

**APPENDIX 2 -
LABORATORY REPORTS FOR WATER SAMPLES
COLLECTED JANUARY AND APRIL 2014**



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Certificate of Analysis

Brad Shultz
Skelly & Loy, Inc.
449 Eisenhower Blvd., Suite 300
Harrisburg, PA 17111


Project: TU TAG Cold Stream AMD
Date Reported: 1/29/2014
Date Received: 1/15/2014 2:00:00 PM
Date Approved: 1/28/2014 3:04:34 PM

Lab Sample No.: 1401154-001	Sample ID: Mini Drift Final Outfall	Description:					
Sampler: brs, gam	Date Sampled: 1/14/2014	Matrix: Surface Water					
Test	Result	Units	Method	Qlf.	Prep Date	Test Date	Analyst
Acidity	144	mg CaCO3/L	SM 2310B		Not Required	1/21/2014	BC
Alkalinity	0	mg CaCO3/L	SM 2320B		Not Required	1/21/2014	BC
pH	3.6	pH Units	SM 4500B	pH1	Not Required	1/21/2014	BC
Sulfate	579	mg/L	SM 4110B		Not Required	1/21/2014	CH
Aluminum	13.85	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Aluminum, Dissolved	13.72	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Calcium, Dissolved	112.99	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Iron	6.90	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Iron, Dissolved	2.70	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Manganese	12.23	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Manganese, Dissolved	12.49	mg/L	EPA 200.7		Not Required	1/20/2014	DW

One or Some Dissolved Metals exceed the Total Metals. This data has been verified.

Qualifiers

pH1 = Analyzed past hold time of 15 minutes.

Approved By 
Carlton R. McCracken, Jr. Chemist



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Date Approved: 1/28/2014 3:04:34 PM

Lab Sample No.:	1401154-002	Sample ID:	Mini Drift Raw AMD	Description:			
Sampler:	brs, gam	Date Sampled:	1/14/2014	Matrix:	Ground Water		
Test	Result	Units	Method	Qlf.	Prep Date	Test Date	Analyst
Alkalinity	0	mg CaCO3/L	SM 2320B		Not Required	1/21/2014	BC
Acidity	466	mg CaCO3/L	SM 2310B		Not Required	1/21/2014	BC
Sulfate	717	mg/L	SM 4110B		Not Required	1/21/2014	CH
Chloride	<2.0	mg/L	SM 4110B		Not Required	1/21/2014	CH
pH	2.6	pH Units	SM 4500B	pH1	Not Required	1/21/2014	BC
Ferrous Iron	0.31	mg/L	SM 3500-Fe B		Not Required	1/17/2014	HW
Aluminum	30.20	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Aluminum, Dissolved	29.58	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Calcium, Dissolved	43.13	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Iron	25.56	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Iron, Dissolved	24.66	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Potassium, Dissolved	1.86	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Magnesium, Dissolved	51.89	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Manganese	12.56	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Manganese, Dissolved	12.41	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Sodium, Dissolved	0.77	mg/L	EPA 200.7		Not Required	1/20/2014	DW



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Date Approved: 1/28/2014 3:04:34 PM

Lab Sample No.: 1401154-002	Sample ID: Mini Drift Raw AMD	Description:					
Sampler: brs, gam	Date Sampled: 1/14/2014	Matrix: Ground Water					
Test	Result	Units	Method	Qlf.	Prep Date	Test Date	Analyst

Qualifiers

pH1 = Analyzed past hold time of 15 minutes.

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Lab Sample No.:	1401154-003	Sample ID:	Stump Raw AMD	Description:			
Sampler:	brs, gam	Date Sampled:	1/14/2014	Matrix:	Ground Water		
Test	Result	Units	Method	Qlf.	Prep Date	Test Date	Analyst
Alkalinity	0	mg CaCO3/L	SM 2320B		Not Required	1/21/2014	BC
Acidity	155	mg CaCO3/L	SM 2310B		Not Required	1/21/2014	BC
Sulfate	360	mg/L	SM 4110B		Not Required	1/21/2014	CH
Chloride	<2.0	mg/L	SM 4110B		Not Required	1/21/2014	CH
pH	3.7	pH Units	SM 4500B	pH1	Not Required	1/21/2014	BC
Aluminum	17.43	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Aluminum, Dissolved	17.21	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Calcium, Dissolved	34.11	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Iron	0.19	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Iron, Dissolved	0.24	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Potassium, Dissolved	1.82	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Magnesium, Dissolved	42.19	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Manganese	10.10	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Manganese, Dissolved	9.90	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Sodium, Dissolved	0.84	mg/L	EPA 200.7		Not Required	1/20/2014	DW



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Lab Sample No.: 1401154-003	Sample ID: Stump Raw AMD	Description:					
Sampler: brs, gam	Date Sampled: 1/14/2014	Matrix: Ground Water					
Test	Result	Units	Method	Qlf.	Prep Date	Test Date	Analyst

Ferrous Iron not analyzed, did not receive bottle.
One or Some Dissolved Metals exceed the Total Metals. This data has been verified.

Qualifiers

pH1 = Analyzed past hold time of 15 minutes.

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Lab Sample No.:	1401154-004	Sample ID:	Stump/Stump Dr & Mine Drift O	Description:		Matrix:	Surface Water
Sampler:	brs, gam	Date Sampled:	1/14/2014	Qlf.		Prep Date	
Test	Result	Units	Method	Qlf.	Prep Date	Test Date	Analyst
Acidity	113	mg CaCO3/L	SM 2310B		Not Required	1/21/2014	BC
Alkalinity	0	mg CaCO3/L	SM 2320B		Not Required	1/21/2014	BC
pH	4.0	pH Units	SM 4500B	pH1	Not Required	1/21/2014	BC
Sulfate	433	mg/L	SM 4110B		Not Required	1/21/2014	CH
Aluminum	14.85	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Aluminum, Dissolved	14.19	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Calcium, Dissolved	69.16	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Iron	1.12	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Iron, Dissolved	0.90	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Manganese	10.41	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Manganese, Dissolved	10.55	mg/L	EPA 200.7		Not Required	1/20/2014	DW

One or Some Dissolved Metals exceed the Total Metals. This data has been verified.

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Lab Sample No.:	1401154-005	Sample ID:	Stump LS Pond Outfall	Description:			
Sampler:	brs, gam	Date Sampled:	1/14/2014	Matrix:	Surface Water		
Test	Result	Units	Method	Qlf.	Prep Date	Test Date	Analyst
Alkalinity	3	mg CaCO3/L	SM 2320B		Not Required	1/21/2014	BC
Acidity	142	mg CaCO3/L	SM 2310B		Not Required	1/21/2014	BC
Sulfate	348	mg/L	SM 4110B		Not Required	1/21/2014	CH
Chloride	<2.0	mg/L	SM 4110B		Not Required	1/21/2014	CH
pH	4.2	pH Units	SM 4500B	pH1	Not Required	1/21/2014	BC
Ferrous Iron	0.09	mg/L	SM 3500-Fe B		Not Required	1/17/2014	HW
Aluminum	15.92	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Aluminum, Dissolved	15.30	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Calcium, Dissolved	37.15	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Iron	0.16	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Iron, Dissolved	0.14	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Potassium, Dissolved	1.74	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Magnesium, Dissolved	40.71	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Manganese	9.54	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Manganese, Dissolved	9.24	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Sodium, Dissolved	0.78	mg/L	EPA 200.7		Not Required	1/20/2014	DW



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Lab Sample No.: 1401154-005	Sample ID: Stump LS Pond Outfall	Description:					
Sampler: brs, gam	Date Sampled: 1/14/2014	Matrix: Surface Water					
Test	Result	Units	Method	Qlf.	Prep Date	Test Date	Analyst

Qualifiers

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Lab Sample No.:	1401154-006	Sample ID:	Stump, Stump Jr., & Mine Drift	Description:			
Sampler:	brs, gam	Date Sampled:	1/14/2014	Matrix:	Surface Water		
Test	Result	Units	Method	Qlf.	Prep Date	Test Date	Analyst
Acidity	124	mg CaCO3/L	SM 2310B		Not Required	1/21/2014	BC
Alkalinity	6	mg CaCO3/L	SM 2320B		Not Required	1/21/2014	BC
pH	4.3	pH Units	SM 4500B	pH1	Not Required	1/21/2014	BC
Sulfate	353	mg/L	SM 4110B		Not Required	1/21/2014	CH
Aluminum	15.33	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Aluminum, Dissolved	14.81	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Calcium, Dissolved	40.12	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Iron	0.12	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Iron, Dissolved	0.29	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Manganese	9.74	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Manganese, Dissolved	9.23	mg/L	EPA 200.7		Not Required	1/20/2014	DW

One or Some Dissolved Metals exceed the Total Metals. This data has been verified.

Qualifiers

pH1 = Analyzed past hold time of 15 minutes.

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Date Reported: 1/29/2014
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Date Approved: 1/28/2014 3:04:34 PM

Lab Sample No.: 1401154-007	Sample ID: Fossil Rock Final Outfall	Description:					
Sampler: brs, gam	Date Sampled: 1/14/2014	Matrix: Surface Water					
Test	Result	Units	Method	Qlf.	Prep Date	Test Date	Analyst
Acidity	57	mg CaCO3/L	SM 2310B		Not Required	1/21/2014	BC
Alkalinity	14	mg CaCO3/L	SM 2320B		Not Required	1/21/2014	BC
pH	4.5	pH Units	SM 4500B	pH1	Not Required	1/21/2014	BC
Sulfate	169	mg/L	SM 4110B		Not Required	1/21/2014	CH
Aluminum	5.13	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Aluminum, Dissolved	4.80	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Calcium, Dissolved	19.87	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Iron	<0.05	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Iron, Dissolved	<0.05	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Manganese	4.61	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Manganese, Dissolved	4.35	mg/L	EPA 200.7		Not Required	1/20/2014	DW

Qualifiers

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Lab Sample No.:	1401154-008	Sample ID:	Mine Drift VFW Outfall	Description:			
Sampler:	brs, gam	Date Sampled:	1/15/2014	Matrix:	Surface Water		
Test	Result	Units	Method	Qlf.	Prep Date	Test Date	Analyst
Alkalinity	7	mg CaCO3/L	SM 2320B		Not Required	1/21/2014	BC
Acidity	149	mg CaCO3/L	SM 2310B		Not Required	1/21/2014	BC
Sulfate	677	mg/L	SM 4110B		Not Required	1/21/2014	CH
Chloride	<2.0	mg/L	SM 4110B		Not Required	1/21/2014	CH
pH	4.4	pH Units	SM 4500B	pH1	Not Required	1/21/2014	BC
Ferrous Iron	2.11	mg/L	SM 3500-Fe B		Not Required	1/17/2014	HW
Aluminum	15.44	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Aluminum, Dissolved	13.51	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Calcium, Dissolved	146.0	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Iron	9.96	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Iron, Dissolved	6.08	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Potassium, Dissolved	1.94	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Magnesium, Dissolved	57.92	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Manganese	14.56	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Manganese, Dissolved	13.75	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Sodium, Dissolved	0.90	mg/L	EPA 200.7		Not Required	1/20/2014	DW



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Lab Sample No.: 1401154-008	Sample ID: Mine Drift VFW Outfall	Description:					
Sampler: brs, gam	Date Sampled: 1/15/2014	Matrix: Surface Water					
Test	Result	Units	Method	Qlf.	Prep Date	Test Date	Analyst

Qualifiers

pH1 = Analyzed past hold time of 15 minutes.

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Lab Sample No.:	1401154-009	Sample ID:	Chiller Raw AMD	Description:			
Sampler:	brs, gam	Date Sampled:	1/15/2014	Matrix:	Ground Water		
Test	Result	Units	Method	Qlf.	Prep Date	Test Date	Analyst
Alkalinity	0	mg CaCO3/L	SM 2320B		Not Required	1/21/2014	BC
Acidity	368	mg CaCO3/L	SM 2310B		Not Required	1/21/2014	BC
Sulfate	652	mg/L	SM 4110B		Not Required	1/21/2014	CH
Chloride	<2.0	mg/L	SM 4110B		Not Required	1/21/2014	CH
pH	2.8	pH Units	SM 4500B	pH1	Not Required	1/21/2014	BC
Ferrous Iron	0.26	mg/L	SM 3500-Fe B		Not Required	1/17/2014	HW
Aluminum	33.99	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Aluminum, Dissolved	31.56	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Calcium, Dissolved	40.08	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Iron	7.38	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Iron, Dissolved	7.00	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Potassium, Dissolved	1.81	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Magnesium, Dissolved	51.65	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Manganese	13.61	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Manganese, Dissolved	13.07	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Sodium, Dissolved	0.89	mg/L	EPA 200.7		Not Required	1/20/2014	DW



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Lab Sample No.: 1401154-009	Sample ID: Chiller Raw AMD	Description:					
Sampler: brs, gam	Date Sampled: 1/15/2014	Matrix: Ground Water					
Test	Result	Units	Method	Qlf.	Prep Date	Test Date	Analyst

Qualifiers

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Lab Sample No.:	Sample ID:	Chiller System	Standby Pond	Description:				
1401154-010		Outfall						
Sampler:	Date Sampled:	Method	Matrix:	Qlf.	Prep Date	Test Date	Analyst	
brs, gam	1/15/2014	SM 2310B	Surface Water					
Test	Result	Units	Method	Qlf.	Prep Date	Test Date	Analyst	
Acidity	256	mg CaCO3/L	SM 2310B		Not Required	1/21/2014	BC	
Alkalinity	0	mg CaCO3/L	SM 2320B		Not Required	1/21/2014	BC	
pH	3.3	pH Units	SM 4500B	pH1	Not Required	1/21/2014	BC	
Sulfate	569	mg/L	SM 4110B		Not Required	1/21/2014	CH	
Aluminum	26.67	mg/L	EPA 200.7		Not Required	1/20/2014	DW	
Aluminum, Dissolved	25.22	mg/L	EPA 200.7		Not Required	1/20/2014	DW	
Calcium, Dissolved	59.81	mg/L	EPA 200.7		Not Required	1/20/2014	DW	
Iron	3.40	mg/L	EPA 200.7		Not Required	1/20/2014	DW	
Iron, Dissolved	3.23	mg/L	EPA 200.7		Not Required	1/20/2014	DW	
Manganese	12.14	mg/L	EPA 200.7		Not Required	1/20/2014	DW	
Manganese, Dissolved	11.61	mg/L	EPA 200.7		Not Required	1/20/2014	DW	

Qualifiers

pH1 = Analyzed past hold time of 15 minutes.

Approved By Carlton R. McCracken, Jr.
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Certificate of Analysis

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Project: TU TAG Cold Stream AMD
Date Reported: 1/29/2014
Date Received: 1/15/2014 2:00:00 PM
Date Approved: 1/28/2014 3:04:34 PM

Lab Sample No.:	1401154-011	Sample ID:	Chiller System VFW Outfall	Description:			
Sampler:	brs, gam	Date Sampled:	1/15/2014	Matrix:	Surface Water		
Test	Result	Units	Method	Qlf.	Prep Date	Test Date	Analyst
Alkalinity	0	mg CaCO3/L	SM 2320B		Not Required	1/21/2014	BC
Acidity	302	mg CaCO3/L	SM 2310B		Not Required	1/21/2014	BC
Sulfate	623	mg/L	SM 4110B		Not Required	1/21/2014	CH
Chloride	<2.0	mg/L	SM 4110B		Not Required	1/21/2014	CH
pH	3.1	pH Units	SM 4500B	pH1	Not Required	1/21/2014	BC
Ferrous Iron	0.43	mg/L	SM 3500-Fe B		Not Required	1/17/2014	HW
Aluminum	34.35	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Aluminum, Dissolved	31.08	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Calcium, Dissolved	57.88	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Iron	4.37	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Iron, Dissolved	4.12	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Potassium, Dissolved	1.78	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Magnesium, Dissolved	50.23	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Manganese	12.60	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Manganese, Dissolved	12.19	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Sodium, Dissolved	0.81	mg/L	EPA 200.7		Not Required	1/20/2014	DW



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Date Approved: 1/28/2014 3:04:34 PM

Lab Sample No.: 1401154-011	Sample ID:	Chiller System VFW Outfall	Description:				
Sampler: brs, gam	Date Sampled:	1/15/2014	Matrix: Surface Water				
Test	Result	Units	Method	Qlf.	Prep Date	Test Date	Analyst

Qualifiers

pH1 = Analyzed past hold time of 15 minutes.

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Date Approved: 1/28/2014 3:04:34 PM

Lab Sample No.:	Sample ID:	Chiller System	Final Outfall	Description:			
1401154-012							
Sampler:	Date Sampled:	Matrix:					
brs, gam	1/15/2014	Surface Water					
Test	Result	Units	Method	Qlf.	Prep Date	Test Date	Analyst
Acidity	248	mg CaCO3/L	SM 2310B		Not Required	1/21/2014	BC
Alkalinity	0	mg CaCO3/L	SM 2320B		Not Required	1/21/2014	BC
pH	3.4	pH Units	SM 4500B	pH1	Not Required	1/21/2014	BC
Sulfate	565	mg/L	SM 4110B		Not Required	1/21/2014	CH
Aluminum	26.41	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Aluminum, Dissolved	25.25	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Calcium, Dissolved	58.58	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Iron	3.20	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Iron, Dissolved	3.00	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Manganese	12.12	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Manganese, Dissolved	11.50	mg/L	EPA 200.7		Not Required	1/20/2014	DW

Qualifiers

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Date Reported: 1/29/2014
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Date Approved: 1/28/2014 3:04:34 PM

Lab Sample No.: 1401154-013	Sample ID: Turtle Spring	Description:					
Sampler: brs, gam	Date Sampled: 1/15/2014	Matrix: Surface Water					
Test	Result	Units	Method	Qlf.	Prep Date	Test Date	Analyst
Acidity	26	mg CaCO3/L	SM 2310B		Not Required	1/21/2014	BC
Alkalinity	6	mg CaCO3/L	SM 2320B		Not Required	1/21/2014	BC
pH	4.8	pH Units	SM 4500B	pH1	Not Required	1/21/2014	BC
Sulfate	41	mg/L	SM 4110B		Not Required	1/21/2014	CH
Aluminum	0.41	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Aluminum, Dissolved	0.48	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Calcium, Dissolved	12.83	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Iron	<0.05	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Iron, Dissolved	<0.05	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Manganese	0.29	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Manganese, Dissolved	0.33	mg/L	EPA 200.7		Not Required	1/20/2014	DW

One or Some Dissolved Metals exceed the Total Metals. This data has been verified.

Qualifiers

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Lab Sample No.: 1401154-014	Sample ID:	Project to ditch Upstream		Description:			
Sampler: brs, gam	Date Sampled:	1/15/2014		Matrix:	Surface Water		
Test	Result	Units	Method	Qlf.	Prep Date	Test Date	Analyst
Acidity	99	mg CaCO3/L	SM 2310B		Not Required	1/21/2014	BC
Alkalinity	0	mg CaCO3/L	SM 2320B		Not Required	1/21/2014	BC
pH	3.7	pH Units	SM 4500B	pH1	Not Required	1/21/2014	BC
Sulfate	213	mg/L	SM 4110B		Not Required	1/21/2014	CH
Aluminum	8.43	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Aluminum, Dissolved	7.93	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Calcium, Dissolved	25.35	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Iron	1.33	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Iron, Dissolved	1.22	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Manganese	9.24	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Manganese, Dissolved	8.85	mg/L	EPA 200.7		Not Required	1/20/2014	DW

Qualifiers

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Date Reported: 1/29/2014
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Date Approved: 1/28/2014 3:04:34 PM

Lab Sample No.: 1401154-015	Sample ID: Soccer Field AMD Seep	Description:					
Sampler: brs, gam	Date Sampled: 1/15/2014	Matrix: Ground Water					
Test	Result	Units	Method	Qlf.	Prep Date	Test Date	Analyst
Acidity	73	mg CaCO3/L	SM 2310B		Not Required	1/21/2014	BC
Alkalinity	27	mg CaCO3/L	SM 2320B		Not Required	1/21/2014	BC
pH	5.7	pH Units	SM 4500B	pH1	Not Required	1/21/2014	BC
Sulfate	335	mg/L	SM 4110B		Not Required	1/21/2014	CH
Aluminum	<0.05	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Aluminum, Dissolved	<0.05	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Calcium, Dissolved	92.45	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Iron	68.49	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Iron, Dissolved	64.84	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Manganese	2.70	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Manganese, Dissolved	2.59	mg/L	EPA 200.7		Not Required	1/20/2014	DW

Qualifiers

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Date Reported: 1/29/2014
Date Received: 1/15/2014 2:00:00 PM
Date Approved: 1/28/2014 3:04:34 PM

Lab Sample No.:	Sample ID:	PennDot Wetland Sys. LS Pon		Description:				
1401154-016								
Sampler:	Date Sampled:	Matrix:						
brs, gam	1/15/2014	Surface Water						
Test	Result	Units	Method	Qlf.	Prep Date	Test Date	Analyst	
Alkalinity	0	mg CaCO3/L	SM 2320B		Not Required	1/21/2014	BC	
Acidity	511	mg CaCO3/L	SM 2310B		Not Required	1/21/2014	BC	
Sulfate	905	mg/L	SM 4110B		Not Required	1/21/2014	CH	
Chloride	5.1	mg/L	SM 4110B		Not Required	1/21/2014	CH	
pH	2.9	pH Units	SM 4500B	pH1	Not Required	1/21/2014	BC	
Ferrous Iron	0.97	mg/L	SM 3500-Fe B		Not Required	1/17/2014	HW	
Aluminum	50.74	mg/L	EPA 200.7		Not Required	1/20/2014	DW	
Aluminum, Dissolved	49.75	mg/L	EPA 200.7		Not Required	1/20/2014	DW	
Calcium, Dissolved	68.76	mg/L	EPA 200.7		Not Required	1/20/2014	DW	
Iron	24.87	mg/L	EPA 200.7		Not Required	1/20/2014	DW	
Iron, Dissolved	23.66	mg/L	EPA 200.7		Not Required	1/20/2014	DW	
Potassium, Dissolved	1.59	mg/L	EPA 200.7		Not Required	1/20/2014	DW	
Magnesium, Dissolved	79.31	mg/L	EPA 200.7		Not Required	1/20/2014	DW	
Manganese	10.93	mg/L	EPA 200.7		Not Required	1/20/2014	DW	
Manganese, Dissolved	10.38	mg/L	EPA 200.7		Not Required	1/20/2014	DW	
Sodium, Dissolved	4.83	mg/L	EPA 200.7		Not Required	1/20/2014	DW	



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Date Reported: 1/29/2014
Date Received: 1/15/2014 2:00:00 PM
Date Approved: 1/28/2014 3:04:34 PM

Lab Sample No.: 1401154-016	Sample ID:	PennDot Wetland Sys. LS Pon		Description:				
Sampler: brs, gam	Date Sampled:	1/15/2014	Outfall	Matrix:	Surface Water			
Test	Result	Units	Method	Qlf.	Prep Date	Test Date	Analyst	

Qualifiers

pH1 = Analyzed past hold time of 15 minutes.

Approved By Carlton R. McCracken, Jr.
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Project: TU TAG Cold Stream AMD
Date Reported: 1/29/2014
Date Received: 1/15/2014 2:00:00 PM
Date Approved: 1/28/2014 3:04:34 PM

Lab Sample No.: 1401154-017	Sample ID: L5 Channel to PennDot Wetlan	Description:					
Sampler: brs, gam	Date Sampled: 1/15/2014	Matrix: Surface Water					
Test	Result	Units	Method	Qlf.	Prep Date	Test Date	Analyst
Acidity	474	mg CaCO3/L	SM 2310B		Not Required	1/21/2014	BC
Alkalinity	0	mg CaCO3/L	SM 2320B		Not Required	1/21/2014	BC
pH	2.9	pH Units	SM 4500B	pH1	Not Required	1/21/2014	BC
Sulfate	973	mg/L	SM 4110B		Not Required	1/21/2014	CH
Aluminum	50.44	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Aluminum, Dissolved	47.14	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Calcium, Dissolved	74.36	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Iron	22.59	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Iron, Dissolved	21.51	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Manganese	11.63	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Manganese, Dissolved	11.00	mg/L	EPA 200.7		Not Required	1/20/2014	DW

Qualifiers

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Date Reported: 1/29/2014
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Date Approved: 1/28/2014 3:04:34 PM

Lab Sample No.: 1401154-018	Sample ID: Cold Stream VP Stream	Description:					
Sampler: brs, gam	Date Sampled: 1/15/2014	Matrix: Surface Water					
Test	Result	Units	Method	Qlf.	Prep Date	Test Date	Analyst
Acidity	1394	mg CaCO3/L	SM 2310B		Not Required	1/21/2014	BC
Alkalinity	0	mg CaCO3/L	SM 2320B		Not Required	1/21/2014	BC
pH	1.8	pH Units	SM 4500B	pH1	Not Required	1/21/2014	BC
Sulfate	113	mg/L	SM 4110B		Not Required	1/23/2014	CH
Aluminum	0.06	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Aluminum, Dissolved	0.06	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Calcium, Dissolved	5.27	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Iron	0.07	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Iron, Dissolved	<0.05	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Manganese	0.03	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Manganese, Dissolved	0.07	mg/L	EPA 200.7		Not Required	1/20/2014	DW



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Lab Sample No.: 1401154-018	Sample ID: Cold Stream VP Stream	Description:					
Sampler: brs, gam	Date Sampled: 1/15/2014	Matrix: Surface Water					
Test	Result	Units	Method	Qlf.	Prep Date	Test Date	Analyst

As one reviews the parameter results for the "Cold Stream VP Stream" sample, it can be seen that a pH of 1.8 and Acidity of 1394 should have high metals being taken from a stream but the metals results are very low. Upon further investigation, it seems that both bottles, one for metals and the other for pH, alkalinity, acidity, etc. were acidified. Thus the parameters analyzed from the bottle that was acidified which should not have been acidified, pH, Alkalinity, Acidity, and Sulfate are not indicative of the original environmental sample. The large bottle actually was labeled "Cold Stream Upstream, 1/15/14, T. Metals" on the back of the bottle which was not the metals bottle.

Qualifiers

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Date Reported: 1/29/2014
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Date Approved: 1/28/2014 3:04:34 PM

Lab Sample No.:	1401154-019	Sample ID:	Blue Pipe AMD	Description:			
Sampler:	brs, gam	Date Sampled:	1/15/2014	Matrix:	Ground Water		
Test	Result	Units	Method	Qlf.	Prep Date	Test Date	Analyst
Alkalinity	0	mg CaCO3/L	SM 2320B		Not Required	1/21/2014	BC
Acidity	412	mg CaCO3/L	SM 2310B		Not Required	1/21/2014	BC
Sulfate	483	mg/L	SM 4110B		Not Required	1/21/2014	CH
Chloride	25.7	mg/L	SM 4110B		Not Required	1/21/2014	CH
pH	2.7	pH Units	SM 4500B	pH1	Not Required	1/21/2014	BC
Ferrous Iron	0.80	mg/L	SM 3500-Fe B		Not Required	1/17/2014	HW
Aluminum	23.45	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Aluminum, Dissolved	23.01	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Calcium, Dissolved	31.59	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Iron	41.55	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Iron, Dissolved	39.73	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Potassium, Dissolved	1.09	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Magnesium, Dissolved	28.27	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Manganese	3.94	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Manganese, Dissolved	3.84	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Sodium, Dissolved	16.98	mg/L	EPA 200.7		Not Required	1/20/2014	DW



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Date Approved: 1/28/2014 3:04:34 PM

Lab Sample No.: 1401154-019	Sample ID: Blue Pipe AMD	Description:					
Sampler: brs, gam	Date Sampled: 1/15/2014	Matrix: Ground Water					
Test	Result	Units	Method	Qlf.	Prep Date	Test Date	Analyst

Qualifiers
pH1 = Analyzed past hold time of 15 minutes.

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Lab Sample No.: 1401154-020	Sample ID: Project to Ditch @ mouth	Description:					
Sampler: brs, gam	Date Sampled: 1/15/2014	Matrix: Surface Water					
Test	Result	Units	Method	Qlf.	Prep Date	Test Date	Analyst
Acidity	144	mg CaCO3/L	SM 2310B		Not Required	1/21/2014	BC
Alkalinity	0	mg CaCO3/L	SM 2320B		Not Required	1/21/2014	BC
pH	3.2	pH Units	SM 4500B	pH1	Not Required	1/21/2014	BC
Sulfate	267	mg/L	SM 4110B		Not Required	1/21/2014	CH
Aluminum	9.42	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Aluminum, Dissolved	9.04	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Calcium, Dissolved	32.73	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Iron	19.11	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Iron, Dissolved	18.00	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Manganese	5.24	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Manganese, Dissolved	4.95	mg/L	EPA 200.7		Not Required	1/20/2014	DW

Qualifiers

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Harrisburg, PA 17111

Project: TU TAG Cold Stream AMD
Date Reported: 1/29/2014
Date Received: 1/15/2014 2:00:00 PM
Date Approved: 1/28/2014 3:04:34 PM

Lab Sample No.: 1401154-021	Sample ID: Cold Stream Downstream	Description:					
Sampler: brs, gam	Date Sampled: 1/15/2014	Matrix: Surface Water					
Test	Result	Units	Method	Qlf.	Prep Date	Test Date	Analyst
Acidity	18	mg CaCO3/L	SM 2310B		Not Required	1/21/2014	BC
Alkalinity	7	mg CaCO3/L	SM 2320B		Not Required	1/21/2014	BC
pH	5.2	pH Units	SM 4500B	pH1	Not Required	1/21/2014	BC
Sulfate	33	mg/L	SM 4110B		Not Required	1/21/2014	CH
Aluminum	0.71	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Aluminum, Dissolved	0.26	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Calcium, Dissolved	7.60	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Iron	1.56	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Iron, Dissolved	0.84	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Manganese	0.38	mg/L	EPA 200.7		Not Required	1/20/2014	DW
Manganese, Dissolved	0.38	mg/L	EPA 200.7		Not Required	1/20/2014	DW

Qualifiers

pH1 = Analyzed past hold time of 15 minutes.

Approved By Carlton R. McCracken, Jr.
Carlton R. McCracken, Jr. Chemist

January 30, 2014

Mr. Brad Shultz
Skelly and Loy, Inc.
449 Eisenhower Boulevard
Suite 300
Harrisburg, PA 17111

Certificate of Analysis

Project Name:	TU TAG Cold Stream	Workorder:	1067622
Purchase Order:	R10-0471.015	Workorder ID:	TU TAG Cold Stream

Dear Mr. Shultz,

Enclosed are the analytical results for samples received by the laboratory on Thursday, January 16, 2014.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

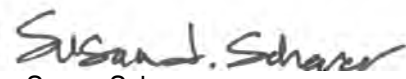
If you have any questions regarding this certificate of analysis, please contact Susan Scherer (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

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ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.


Susan Scherer
Project Coordinator

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SAMPLE SUMMARY

Workorder: 1067622 TU TAG Cold Stream

Discard Date: 02/13/2014

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
1067622001	Mine Drift Raw AMD	Water	1/14/14 15:13	1/16/14 08:50	Brad Shultz
1067622002	Mine Drift VFW Outfall	Water	1/15/14 09:12	1/16/14 08:50	Brad Shultz
1067622003	Stomp Raw AMD	Water	1/14/14 15:46	1/16/14 08:50	Brad Shultz
1067622004	Stomp LS Pond Outfall	Water	1/14/14 16:30	1/16/14 08:50	Brad Shultz
1067622005	Chiller Raw AMD	Water	1/15/14 09:45	1/16/14 08:50	Brad Shultz
1067622006	Chiller System VFW Outfall	Water	1/15/14 10:38	1/16/14 08:50	Brad Shultz
1067622007	PennDOt Wetland Sys LS Pond Ou	Water	1/15/14 14:38	1/16/14 08:50	Brad Shultz
1067622008	Blue Pipe AMD	Water	1/15/14 15:20	1/16/14 08:50	Brad Shultz

Workorder Comments:

Notes

- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are performed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix "S" followed by a method number (such as S2310B-97) refer to methods from "Standard Methods for the Examination of Water and Wastewater".

Standard Acronyms/Flags

J, B	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference

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ANALYTICAL RESULTS

Workorder: 1067622 TU TAG Cold Stream

Lab ID: **1067622001**

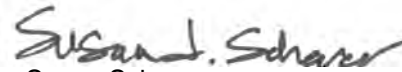
Date Collected: 1/14/2014 15:13

Matrix: Water

Sample ID: **Mine Drift Raw AMD**

Date Received: 1/16/2014 08:50

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	Cntr
WET CHEMISTRY									
Total Carbon	2.7		mg/L	1.0	S5310B-00		1/22/14 13:22	PAG	A
Total Inorganic Carbon	1.5		mg/L	1.0	S5310B-00		1/30/14 12:27	JWB	A
Total Organic Carbon (TOC)	1.2		mg/L	1.0	S5310B-00		1/20/14 11:08	PAG	C

Sample Comments:


Susan Scherer
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 1067622 TU TAG Cold Stream

Lab ID: **1067622003**
Sample ID: **Stomp Raw AMD**

Date Collected: 1/14/2014 15:46 Matrix: Water
Date Received: 1/16/2014 08:50

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	Cntr
WET CHEMISTRY									
Total Carbon	4.9		mg/L	1.0	S5310B-00		1/22/14 13:22	PAG	A
Total Inorganic Carbon	1.3		mg/L	1.0	S5310B-00		1/30/14 12:27	JWB	A
Total Organic Carbon (TOC)	3.6		mg/L	1.0	S5310B-00		1/20/14 11:08	PAG	C

Sample Comments:

Susan J. Scherer
Susan Scherer
Project Coordinator

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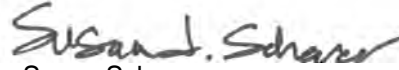
ANALYTICAL RESULTS

Workorder: 1067622 TU TAG Cold Stream

Lab ID: **1067622005**
Sample ID: **Chiller Raw AMD**

Date Collected: 1/15/2014 09:45 Matrix: Water
Date Received: 1/16/2014 08:50

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	Cntr
WET CHEMISTRY									
Total Carbon	1.7		mg/L	1.0	S5310B-00		1/22/14 13:22	PAG	A
Total Inorganic Carbon	ND		mg/L	1.0	S5310B-00		1/30/14 12:27	JWB	A
Total Organic Carbon (TOC)	1.5		mg/L	1.0	S5310B-00		1/20/14 11:08	PAG	C

Sample Comments:

Susan Scherer
Project Coordinator

ALS Environmental Laboratory Locations Across North America

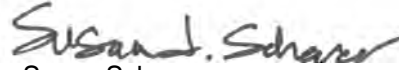
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ANALYTICAL RESULTS

Workorder: 1067622 TU TAG Cold Stream

Lab ID: **1067622007** Date Collected: 1/15/2014 14:38 Matrix: Water
Sample ID: **PennDot Wetland Sys LS Pond Ou** Date Received: 1/16/2014 08:50

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	Cntr
WET CHEMISTRY									
Total Carbon	2.9		mg/L	1.0	S5310B-00		1/22/14 13:22	PAG	A
Total Inorganic Carbon	1.7		mg/L	1.0	S5310B-00		1/30/14 12:27	JWB	A
Total Organic Carbon (TOC)	1.2		mg/L	1.0	S5310B-00		1/20/14 11:08	PAG	C

Sample Comments:

Susan Scherer
Project Coordinator

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ANALYTICAL RESULTS

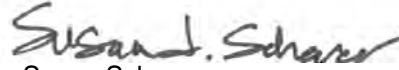
Workorder: 1067622 TU TAG Cold Stream

Lab ID: **1067622008**
Sample ID: **Blue Pipe AMD**

Date Collected: 1/15/2014 15:20 Matrix: Water
Date Received: 1/16/2014 08:50

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	Cntr
WET CHEMISTRY									
Total Carbon	2.2		mg/L	1.0	S5310B-00		1/22/14 13:22	PAG	A
Total Inorganic Carbon	ND		mg/L	1.0	S5310B-00		1/30/14 12:27	JWB	A
Total Organic Carbon (TOC)	2.2		mg/L	1.0	S5310B-00		1/20/14 11:08	PAG	C

Sample Comments:


Susan Scherer
Project Coordinator

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Certificate of Analysis

Skelly & Loy, Inc.
303 South High Street
PO Box 477
Port Matilda, PA 16870

Project: Cold Stream
Date Reported:
Date Received: 4/29/2014 6:30:00 AM
Date Approved: 5/7/2014 2:17:10 PM

Lab Sample No.: 1404283-001	Sample ID: Shotgun Raw	Description:					
Sampler: BRS	Date Sampled: 04/28/2014 10:30	Matrix:					
Test	Result	Units	Method	Qlf.	Prep Date	Test Date	Analyst
Acidity	431	mg CaCO3/L	SM 2310B		Not Required	5/1/2014	BC
Alkalinity	0	mg CaCO3/L	SM 2320B		Not Required	5/1/2014	BC
Chloride	16.2	mg/L	SM 4110B		Not Required	5/3/2014	CH
Sulfate	809	mg/L	SM 4110B		Not Required	5/3/2014	CH
Aluminum	39.58	mg/L	EPA 200.7		Not Required	5/1/2014	DW
Aluminum, Dissolved	37.37	mg/L	EPA 200.7		Not Required	5/1/2014	DW
Calcium, Dissolved	45.99	mg/L	EPA 200.7		Not Required	5/1/2014	DW
Iron	24.54	mg/L	EPA 200.7		Not Required	5/1/2014	DW
Iron, Dissolved	19.17	mg/L	EPA 200.7		Not Required	5/1/2014	DW
Potassium, Dissolved	1.45	mg/L	EPA 200.7		Not Required	5/1/2014	DW
Magnesium, Dissolved	57.58	mg/L	EPA 200.7		Not Required	5/1/2014	DW
Manganese	8.21	mg/L	EPA 200.7		Not Required	5/1/2014	DW
Manganese, Dissolved	8.00	mg/L	EPA 200.7		Not Required	5/1/2014	DW
Sodium, Dissolved	11.73	mg/L	EPA 200.7		Not Required	5/1/2014	DW



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Project: Cold Stream
Date Reported:
Date Received: 4/29/2014 6:30:00 AM
Date Approved: 5/7/2014 2:17:10 PM

Lab Sample No.: 1404283-001	Sample ID: Shotgun Raw	Description:
Sampler: BRS	Date Sampled: 04/28/2014 10:30	Matrix:

Test	Result	Units	Method	Qlf.	Prep Date	Test Date	Analyst
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Approved By 
Carlton R. McCracken, Jr. Chemist



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Project: Cold Stream
Date Reported:
Date Received: 4/29/2014 6:30:00 AM
Date Approved: 5/7/2014 2:17:10 PM

Lab Sample No.: 1404283-002	Sample ID:	LS Channel	Description:				
Sampler: BRS	Date Sampled: 04/28/2014 10:45		Matrix:				
Test	Result	Units	Method	Qlf.	Prep Date	Test Date	Analyst
Acidity	374	mg CaCO3/L	SM 2310B		Not Required	5/1/2014	BC
Alkalinity	0	mg CaCO3/L	SM 2320B		Not Required	5/1/2014	BC
Chloride	16.2	mg/L	SM 4110B		Not Required	5/3/2014	CH
Sulfate	777	mg/L	SM 4110B		Not Required	5/3/2014	CH
Aluminum	38.14	mg/L	EPA 200.7		Not Required	5/1/2014	DW
Aluminum, Dissolved	35.55	mg/L	EPA 200.7		Not Required	5/1/2014	DW
Calcium, Dissolved	59.54	mg/L	EPA 200.7		Not Required	5/1/2014	DW
Iron	19.97	mg/L	EPA 200.7		Not Required	5/1/2014	DW
Iron, Dissolved	18.70	mg/L	EPA 200.7		Not Required	5/1/2014	DW
Manganese	8.95	mg/L	EPA 200.7		Not Required	5/1/2014	DW
Manganese, Dissolved	8.65	mg/L	EPA 200.7		Not Required	5/1/2014	DW

Approved By Carlton R. McCracken, Jr.
Carlton R. McCracken, Jr. Chemist



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Project: Cold Stream
Date Reported:
Date Received: 4/29/2014 6:30:00 AM
Date Approved: 5/7/2014 2:17:10 PM

Lab Sample No.: 1404283-003	Sample ID: Mine Drift Final Outfall	Description:					
Sampler: BRS	Date Sampled: 04/28/2014 11:40	Matrix:					
Test	Result	Units	Method	Qlf.	Prep Date	Test Date	Analyst
Acidity	191	mg CaCO3/L	SM 2310B		Not Required	5/1/2014	BC
Alkalinity	0	mg CaCO3/L	SM 2320B		Not Required	5/1/2014	BC
Chloride	<2.0	mg/L	SM 4110B		Not Required	5/3/2014	CH
Sulfate	794	mg/L	SM 4110B		Not Required	5/6/2014	CH
Aluminum	18.87	mg/L	EPA 200.7		Not Required	5/1/2014	DW
Aluminum, Dissolved	17.84	mg/L	EPA 200.7		Not Required	5/1/2014	DW
Calcium, Dissolved	57.60	mg/L	EPA 200.7		Not Required	5/1/2014	DW
Iron	5.78	mg/L	EPA 200.7		Not Required	5/1/2014	DW
Iron, Dissolved	5.41	mg/L	EPA 200.7		Not Required	5/1/2014	DW
Manganese	9.67	mg/L	EPA 200.7		Not Required	5/1/2014	DW
Manganese, Dissolved	9.19	mg/L	EPA 200.7		Not Required	5/1/2014	DW

Approved By Carlton R. McCracken, Jr.
Carlton R. McCracken, Jr. Chemist



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Project: Cold Stream
Date Reported:
Date Received: 4/29/2014 6:30:00 AM
Date Approved: 5/7/2014 2:17:10 PM

Lab Sample No.: 1404283-004	Sample ID: Stump Final Outfall	Description:					
Sampler: BRS	Date Sampled: 04/28/2014 12:02	Matrix:					
Test	Result	Units	Method	Qlf.	Prep Date	Test Date	Analyst
Acidity	123	mg CaCO3/L	SM 2310B		Not Required	5/1/2014	BC
Alkalinity	6	mg CaCO3/L	SM 2320B		Not Required	5/1/2014	BC
Chloride	2.1	mg/L	SM 4110B		Not Required	5/3/2014	CH
Sulfate	403	mg/L	SM 4110B		Not Required	5/3/2014	CH
Aluminum	16.11	mg/L	EPA 200.7		Not Required	5/1/2014	DW
Aluminum, Dissolved	15.85	mg/L	EPA 200.7		Not Required	5/1/2014	DW
Calcium, Dissolved	42.55	mg/L	EPA 200.7		Not Required	5/1/2014	DW
Iron	0.27	mg/L	EPA 200.7		Not Required	5/1/2014	DW
Iron, Dissolved	0.13	mg/L	EPA 200.7		Not Required	5/1/2014	DW
Manganese	9.72	mg/L	EPA 200.7		Not Required	5/1/2014	DW
Manganese, Dissolved	9.27	mg/L	EPA 200.7		Not Required	5/1/2014	DW

Approved By Carlton R. McCracken, Jr.
Carlton R. McCracken, Jr. Chemist



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Project: Cold Stream
Date Reported:
Date Received: 4/29/2014 6:30:00 AM
Date Approved: 5/7/2014 2:17:10 PM

Lab Sample No.: 1404283-005	Sample ID: AMD to project 70	Description:					
Sampler: BRS	Date Sampled: 04/28/2014 12:56	Matrix:					
Test	Result	Units	Method	Qlf.	Prep Date	Test Date	Analyst
Acidity	49	mg CaCO3/L	SM 2310B		Not Required	5/1/2014	BC
Alkalinity	1	mg CaCO3/L	SM 2320B		Not Required	5/1/2014	BC
Chloride	17.8	mg/L	SM 4110B		Not Required	5/3/2014	CH
Sulfate	118	mg/L	SM 4110B		Not Required	5/3/2014	CH
Aluminum	4.41	mg/L	EPA 200.7		Not Required	5/1/2014	DW
Aluminum, Dissolved	4.28	mg/L	EPA 200.7		Not Required	5/1/2014	DW
Calcium, Dissolved	12.92	mg/L	EPA 200.7		Not Required	5/1/2014	DW
Iron	0.09	mg/L	EPA 200.7		Not Required	5/1/2014	DW
Iron, Dissolved	0.08	mg/L	EPA 200.7		Not Required	5/1/2014	DW
Potassium, Dissolved	2.02	mg/L	EPA 200.7		Not Required	5/1/2014	DW
Magnesium, Dissolved	12.89	mg/L	EPA 200.7		Not Required	5/1/2014	DW
Manganese	3.12	mg/L	EPA 200.7		Not Required	5/1/2014	DW
Manganese, Dissolved	3.08	mg/L	EPA 200.7		Not Required	5/1/2014	DW
Sodium, Dissolved	9.62	mg/L	EPA 200.7		Not Required	5/1/2014	DW



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303 South High Street
PO Box 477
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Project: Cold Stream
Date Reported:
Date Received: 4/29/2014 6:30:00 AM
Date Approved: 5/7/2014 2:17:10 PM

Lab Sample No.: 1404283-005	Sample ID: AMD to project 70	Description:
Sampler: BRS	Date Sampled: 04/28/2014 12:56	Matrix:

Test	Result	Units	Method	Qlf.	Prep Date	Test Date	Analyst
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Approved By 
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Project: Cold Stream
Date Reported:
Date Received: 4/29/2014 6:30:00 AM
Date Approved: 5/7/2014 2:17:10 PM

Lab Sample No.: 1404283-006	Sample ID: Chiller Final Outfall	Description:					
Sampler: BRS	Date Sampled: 04/28/2014 12:22	Matrix:					
Test	Result	Units	Method	Qlf.	Prep Date	Test Date	Analyst
Acidity	222	mg CaCO3/L	SM 2310B		Not Required	5/1/2014	BC
Alkalinity	0	mg CaCO3/L	SM 2320B		Not Required	5/1/2014	BC
Chloride	<2.0	mg/L	SM 4110B		Not Required	5/3/2014	CH
Sulfate	516	mg/L	SM 4110B		Not Required	5/3/2014	CH
Aluminum	23.09	mg/L	EPA 200.7		Not Required	5/1/2014	DW
Aluminum, Dissolved	21.80	mg/L	EPA 200.7		Not Required	5/1/2014	DW
Calcium, Dissolved	49.62	mg/L	EPA 200.7		Not Required	5/1/2014	DW
Iron	5.30	mg/L	EPA 200.7		Not Required	5/1/2014	DW
Iron, Dissolved	4.90	mg/L	EPA 200.7		Not Required	5/1/2014	DW
Manganese	9.80	mg/L	EPA 200.7		Not Required	5/1/2014	DW
Manganese, Dissolved	9.03	mg/L	EPA 200.7		Not Required	5/1/2014	DW

Approved By 
Carlton R. McCracken, Jr. Chemist



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Certificate of Analysis

Skelly & Loy, Inc.
303 South High Street
PO Box 477
Port Matilda, PA 16870

Project: Cold Stream
Date Reported:
Date Received: 4/29/2014 6:30:00 AM
Date Approved: 5/7/2014 2:17:10 PM

Lab Sample No.: 1404283-007	Sample ID: Artesian AMD	Description:
Sampler: BRS	Date Sampled: 04/28/2014 14:10	Matrix:

Test	Result	Units	Method	Qlf.	Prep Date	Test Date	Analyst
Acidity	421	mg CaCO3/L	SM 2310B		Not Required	5/1/2014	BC
Alkalinity	0	mg CaCO3/L	SM 2320B		Not Required	5/1/2014	BC
Chloride	31.0	mg/L	SM 4110B		Not Required	5/3/2014	CH
Sulfate	892	mg/L	SM 4110B		Not Required	5/3/2014	CH
Aluminum	14.58	mg/L	EPA 200.7		Not Required	5/1/2014	DW
Aluminum, Dissolved	14.14	mg/L	EPA 200.7		Not Required	5/1/2014	DW
Calcium, Dissolved	104.77	mg/L	EPA 200.7		Not Required	5/1/2014	DW
Iron	184.22	mg/L	EPA 200.7		Not Required	5/1/2014	DW
Iron, Dissolved	171.87	mg/L	EPA 200.7		Not Required	5/1/2014	DW
Potassium, Dissolved	5.00	mg/L	EPA 200.7		Not Required	5/1/2014	DW
Magnesium, Dissolved	48.24	mg/L	EPA 200.7		Not Required	5/1/2014	DW
Manganese	6.43	mg/L	EPA 200.7		Not Required	5/1/2014	DW
Manganese, Dissolved	6.19	mg/L	EPA 200.7		Not Required	5/1/2014	DW
Sodium, Dissolved	19.23	mg/L	EPA 200.7		Not Required	5/1/2014	DW



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Carlton R. McCracken, Jr. Chemist