

General Chemistry

Client Sample ID: SW Well No 1

Lab Sample ID: 680-57854-1

Client Matrix: Water

Date Sampled: 05/19/2010 1720

Date Received: 05/21/2010 0845

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Chloride	5.2		mg/L	0.20	1.0	1.0	300.0
	Analysis Batch: 680-170177	Date Analyzed: 05/30/2010 1223					
Nitrate as N	1.9		mg/L	0.015	0.050	1.0	300.0
	Analysis Batch: 680-169566	Date Analyzed: 05/21/2010 1151					
Fluoride	0.079	J	mg/L	0.020	0.20	1.0	300.0
	Analysis Batch: 680-170177	Date Analyzed: 05/30/2010 1223					
Nitrite as N	0.050	U	mg/L	0.015	0.050	1.0	300.0
	Analysis Batch: 680-169566	Date Analyzed: 05/21/2010 1151					
Sulfate	3.7		mg/L	0.50	1.0	1.0	300.0
	Analysis Batch: 680-170177	Date Analyzed: 05/30/2010 1223					
ortho-Phosphate	0.040	J H	mg/L	0.016	0.050	1.0	4500 P F
	Analysis Batch: 680-170192	Date Analyzed: 05/24/2010 0916					
Analyte	Result	Qual	Units	RL	RL	Dil	Method
Alkalinity	70		mg/L	5.0	5.0	1.0	SM 2320B
	Analysis Batch: 680-169554	Date Analyzed: 05/24/2010 1359					
Bicarbonate Alkalinity as CaCO3	70		mg/L	5.0	5.0	1.0	SM 2320B
	Analysis Batch: 680-169554	Date Analyzed: 05/24/2010 1359					
Carbon Dioxide, Free	5.0	U	mg/L	5.0	5.0	1.0	SM 2320B
	Analysis Batch: 680-169554	Date Analyzed: 05/24/2010 1359					
Total Dissolved Solids	130		mg/L	5.0	5.0	1.0	SM 2540C
	Analysis Batch: 680-169640	Date Analyzed: 05/25/2010 1209					

DATA REPORTING QUALIFIERS

Client: Golder Associates Inc.

Job Number: 680-57854-1

Lab Section	Qualifier	Description
Metals		
	U	Indicates the analyte was analyzed for but not detected.
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
General Chemistry		
	U	Indicates the analyte was analyzed for but not detected.
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
	H	Sample was prepped or analyzed beyond the specified holding time

Quality Control Results

Client: Golder Associates Inc.

Job Number: 680-57854-1

Method Blank - Batch: 680-169672

Method: 200.7 Rev 4.4

Preparation: 200

Lab Sample ID: MB 680-169672/19-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/01/2010 2006
Date Prepared: 05/25/2010 1340

Analysis Batch: 680-170366
Prep Batch: 680-169672
Units: ug/L

Instrument ID: ICPD
Lab File ID: 169672.chr
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result	Qual	MDL	RL
Aluminum	200	U	100	200
Calcium	500	U	97	500
Copper	20	U	5.0	20
Iron	50	U	24	50
Magnesium	500	U	20	500
Manganese	10	U	3.0	10
Potassium	1000	U	40	1000
Silver	10	U	0.97	10
Sodium	1000	U	280	1000
Zinc	20	U	6.3	20

Lab Control Sample - Batch: 680-169672

Method: 200.7 Rev 4.4

Preparation: 200

Lab Sample ID: LCS 680-169672/20-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/01/2010 2011
Date Prepared: 05/25/2010 1340

Analysis Batch: 680-170366
Prep Batch: 680-169672
Units: ug/L

Instrument ID: ICPD
Lab File ID: 169672.chr
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Aluminum	2000	2020	101	85 - 115	
Calcium	5000	5060	101	85 - 115	
Copper	250	250	100	85 - 115	
Iron	1000	1000	100	85 - 115	
Magnesium	5000	5030	101	85 - 115	
Manganese	500	513	103	85 - 115	
Potassium	5000	5380	108	85 - 115	
Silver	50.0	50.1	100	85 - 115	
Sodium	5000	5050	101	85 - 115	
Zinc	500	521	104	85 - 115	

Quality Control Results

Client: Golder Associates Inc.

Job Number: 680-57854-1

Method Blank - Batch: 680-170376

Lab Sample ID: MB 680-170372/19-B
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/07/2010 1753
Date Prepared: 06/02/2010 1516

Analysis Batch: 680-170811
Prep Batch: 680-170376
Units: ug/L

Method: 200.7 Rev 4.4

Preparation: 200

Dissolved

Instrument ID: ICPD
Lab File ID: 170376.chr
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result	Qual	MDL	RL
Dissolved Iron	50	U	24	50
Dissolved Manganese	10	U	3.0	10

Lab Control Sample - Batch: 680-170376

Lab Sample ID: LCS 680-170376/26-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/07/2010 1758
Date Prepared: 06/02/2010 1516

Analysis Batch: 680-170811
Prep Batch: 680-170376
Units: ug/L

Method: 200.7 Rev 4.4

Preparation: 200

Instrument ID: ICPD
Lab File ID: 170376.chr
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Dissolved Iron	1000	1050	105	85 - 115	
Dissolved Manganese	500	529	106	85 - 115	

Quality Control Results

Client: Golder Associates Inc.

Job Number: 680-57854-1

Method Blank - Batch: 680-170764

Method: 200.7 Rev 4.4

Preparation: N/A

Lab Sample ID: MB 680-170706/1-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/07/2010 1351
Date Prepared: N/A

Analysis Batch: 680-170764
Prep Batch: N/A
Units: ug/L

Instrument ID: Varian ICP
Lab File ID: E006072010A.csv
Initial Weight/Volume:
Final Weight/Volume: 1.0 mL

Analyte	Result	Qual	MDL	RL
Dissolved SiO ₂ , Silica	500	U	50	500

Lab Control Sample - Batch: 680-170764

Method: 200.7 Rev 4.4

Preparation: N/A

Lab Sample ID: LCS 680-170706/2-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/07/2010 1354
Date Prepared: N/A

Analysis Batch: 680-170764
Prep Batch: N/A
Units: ug/L

Instrument ID: Varian ICP
Lab File ID: E006072010A.csv
Initial Weight/Volume:
Final Weight/Volume: 1.0 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Dissolved SiO ₂ , Silica	10000	10100	101	85 - 115	

Quality Control Results

Client: Golder Associates Inc.

Job Number: 680-57854-1

Method Blank - Batch: 680-169606

Method: 200.8

Preparation: 200

Lab Sample ID: MB 680-169606/18-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 05/28/2010 0421
Date Prepared: 05/25/2010 0936

Analysis Batch: 680-170612
Prep Batch: 680-169606
Units: ug/L

Instrument ID: ICPMSB
Lab File ID: 169606.chr
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result	Qual	MDL	RL
Antimony	1.0	U	0.40	1.0
Arsenic	1.0	U	0.37	1.0
Barium	2.0	U	0.14	2.0
Cadmium	0.10	U	0.043	0.10
Chromium	2.0	U	1.0	2.0
Copper	1.0	U	0.50	1.0
Lead	0.30	U	0.060	0.30
Mercury	0.20	U	0.058	0.20
Selenium	2.0	U	0.58	2.0
Thallium	0.20	U	0.10	0.20

Method Blank - Batch: 680-169606

Method: 200.8

Preparation: 200

Lab Sample ID: MB 680-169606/18-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/04/2010 1051
Date Prepared: 05/25/2010 0936

Analysis Batch: 680-170609
Prep Batch: 680-169606
Units: ug/L

Instrument ID: ICPMSB
Lab File ID: 169606606.chr
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result	Qual	MDL	RL
Antimony	1.0	U	0.40	1.0
Arsenic	1.0	U	0.37	1.0
Barium	2.0	U	0.14	2.0
Beryllium	0.40	U	0.15	0.40
Cadmium	0.10	U	0.043	0.10
Chromium	2.0	U	1.0	2.0
Copper	1.0	U	0.50	1.0
Lead	0.30	U	0.060	0.30
Mercury	0.20	U	0.058	0.20
Selenium	2.0	U	0.58	2.0
Thallium	0.20	U	0.10	0.20

Quality Control Results

Client: Golder Associates Inc.

Job Number: 680-57854-1

Lab Control Sample - Batch: 680-169606

Method: 200.8
Preparation: 200

Lab Sample ID: LCS 680-169606/19-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 05/28/2010 0433
Date Prepared: 05/25/2010 0936

Analysis Batch: 680-170612
Prep Batch: 680-169606
Units: ug/L

Instrument ID: ICPMSB
Lab File ID: 169606.chr
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Antimony	10.0	10.8	108	85 - 115	
Arsenic	20.0	20.5	102	85 - 115	
Barium	20.0	19.5	97	85 - 115	
Cadmium	10.0	9.98	100	85 - 115	
Chromium	20.0	19.7	98	85 - 115	
Copper	20.0	20.9	104	85 - 115	
Lead	10.0	9.82	98	85 - 115	
Mercury	1.00	0.982	98	85 - 115	
Selenium	20.0	20.6	103	85 - 115	
Thallium	8.00	7.60	95	85 - 115	

Lab Control Sample - Batch: 680-169606

Method: 200.8
Preparation: 200

Lab Sample ID: LCS 680-169606/19-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/04/2010 1057
Date Prepared: 05/25/2010 0936

Analysis Batch: 680-170609
Prep Batch: 680-169606
Units: ug/L

Instrument ID: ICPMSB
Lab File ID: 169606606.chr
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Antimony	10.0	10.9	109	85 - 115	
Arsenic	20.0	20.2	101	85 - 115	
Barium	20.0	19.5	97	85 - 115	
Beryllium	10.0	10.0	100	85 - 115	
Cadmium	10.0	10.2	102	85 - 115	
Chromium	20.0	20.3	102	85 - 115	
Copper	20.0	20.6	103	85 - 115	
Lead	10.0	10.1	101	85 - 115	
Mercury	1.00	1.05	105	85 - 115	
Selenium	20.0	21.0	105	85 - 115	
Thallium	8.00	7.74	97	85 - 115	

Quality Control Results

Client: Golder Associates Inc.

Job Number: 680-57854-1

Method Blank - Batch: 680-169566

Method: 300.0

Preparation: N/A

Lab Sample ID: MB 680-169566/7
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 05/21/2010 1114
Date Prepared: N/A

Analysis Batch: 680-169566
Prep Batch: N/A
Units: mg/L

Instrument ID: ICG
Lab File ID: 0005.d
Initial Weight/Volume:
Final Weight/Volume: 5 mL

Analyte	Result	Qual	MDL	RL
Nitrate as N	0.050	U	0.015	0.050
Nitrate Nitrite as N	0.050	U	0.015	0.050
Nitrite as N	0.050	U	0.015	0.050

Lab Control Sample - Batch: 680-169566

Method: 300.0

Preparation: N/A

Lab Sample ID: LCS 680-169566/8
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 05/21/2010 1126
Date Prepared: N/A

Analysis Batch: 680-169566
Prep Batch: N/A
Units: mg/L

Instrument ID: ICG
Lab File ID: 0006.d
Initial Weight/Volume:
Final Weight/Volume: 5 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrate as N	0.499	0.490	98	90 - 110	
Nitrite as N	0.502	0.498	99	90 - 110	

Matrix Spike - Batch: 680-169566

Method: 300.0

Preparation: N/A

Lab Sample ID: 680-57854-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 05/21/2010 1204
Date Prepared: N/A

Analysis Batch: 680-169566
Prep Batch: N/A
Units: mg/L

Instrument ID: ICG
Lab File ID: 0009.d
Initial Weight/Volume:
Final Weight/Volume: 5 mL
1 uL

Analyte	Sample Result/Qual	Spike Amount	Result	% Rec.	Limit	Qual
Nitrite as N	0.050 U	0.997	1.03	104	90 - 110	

Quality Control Results

Client: Golder Associates Inc.

Job Number: 680-57854-1

Method Blank - Batch: 680-170177

Method: 300.0
Preparation: N/A

Lab Sample ID: MB 680-170177/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 05/30/2010 1133
Date Prepared: N/A

Analysis Batch: 680-170177
Prep Batch: N/A
Units: mg/L

Instrument ID: ICG
Lab File ID: 0005.d
Initial Weight/Volume: 1.0 mL
Final Weight/Volume: 5 mL

Analyte	Result	Qual	MDL	RL
Chloride	1.0	U	0.20	1.0
Fluoride	0.20	U	0.020	0.20
Sulfate	1.0	U	0.50	1.0

Lab Control Sample - Batch: 680-170177

Method: 300.0
Preparation: N/A

Lab Sample ID: LCS 680-170177/3
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 05/30/2010 1146
Date Prepared: N/A

Analysis Batch: 680-170177
Prep Batch: N/A
Units: mg/L

Instrument ID: ICG
Lab File ID: 0006.d
Initial Weight/Volume: 1.0 mL
Final Weight/Volume: 5 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Chloride	10.0	10.3	103	90 - 110	
Fluoride	2.00	2.15	107	90 - 110	
Sulfate	10.0	10.6	106	90 - 110	

Matrix Spike - Batch: 680-170177

Method: 300.0
Preparation: N/A

Lab Sample ID: 680-57854-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 05/30/2010 1235
Date Prepared: N/A

Analysis Batch: 680-170177
Prep Batch: N/A
Units: mg/L

Instrument ID: ICG
Lab File ID: 0010.d
Initial Weight/Volume: 1.0 mL
Final Weight/Volume: 5 mL
1 uL

Analyte	Sample Result/Qual	Spike Amount	Result	% Rec.	Limit	Qual
Chloride	5.2	10.0	16.0	108	90 - 110	
Fluoride	0.079 J	2.00	2.22	107	90 - 110	
Sulfate	3.7	10.0	13.9	102	90 - 110	

Quality Control Results

Client: Golder Associates Inc.

Job Number: 680-57854-1

Method Blank - Batch: 680-170192

Method: 4500 P F

Preparation: N/A

Lab Sample ID: MB 680-170192/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 05/24/2010 0916
Date Prepared: N/A

Analysis Batch: 680-170192
Prep Batch: N/A
Units: mg/L

Instrument ID: KONELAB2
Lab File ID: N/A
Initial Weight/Volume: 2 mL
Final Weight/Volume: 2 mL

Analyte	Result	Qual	MDL	RL
ortho-Phosphate	0.050	U	0.016	0.050

Lab Control Sample - Batch: 680-170192

Method: 4500 P F

Preparation: N/A

Lab Sample ID: LCS 680-170192/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 05/24/2010 0916
Date Prepared: N/A

Analysis Batch: 680-170192
Prep Batch: N/A
Units: mg/L

Instrument ID: KONELAB2
Lab File ID: N/A
Initial Weight/Volume: 2 mL
Final Weight/Volume: 2 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
ortho-Phosphate	1.20	1.23	103	90 - 110	

Quality Control Results

Client: Golder Associates Inc.

Job Number: 680-57854-1

Method Blank - Batch: 680-169554

Method: SM 2320B

Preparation: N/A

Lab Sample ID: MB 680-169554/5
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 05/24/2010 1254
Date Prepared: N/A

Analysis Batch: 680-169554
Prep Batch: N/A
Units: mg/L

Instrument ID: MANTECH
Lab File ID: alk052410a.TXT
Initial Weight/Volume: 25 mL
Final Weight/Volume: 25 mL

Analyte	Result	Qual	RL	RL
Alkalinity	5.0	U	5.0	5.0
Bicarbonate Alkalinity as CaCO ₃	5.0	U	5.0	5.0
Carbon Dioxide, Free	5.0	U	5.0	5.0

Lab Control Sample - Batch: 680-169554

Method: SM 2320B

Preparation: N/A

Lab Sample ID: LCS 680-169554/6
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 05/24/2010 1304
Date Prepared: N/A

Analysis Batch: 680-169554
Prep Batch: N/A
Units: mg/L

Instrument ID: MANTECH
Lab File ID: alk052410a.TXT
Initial Weight/Volume: 25 mL
Final Weight/Volume: 25 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Alkalinity	576	563	98	80 - 120	

Duplicate - Batch: 680-169554

Method: SM 2320B

Preparation: N/A

Lab Sample ID: 680-57854-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 05/24/2010 1406
Date Prepared: N/A

Analysis Batch: 680-169554
Prep Batch: N/A
Units: mg/L

Instrument ID: MANTECH
Lab File ID: alk052410a.TXT
Initial Weight/Volume: 25 mL
Final Weight/Volume: 25 mL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Alkalinity	70	70.4	0	30	
Bicarbonate Alkalinity as CaCO ₃	70	70.1	0	30	
Carbon Dioxide, Free	5.0 U	5.0	NC	30	U

Quality Control Results

Client: Golder Associates Inc.

Job Number: 680-57854-1

Method Blank - Batch: 680-169640

Method: SM 2540C

Preparation: N/A

Lab Sample ID: MB 680-169640/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 05/25/2010 1209
Date Prepared: N/A

Analysis Batch: 680-169640
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 100 mL
Final Weight/Volume: 100 mL

Analyte	Result	Qual	RL	RL
Total Dissolved Solids	5.0	U	5.0	5.0

Lab Control Sample/

Lab Control Sample Duplicate Recovery Report - Batch: 680-169640

Method: SM 2540C

Preparation: N/A

LCS Lab Sample ID: LCS 680-169640/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 05/25/2010 1209
Date Prepared: N/A

Analysis Batch: 680-169640
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 100 mL
Final Weight/Volume: 100 mL

LCS Lab Sample ID:	LCS 680-169640/2	Analysis Batch:	680-169640	Instrument ID:	No Equipment Assigned
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Units:	mg/L	Initial Weight/Volume:	100 mL
Date Analyzed:	05/25/2010 1209			Final Weight/Volume:	100 mL
Date Prepared:	N/A				

Analyte	LCS	<u>% Rec.</u> LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Total Dissolved Solids	104	108	80 - 120	4	25		

Duplicate - Batch: 680-169640

Method: SM 2540C

Preparation: N/A

Lab Sample ID: 680-57854-1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 05/25/2010 1209
Date Prepared: N/A

Analysis Batch: 680-169640
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 100 mL
Final Weight/Volume: 100 mL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Total Dissolved Solids	130	134	2	25	

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Fax 253-922-5047
www.testamericainc.com

☐ Rush
☐ Short Hold

Chain of Custody Record

Client		Client Contact		Date		Chain of Custody Number	
Golder Associates Inc		Kenneth Janssen		5.20.10		7367	
Address		Telephone Number (Area Code)/Fax Number		Lab Number		Page 1 of 1	
9 Monroe Parkway Ste 270		503-607-1820					
City Lake Oswego		State OR		Zip Code 97035			
Project Name and Location (State)		Billing Contact		Analysis (Attach list if more space is needed)		Special Instructions/Conditions of Receipt	
City of Yelm/SW well No 2/WA		Andrea Cornetta					
Contract/Purchase Order/Quote No. Lab Project#							
68007670							
Sample I.D. and Location/Description (Containers for each sample may be combined on one line)	Date	Time	Matrix	Containers & Preservatives	Sample Disposal	Disposal By Lab	Disposal For
SW well No 1-1	5.19.10	1720	Air	Unpres.	☒ Return To Client	☐ Archive For	1
SW well No 1-2	5.19.10	1720	Aqueous	H2SO4	☐ Unknown	☐ Months	
SW well No 1-3	5.19.10	1720	Sed	HNO3	☐ Poison B	☐ Skin Irritant	
SW well No 1-4	5.19.10	1720	Soil	HCl	☐ Flammable	☐ Non-Hazard	
SW well No 1-5	5.19.10	1720			☐ Possible Hazard Identification	☐ Non-Hazard	
SW well No 1-6	5.19.10	1720			☒ Yes	☐ No	
					☐ Cooler Temp:	☐ 24 Hours	☐ 48 Hours
					☐ 10 Days	☐ 15 Days	☐ Other
Turn Around Time Required (business days)		Date		Time		Date	
1. Relinquished By Sign/Print Elizabeth Bartosik		5.20.10		800		5.20.10 0845	
2. Relinquished By Sign/Print		Date		Time		Date	
3. Relinquished By Sign/Print		Date		Time		Date	
Comments							

2010