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Memorandum

Prepared for: File
Project Title: Florence Copper
Project No.: 149050

Subject: Florence Copper Project, Temporary APP and UIC Permits, Ambient Events 8 and MW-01s 4 and 5
Date: May 17, 2018
To: Ian Ream
From: Barb Sylvester

Groundwater sampling at the Florence Copper Project site took place February 7 through February 9 and February 22, 2018. Twelve (12) Point-of-Compliance (POC) and Supplemental wells were sampled as part of the ambient monitoring program for the Temporary APP and UIC permits. Wells MW-01-LBF and MW-01-O were sampled twice during the month, fourteen days apart. Fifteen total samples were collected, including one duplicate sample. Table 1 summarizes the sampling activities.

Ambient samples were to be analyzed for metals, inorganics, organics, and radionuclides (Table 2). Samples for metal analysis were filtered in the field.

Table 1. Summary of February 2018 Ambient Event

Date	Sample Identification	Pump Style	Analyses
February 7, 2018	M54-LBF	Low-Flow	Level II
	M54-O	Low-Flow	Level II
	M58-O	Low-Flow	Level II
	M60-O	Low-Flow	Level II
February 8, 2018	M57-O	Low-Flow	Level II
	M59-O	Low-Flow	Level II
	MW-01-LBF	Low-Flow	Level II
	MW-01-O	Low-Flow	Level II
February 9, 2018	M52-UBF	Low-Flow	Level II

Table 1. Summary of February 2018 Ambient Event			
Date	Sample Identification	Pump Style	Analyses
February 9, 2018	M55-UBF	Low-Flow	Level II
	M56-LBF	Low-Flow	Level II
	M61-LFB	Electric	Level II
February 22, 2018	MW-01-LBF M63.0 (Duplicate)	Low-Flow	Level II
	MW-01-O	Low-Flow	Level II

Table 2. Analytical Parameters		
Analysis	Method	Preservative
Inorganic Common Ions		
pH (lab)	SM 4500H+	None
Electroconductivity (EC) (lab)	SM 2510B	None
Bicarbonate Alkalinity	SM 2320B	None
Carbonate Alkalinity	SM 2320B	None
Hydroxide Alkalinity	SM 2320B	None
Total Alkalinity	SM 2320B	None
Chloride	EPA 300.0	None
Fluoride (Level I)	EPA 300.0	None
Nitrate as N	EPA 300.0	None
Nitrite as N	EPA 300.0	None
Sulfate (Level I)	EPA 300.0	None
Total Dissolved Solids (Level I)	SM 2540C	None
Cation/Anion Balance	Calculation	-
Cyanide	EPA 335.4	NaOH
Formation-Related Radiochemicals		
Gross Alpha	600/00-02	None
Gross Beta	900.0	None
Radium 226	903/GammaRay HPGE	None
Radium 228	904/GammaRay HPGE	None
Total Uranium Isotopes (if G. Alpha >12.0)	ASTM 6239	None
Radon 222	7500-Rn	None (Voas)
Total Uranium (unfiltered total as mg/L)	EPA 200.8	HNO3
Process-Related Organics		
Extractable Fuel Hydrocarbons (Diesel Range Organics)	EPA 8015D	None

Table 2. Analytical Parameters		
Analysis	Method	Preservative
Benzene	EPA 8260B	HCl Voas
Ethylbenzene	EPA 8260B	HCl Voas
Toluene	EPA 8260B	HCl Voas
Total Xylene	EPA 8260B	HCl Voas
Carbon Disulfide	EPA 8260B	HCl Voas
Napthalene	EPA 8260B	HCl Voas
Octane	EPA 8260B	HCl Voas
Trace Metals and Cations (Filtered-Dissolved)		
Aluminum	EPA 200.8	HNO3
Antimony	EPA 200.8	HNO3
Arsenic	EPA 200.8	HNO3
Barium	EPA 200.8	HNO3
Beryllium	EPA 200.8	HNO3
Calcium	EPA 200.7	HNO3
Cadmium	EPA 200.8	HNO3
Chromium	EPA 200.8	HNO3
Cobalt	EPA 200.8	HNO3
Copper	EPA 200.8	HNO3
Iron	EPA 200.7	HNO3
Lead	EPA 200.8	HNO3
Magnesium (Level I)	EPA 200.7	HNO3
Manganese	EPA 200.8	HNO3
Mercury	EPA 245.1	HNO3
Nickel	EPA 200.8	HNO3
Potassium	EPA 200.7	HNO3
Selenium	EPA 200.8	HNO3
Sodium	EPA 200.7	HNO3
Thallium	EPA 200.8	HNO3
Zinc	EPA 200.8	HNO3

Observations/Problems

1. Wells MW-01-LBF and MW-01-O were sampled twice during the month, fourteen days apart.
2. M61-LBF was purged for slightly less than three casing volumes based on flow meter readings, however the purge volume based on purge rate and purge time was greater than three borehole volumes. This is not expected to affect sample quality.
3. Turbidity measurements above 5 NTUs were observed in MW-01-LBF and MW-01-O.

Table 3. Summary of Water Levels						
Sample Event:	Ambient Event 8, MW-01s 4&5				Measured By:	M. Orcutt
Well ID	Sample Date	Depth to Water (feet bls)	Description of Measuring Point	Elevation of Measuring Point (feet amsl)	Water Level Elevation (feet amsl)	Comments
M52-UBF	2/5/2018	229.75	TOC	1485.04	1255.29	
M52-UBF	2/9/2018	230.04	TOC	1485.04	1255.00	
M54-LBF	2/5/2018	230.54	TOC	1481.89	1251.35	
M54-LBF	2/7/2018	230.64	TOC	1481.89	1251.25	
M54-O	2/5/2018	232.50	TOC	1482.40	1249.90	
M54-O	2/7/2018	230.51	TOC	1482.40	1251.89	
M55-UBF	2/6/2018	227.55	TOC	1479.21	1251.66	
M55-UBF	2/9/2018	227.85	TOC	1479.21	1251.36	
M56-LBF	2/6/2018	227.80	TOC	1478.69	1250.89	
M56-LBF	2/9/2018	227.38	TOC	1478.69	1251.31	
M57-O	2/6/2018	227.15	TOC	1478.75	1251.60	
M57-O	2/8/2018	227.08	TOC	1478.75	1251.67	
M58-O	2/6/2018	229.61	TOC	1481.16	1251.55	
M58-O	2/7/2018	229.73	TOC	1481.16	1251.43	
M59-O	2/6/2018	229.23	TOC	1480.26	1251.03	
M59-O	2/8/2018	230.82	TOC	1480.26	1249.44	Sounder Issue
M60-O	2/6/2018	226.65	TOC	1477.45	1250.80	
M60-O	2/7/2018	226.88	TOC	1477.45	1250.57	
M61-LBF	2/6/2018	233.50	TOC	1480.80	1247.30	
M61-LBF	2/9/2018	233.50	TOC	1480.80	1247.30	
MW-01-LBF	2/6/2018	NM	TOC	NA	NA	Undergoing Testing
MW-01-LBF	2/8/2018	231.70	TOC	NA	NA	
MW-01-LBF	2/22/2018	224.14	TOC	NA	NA	
MW-01-O	2/6/2018	227.65	TOC	NA	NA	
MW-01-O	2/8/2018	228.58	TOC	NA	NA	
MW-01-O	2/22/2018	222.82	TOC	NA	NA	

amsl = Above Mean Sea Level

TOC = Top of Casing

TOM = Top of Monument

NM = Not Measured

Table 4. Summary of Field Parameters						
Sample Event:	Ambient Event 8, MW-01s 4&5		Measured By:	M. Orcutt		
Well ID	Sample Date	Temperature (°C)	pH	Conductivity (µmhos/cm)	Turbidity (NTU)	Comments
M52-UBF	2/9/2018	20.8	7.38	1,426	0.59	
M54-LBF	2/7/2018	22.0	7.28	1,481	0.98	
M54-O	2/7/2018	21.4	7.77	725	1.20	
M55-UBF	2/9/2018	22.5	7.02	1,480	1.72	
M56-LBF	2/9/2018	21.3	7.46	1,419	2.76	
M57-O	2/8/2018	21.0	7.67	840	1.51	
M58-O	2/7/2018	22.3	7.19	1,491	3.45	
M59-O	2/8/2018	22.8	7.66	868	0.75	
M60-O	2/7/2018	22.2	7.52	952	1.63	
M61-LBF	2/9/2018	26.9	8.05	748	1.28	
MW-01-LBF	2/8/2018	22.8	7.36	1,464	12.2	
MW-01-LBF	2/22/2018	21.7	7.48	1,473	10.87	
MW-01-O	2/8/2018	22.2	7.84	1,439	20.8	
MW-01-O	2/22/2018	21.1	7.63	1,397	3.49	

°C = degrees Celsius

°F = degrees Fahrenheit

µmhos/cm = Micromhos per Centimeter

NTU = Nephlometric Tubidity Units

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SITE VISITATION

JOB NAME: Florence Copper **JOB NUMBER:** 150342

PERSONNEL: M. Orcutt **DATE:** 2-5-2018
2-6-2018

COMMENTS:

(2/5) 0845 On site, spoke with Ian and Gregon
work week Scoper
Baseline well soundings today maybe into tomorrow
Deployed BC's 500' sounder between wells,

Completed old POC well soundings and started
new POC well soundings.
1500 Mob back to office and checked out
with Ian
OFF site, contacted Airgas re

(2/6) 0745 On site, spoke with Ian and loaded
QED equipment, Filters, and sample coolers,
Mob to Ambient POC wells to finish baseline
water levels then wait for Airgas to deliver Nitro

0900 Water levels completed, off site to
pick up supplies,
Waiting on Airgas.
1240 off site,
Airgas to deliver Nitrogen Today @ ? Time

Ed

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SITE VISITATION

JOB NAME: Florence Copper **JOB NUMBER:** 150342.301

PERSONNEL: M. Orait **DATE:** 2-7-2018

COMMENTS: 2/6/18 WL's

0705 On site, picked up Nitrogen, coolers, and QED equipment.
Mob to Ambient POC wells and warmed up BC's WQ meters for ABP Calibrations

0820 Sampled M54-0

0928 Sampled M54-LBF.
1020 Mob to next well and pH 7 check

11:08 Sampled M58-0
1150 Mob to office to plug Data sheets then short lunch and return.

1324 Sampled M60-0
1420 Mob back to shop and returned QED

1440 off site

End

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SITE VISITATION

JOB NAME: Florence Copper **JOB NUMBER:** 150342.301

PERSONNEL: M. Orcutt **DATE:** 2-8-2018

COMMENTS:

0705 On site, pick up coolers and QED equipment
Mob to wells and warmup RC's
WQ Meters for AFP calibrations

0824 Sampled M57-0
1014 Sampled MW-01-0
1135 Sampled MW-01-LBF
1230 Short lunch and switch Nitrogen out
1410 Sampled M59-0
Mob back to return QED and hand over
1515 samples to Xavier

1325 off site

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SITE VISITATION

JOB NAME: Florence Copper **JOB NUMBER:** 150342.301

PERSONNEL: M. Oncutt **DATE:** 2-9-2018

COMMENTS:

0700 On site, loaded up QED and coolers.
* 2-8-18 verified 3 coolers from Turner.
2-9-18 1 of 3 coolers w/ Level II for old POC's (No 5th set for Dup.).
Called Ian, he had already left Tucson, Will Dup MW-01's Next round.

Warmed up BC's WQ meters for ASP calibration

0810 Sampled M52-UBF
0943 Sampled M56-UBF
1100 Sampled M55-UBF
1150 Short lunch and return QED equip. and unload Nitrogen

Sampled M61
Samples to Ian.
1355 ~~off site~~ off site to Rad safety

Ed

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SITE VISITATION

JOB NAME: Florence Copper **JOB NUMBER:** 150342.301 (207)

PERSONNEL: M. Orcutt **DATE:** 2-22-2018

COMMENTS:

0745 On site after picking up supply,
Met with Ian and loaded up coolers
and QED equipment.
Mob to Ambient POC wells MW-01's and
warmed up BC's WQ meters for Calib.

0925 Sampled MW-01-0
1054 Sampled MW-01-LBF w/ Dup MB3.0 @ 11:15

1220 Short lunch and return to pumping well
P49-0
1323 Sampled P49-0
Mob to MZ-G4
1420 Sampled MZ-G4 w/ Dup M19.2 @ 1435
1440 Mob back to return Nitrogen and QED,
Samples to Ian 2 Amb + Dup
2 old POC + Dup
Samples to Rad Safety by B.C.
1530 Called off Nitrogen
off site

USED 7 200cf of 8
2 QED wells remain

End
2/22/18

WATER LEVELS – PILOT TEST MONITOR WELLS

Station ID	Measure Date	Depth to Water
MW-01-LBF *	~~2-6-18~~	
MW-01-O	2-6-18	227.65
M52-UBF	2-5-18	229.75
M54-LBF	2-5-18	230.54
M54-O	2-5-18	? 232.50 230.50 2/7/19
M55-UBF	2-6-18	227.55
M56-LBF		227.80
M57-O		227.15
M58-O		229.61
M59-O		229.23
M60-O		226.65
M61-LBF	2-6-18	233.50

Write NM if blocked, Dry if dry.
* Testing by H+A

Measured by: M. Orcutt
BC's 500' Sounder
= 0' Tape Correction

GROUNDWATER SAMPLING FIELD DATA

PROJECT: Florence Copper

WELL ID: M52-UBF

SAMPLED BY: M. Orcutt

DATE : 2/9/18

WELL INFORMATION

TD Casing: 275 feet 229.75

Static Depth to Water: 230.04 feet Static

System Purge before Params 2.6 liters (2/5/18

Time Purge Start: 0748 hours

Time Sample Start: 0810 hours

Time Purged: 22 minutes

Time	Temperature (°C) +/- 3%	pH +/- 0.1	EC (umhos/cm) +/- 3%	DO (mg/L) 10% or <.5	Turbidity (NTU) 10% or <5	Pump Rate (L/min) <0.5L/min	Purge Volume (L)	Pulldown DTW (feet) <0.5 ft	Comments QED Bladder Pump Intake 237.5'
0758	20.9	7.34	1431	5.45	0.56	0.30	3.0	0.00	clear, no odors
0801	20.9	7.36	1426	5.43	0.45	0.33	4.0	0.00	
0804	20.8	7.37	1428	5.32	0.33	0.33	5.0	0.00	
0807	20.8	7.35	1426	5.20	0.59	0.33	6.0	0.00	
									Low flow for
									VOC's

Sample ID: M52-UBF Sample Time, 0810 Duplicate (ID = N/A, Time N/A) Analyses Requested: Level II – Metals, Inorgs, Radios, BTEX, TPH-D

GROUNDWATER SAMPLING FIELD DATA

PROJECT: Florence Copper

WELL ID: M54-LBF

SAMPLED BY: M. Orcutt

DATE : 2/7/18

WELL INFORMATION

TD Casing: 630 feet

Static Depth to Water: 230.64 feet

System Purge before Params 3.9 liters

Time Purge Start: 0905 hours

Time Sample Start: 0928 hours

Time Purged: 23 minutes

Time	Temperature (°C) +/- 3%	pH +/- 0.1	EC (umhos/cm) +/- 3%	DO (mg/L) 10% or <.5	Turbidity (NTU) 10% or <5	Pump Rate (L/min) <0.5L/min	Purge Volume (L)	Pulldown DTW (feet) <0.5 ft	Comments QED Bladder Pump Intake 470'
0917	21.9	7.24	1478	3.82	1.04	0.33	4.0	0.00	Clear, No ODORS
0920	21.9	7.30	1483	3.30	1.94	0.33	5.0	0.00	
0923	21.9	7.28	1482	3.15	1.00	0.33	6.0	0.00	
0926	22.0	7.28	1481	3.02	0.98	0.33	7.0	0.00	
									Low flow for VOC's

Sample ID: M54-LBF Sample Time, 0928 Duplicate (ID = N/A, Time N/A) Analyses Requested: Level II – Metals, Inorgs, Radios, BTEX, TPH-D

GROUNDWATER SAMPLING FIELD DATA

PROJECT: Florence Copper

WELL ID: M54-O

SAMPLED BY: M. Orcutt

DATE : 2/7/18

WELL INFORMATION

TD Casing: 1,200 feet

Static Depth to Water: 230.51 feet

System Purge before Params 9.2 liters

Time Purge Start: 0737 hours

Time Sample Start: 0820 hours

Time Purged: 43 minutes

Time	Temperature (°C) +/- 3%	pH +/- 0.1	EC (umhos/cm) +/- 3%	DO (mg/L) 10% or <.5	Turbidity (NTU) 10% or <5	Pump Rate (L/min) <0.5L/min	Purge Volume (L)	Pulldown DTW (feet) <0.5 ft	Comments QED Bladder Pump Intake 1000'
0808	20.7	7.60	735	2.41	1.52	0.30	9.5	* 0.10	Clear, no odors
0812	21.0	7.69	730	2.00	1.40	0.25	10.5	0.15	
0815	21.4	7.76	725	1.74	1.37	0.33	11.5	0.20	
0818	21.4	7.77	725	1.63	1.20	0.33	12.5	0.25	* Probe issues
									Low flow for VOC's
									2,4,6,8

Sample ID: M54-O Sample Time, 0820 Duplicate (ID = N/A, Time N/A) Analyses Requested: Level II – Metals, Inorgs, Radios, BTEX, TPH-D

GROUNDWATER SAMPLING FIELD DATA

PROJECT: Florence Copper

WELL ID: M55-UBF

SAMPLED BY: M. Orcutt

DATE : 2/9 /18

WELL INFORMATION

TD Casing: 260 feet

Static Depth to Water: 227.85 feet 227.55 Static

System Purge before Params 2.8 liters

Time Purge Start: 1034 hours

Time Sample Start: 11:00 hours

Time Purged: 26 minutes

Time	Temperature (°C) +/- 3%	pH +/- 0.1	EC (umhos/cm) +/- 3%	DO (mg/L) 10% or <.5	Turbidity (NTU) 10% or <5	Pump Rate (L/min) <0.5L/min	Purge Volume (L)	Pulldown DTW (feet) <0.5 ft	Comments QED Bladder Pump Intake 250'
1046	22.5	7.02	1483	4.50	4.26	0.25	3.0	0.01	Clear, no odors
1049	22.5	7.02	1481	4.48	4.05	0.33	4.0	0.01	
1053	22.5	7.02	1480	4.46	2.87	0.25	5.0	0.01	
1057	22.5	7.02	1480	4.45	1.72	0.25	6.0	0.01	
									Low flow for VOCs

Sample ID: M55-UBF Sample Time, 1100 Duplicate (ID = N/A, Time N/A) Analyses Requested: Level II – Metals, Inorgs, Radios, BTEX, TPH-D

GROUNDWATER SAMPLING FIELD DATA

PROJECT: Florence Copper

WELL ID: M56-LBF

SAMPLED BY: M. Orcutt

DATE : 2/9/18

WELL INFORMATION

TD Casing: 340 feet

Static Depth to Water: 227.38 feet

System Purge before Params 2.4 liters

Time Purge Start: 0922 hours

Time Sample Start: 0943 hours

Time Purged: 21 minutes

Time	Temperature (°C) +/- 3%	pH +/- 0.1	EC (umhos/cm) +/- 3%	DO (mg/L) 10% or <.5	Turbidity (NTU) 10% or <5	Pump Rate (L/min) <0.5L/min	Purge Volume (L)	Pulldown DTW (feet) <0.5 ft	Comments QED Bladder Pump Intake 330'
0932	21.3	7.37	1404	1.09	3.84	0.30	3.0	0.00	Clear, No ODORS
0935	21.3	7.45	1418	0.89	3.14	0.33	4.0		
0938	21.2	7.46	1420	0.80	3.37	0.33	5.0		
0941	21.3	7.46	1419	0.72	2.76	0.33	6.0		
									Low flow for VOC's

Sample ID: M56-LFB Sample Time, 0943 Duplicate (ID = N/A, Time N/A) Analyses Requested: Level II – Metals, Inorgs, Radios, BTEX, TPH-D

GROUNDWATER SAMPLING FIELD DATA

PROJECT: Florence Copper

WELL ID: M57-O

SAMPLED BY: M. Orcutt

DATE : 2/8/18

WELL INFORMATION

TD Casing: 1,200 feet

Static Depth to Water: 227.08 feet

System Purge before Params 8.7 liters

Time Purge Start: ~~0739~~ 0742 hours

Time Sample Start: 0824 hours

Time Purged: 42 minutes

Time	Temperature (°C) +/- 3%	pH +/- 0.1	EC (umhos/cm) +/- 3%	DO (mg/L) 10% or <.5	Turbidity (NTU) 10% or <5	Pump Rate (L/min) <0.5L/min	Purge Volume (L)	Pulldown DTW (feet) <0.5 ft	Comments QED Bladder Pump Intake 950'
0812	20.8	7.51	839	1.92	3.66	0.30	9.0	0.47	Clear, No odors
0816	20.9	7.60	842	1.75	1.93	0.25	10.0	0.47	
0819	20.7	7.65	842	1.40	1.70	0.33	11.0	0.48	
0822	21.0	7.67	840	1.27	1.51	0.33	12.0	0.50	
									Low flow for VOCs
									2,4,6

Sample ID: M57-O Sample Time, 0824 Duplicate (ID = N/A, Time N/A) Analyses Requested: Level II – Metals, Inorgs, Radios, BTEX, TPH-D

GROUNDWATER SAMPLING FIELD DATA

PROJECT: Florence Copper

WELL ID: M58-O

SAMPLED BY: M. Orcutt

DATE : 2/7/18

WELL INFORMATION

TD Casing: 1,200 feet

Static Depth to Water: 229.73 feet

System Purge before Params 8.7 liters

Time Purge Start: 1028 hours

Time Sample Start: 1108 hours

Time Purged: 40 minutes

Time	Temperature (°C) +/- 3%	pH +/- 0.1	EC (umhos/cm) +/- 3%	DO (mg/L) 10% or <.5	Turbidity (NTU) 10% or <5	Pump Rate (L/min) <0.5L/min	Purge Volume (L)	Pulldown DTW (feet) <0.5 ft	Comments QED Bladder Pump Intake 950'
1057	22.3	7.17	1484	1.53	5.95	0.31	9.0	0.17	Clear, no odors
1100	22.3	7.19	1488	1.81	5.05	0.33	10.0	0.18	
1103	22.3	7.21	1490	1.79	4.25	0.33	11.0	0.18	
1106	22.3	7.19	1491	2.12	3.45	0.33	12.0	0.18	
									Low flow for VOCs
									7,4,6,8

Sample ID: M58-O Sample Time, 1108 Duplicate (ID = N/A, Time N/A) Analyses Requested: Level II – Metals, Inorgs, Radios, BTEX, TPH-D

GROUNDWATER SAMPLING FIELD DATA

PROJECT: Florence Copper

WELL ID: M59-O

227.70 w/ HA Heron Sounder

SAMPLED BY: M. Orcutt

DATE : 2/8/18

WELL INFORMATION

TD Casing: 1,200 feet Sounder Issue

Static Depth to Water: ~~231.18~~ feet ~~237.90'~~

System Purge before Params 8.7 liters 23.82

Time Purge Start: 1330 hours

Time Sample Start: 1410 hours

Time Purged: 40 minutes

Time	Temperature (°C) +/- 3%	pH +/- 0.1	EC (umhos/cm) +/- 3%	DO (mg/L) 10% or <.5	Turbidity (NTU) 10% or <5	Pump Rate (L/min) <0.5L/min	Purge Volume (L)	Pulldown DTW (feet) <0.5 ft	Comments QED Bladder Pump Intake 950'
1358	22.9	7.72	860	0.85	1.88	0.32	9.0	0.00	Clear, no odors
1401	22.8	7.70	862	0.72	1.20	0.33	10.0	↓	
1404	22.8	7.68	863	0.59	0.90	0.33	11.0		
1407	22.8	7.66	868	0.62	0.75	0.33	12.0		
									Low flow for VOCs
									2, 4, 6, 8

Sample ID: M59-O Sample Time, 1410 Duplicate (ID = N/A, Time N/A) Analyses Requested: Level II – Metals, Inorgs, Radios, BTEX, TPH-D

GROUNDWATER SAMPLING FIELD DATA

PROJECT: Florence Copper

WELL ID: M60-O

SAMPLED BY: M. Orcutt

DATE : 2/7/18

WELL INFORMATION

TD Casing: 1,200 feet

Static Depth to Water: 226.88 feet

System Purge before Params 8.7 liters

Time Purge Start: 1245 hours

Time Sample Start: 1324 hours

Time Purged: 39 minutes

Time	Temperature (°C) +/- 3%	pH +/- 0.1	EC (umhos/cm) +/- 3%	DO (mg/L) 10% or <.5	Turbidity (NTU) 10% or <5	Pump Rate (L/min) <0.5L/min	Purge Volume (L)	Pulldown DTW (feet) <0.5 ft	Comments QED Bladder Pump Intake 950'
1313	22.1	7.39	972	1.89	3.09	0.32	9.0	0.22	Clear, NO ODORS
1316	22.1	7.46	959	1.80	2.66	0.33	10.0	0.22	
1319	22.1	7.49	956	1.74	2.39	0.33	11.0	0.17	
1322	22.2	7.52	952	1.60	1.63	0.33	12.0	0.17	
									Low flow for VOC's
									2,4,6,8

Sample ID: M60-O Sample Time, 1324 Duplicate (ID = N/A, Time N/A) Analyses Requested: Level II – Metals, Inorgs, Radios, BTEX, TPH-D

GROUNDWATER SAMPLING FIELD DATA

PROJECT: Florence Copper

WELL ID: M61-LBF

SAMPLED BY: M. Orcutt

DATE : 2/9 /2018

WELL INFORMATION

TD Casing:	635	feet	Static Depth to Water:	233.50	feet
Screened Interval:	435-635	feet	Feet Water in Casing:	402	feet
Discharge Rate:		gpm (est)	Casing Capacity:	1.02	gal/ft
Estimated Purge Time:		minutes	3X Sand Pack Volume	864	gallons
Purge Start:	0812	hours	Purge Volume:	2093	gallons
Purge End:	1325	hours	Water Level at Sampling:	403	feet
Total Purge Time:	313	minutes			

Time	Temperature (°C)	pH	EC (umhos/cm)	DO (mg/L)	Turbidity (NTU)	Pump Rate (gpm)	Purged Volume (gallons)	Comments
	27.3	7.93 ~~7.75~~	751					
1310	10%	10%	10%	1.94	3.32	0.10		Clear, 1000 Dung FULL PUMP
1315	26.7	8.06	745	1.92	3.87			
1320	26.9	7.92	744	2.00	1.97			
1325	26.9	8.05	748	2.10	1.28		~1,132	After Sampling
								based on flow meter
							@1130 based on flow	
								635 - 233.50 = 401.5 x 1.02
								= 409.5 x 3 = 1228 (1274)
					741440 — Flow meter			409.5 x 5 = 2,047 w/Sand
					Final Flow		reading	
					@ Sampling			741140 - 740008 = 1,132

Sample ID: M61-LBF Sample Time, 1325 Duplicate (ID = N/A, Time N/A) Analyses Requested: Level II – Metals, Inorgs, Radios, BTEX, TPH-D

Meter Needs 741,252

c:\users\ianream\appdata\local\microsoft\windows\temporary internet files\content.outlook\zxqg7q3k\field sheets pump m61.docx

GROUNDWATER SAMPLING FIELD DATA

PROJECT: Florence Copper

WELL ID: MW-01-LBF

SAMPLED BY: M. Orcutt

DATE : 2/8/18

WELL INFORMATION

TD Casing: 630 feet

Static Depth to Water: 23.70 feet

System Purge before Params 5.0 liters

Time Purge Start: 11:02 hours

Time Sample Start: 11:35 hours

Time Purged: 33 minutes

Time	Temperature (°C) +/- 3%	pH +/- 0.1	EC (umhos/cm) +/- 3%	DO (mg/L) 10% or <.5	Turbidity (NTU) 10% or <5	Pump Rate (L/min) <0.5L/min	Purge Volume (L)	Pulldown DTW (feet) <0.5 ft	Comments QED Bladder Pump Intake 580'
1121	22.9	7.29	1465	4.88	12.4	0.26	5.0	0.06	clear, NO ODORS
1125	22.8	7.34	1465	4.24	12.8	~~0.33~~ 0.25	6.0	0.05	
1129	22.8	7.35	1465	3.72	12.3	0.25	7.0	0.05	
1133	22.8	7.36	1464	3.40	12.2	0.25	8.0	0.05	
									Low flow for VOC's
									2

Sample ID: MW-01-LBF Sample Time, 1135 Duplicate (ID = N/A, Time N/A) Analyses Requested: Level II – Metals, Inorgs, Radios, BTEX, TPH-D

GROUNDWATER SAMPLING FIELD DATA

PROJECT: Florence Copper

WELL ID: MW-01-LBF

SAMPLED BY: M. Orcutt

DATE : 2/22/18

WELL INFORMATION

TD Casing: 630 feet

Static Depth to Water: 224.14 feet

System Purge before Params 5.0 liters

Time Purge Start: 10:17 hours

Time Sample Start: 1054 hours

Time Purged: 37 minutes

Time	Temperature (°C) +/- 3%	pH +/- 0.1	EC (umhos/cm) +/- 3%	DO (mg/L) 10% or <.5	Turbidity (NTU) 10% or <5	Pump Rate (L/min) <0.5L/min	Purge Volume (L)	Pulldown DTW (feet) <0.5 ft	Comments QED Bladder Pump Intake 580'
1034	21.5	7.50	1467	1.58	23.0	0.29	5.0	0.04	Clear, NO ODORS
1037	21.1	7.48	1470	1.30	17.8	0.33	6.0	0.04	
1040	21.5	7.48	1474	1.18	15.4	0.33	7.0	0.05	
1044	21.6	7.49	1472	1.08	14.4	0.25	8.0	0.05	
1048	21.5	7.48	1470	1.06	12.0	0.25	9.0	0.06	
1052	21.7	7.48	1473	1.00	10.87	0.25	10.0	0.06	
									Low flow for VOCs
									2.4

Sample ID: MW-01-LBF Sample Time, 1054 Duplicate (ID = MG310, Time 1115) Analyses Requested: Level II – Metals, Inorgs, Radios, BTEX, TPH-D

GROUNDWATER SAMPLING FIELD DATA

PROJECT: Florence Copper

WELL ID: MW-01-O

SAMPLED BY: M. Orcutt

DATE : 2/8/18

WELL INFORMATION

TD Casing: 1,200 feet

Static Depth to Water: ~~228.78~~ feet 228.58

System Purge before Params 9.2 liters

Time Purge Start: 0924 hours

Time Sample Start: 1014 hours

Time Purged: 50 minutes

Time	Temperature (°C) +/- 3%	pH +/- 0.1	EC (umhos/cm) +/- 3%	DO (mg/L) 10% or <.5	Turbidity (NTU) 10% or <5	Pump Rate (L/min) <0.5L/min	Purge Volume (L)	Pulldown DTW (feet) <0.5 ft	Comments QED Bladder Pump Intake 1000'
0956	22.2	7.81	1432	3.12	25.0		9.5	0.00	Cldy, no odors
10:00	22.2	7.82	1439	2.79	22.8	0.25	10.5	0.00	
10:04	22.2	7.86	1440	3.00	20.0	0.25	11.5	0.00	
10:08	22.2	7.83	1440	2.60	20.3	0.25	12.5	0.00	
10:12	22.2	7.84	1439	2.21	20.8	0.25	13.5	0.00	
									Low flow for
				Final (VOA) Turb = 20					VOC's
						Looks	Clear		
									QED pump installed
									A.M. Today
									2,4,6

Sample ID: MW-01-O Sample Time, 1014 Duplicate (ID = N/A, Time N/A) Analyses Requested: Level II – Metals, Inorgs, Radios, BTEX, TPH-D

GROUNDWATER SAMPLING FIELD DATA

PROJECT: Florence Copper

WELL ID: MW-01-O

SAMPLED BY: M. Orcutt

DATE : 2/22/18

WELL INFORMATION

TD Casing: 1,200 feet

Static Depth to Water: 222.82 feet

System Purge before Params 9.2 liters

Time Purge Start: 0840 hours

Time Sample Start: 0928 hours

Time Purged: 48 minutes

Time	Temperature (°C) +/- 3%	pH +/- 0.1	EC (umhos/cm) +/- 3%	DO (mg/L) 10% or <.5	Turbidity (NTU) 10% or <5	Pump Rate (L/min) <0.5L/min	Purge Volume (L)	Pulldown DTW (feet) <0.5 ft	Comments QED Bladder Pump Intake 1000'
0915	21.2	7.60	1405	2.20	9.52	0.27	9.5	0.06	LT. cldy, NO ODORS
0919	21.1	7.61	1398	2.12	6.07	0.20	10.5	0.06	
0923	21.2	7.63	1395	1.97	5.20	0.20	11.5	0.07	
0927	21.1	7.63	1397	1.87	3.49	0.20	12.5	0.07	
									Low flow for VOC's
									2, 4, 6, 8

Sample ID: MW-01-O Sample Time, 0928 Duplicate (ID = N/A Time N/A) Analyses Requested: Level II – Metals, Inorgs, Radios, BTEX, TPH-D

pH and TEMP CALIBRATION RECORD

Florence Copper Project

Instrument: YSI 556
SN: 15A102406
Probe SN: 600336

APP Sampling Event
Month: Feb
Year: 2018

Calibration Procedures:

-pH calibration/measurement should be performed in accordance with protocols set forth by ***Standard Methods for the Examination of Water and Wastewater – 4500 H pH.*** Gentle agitation or stirring of sample should maintained during pH calibration and sample analysis.

-Temperature measurement should be performed in accordance with protocols set forth by ***Standard Methods for the Examination of Water and Wastewater – 2550 Temperature*** using an NIST traceable thermometer.

Calibration Standards Used:

Standard	Manufacturer	Lot#	Received	Expiration
4.00	Env Supply	7EF1144	1-25-18	Jun 19
7.00	Env. Supply	7EH154	1-25-18	Aug 19
10.00	Env. Supply	7EF884	2-7-18	Jun/19
7.00 Chk	Term Tech	4706D46	2-7-18	6/19

(2-22) pH7 7EK703 2/15/18 Exp Nov. 19 / pH 7 Chk 7EJ494 2/15/18 Exp Oct 19

Calibration Record

Date	Time	Sampler	pH 4.00		pH 7.00		pH 10.00		pH 7.00Chk		Temp Chk*	Notes**
			T (°C)	Cal.	T (°C)	Cal.	T (°C)	Cal.	T (°C)	Cal.	T (°C)	
2-7-18	0740	M. Ouk	11.2	4.00	11.0	7.00	11.8	10.02	15.1	7.02		
2-7-18	1030	"	—	—	—	—	—	—	22.3	6.98		
2-8-18	0745	"	14.1	4.00	13.5	7.00	16.5	10.0	15.0	7.01		
2-8-18	1100	"	—	—	—	—	—	—	20.2	7.02		
2-9-18	0730	"	11.0	4.01	10.3	6.99	10.8	9.99	9.80	6.98		
2-9-18	1040	"	—	—	—	—	—	—	18.1	7.02		
2-22-18	0845	"	14.7	4.00	13.2	6.99	14.1	10.6	13.3	7.02		
2-22-18	1300	"	—	—	—	—	—	—	18.9	7.02		

* Temperature check performed with second NIST thermometer.
** If meter does not provide slope, ensure that the calibration is confirmed with a recheck of pH 7.0 in the column "pH 7.00Chk".
***Perform 7-Check every 10 measurements or if Temperature increases by 15 °F.
**** All maintenance to instrument during the field event should be logged on this form. All maintenance should also be logged on the "Preventative Maintenance" log.

EC and DO CALIBRATION RECORD

Florence Copper Project

Instrument: YSI556
SN: 15A102406
Probe SN: 600336

APP Sampling Event
Month: Feb
Year: 2018

Calibration Procedures:

-EC calibration/measurement should be performed in accordance with protocols set forth by ***Standard Methods for the Examination of Water and Wastewater – 2510 Conductivity.***

-Temperature measurement should be performed in accordance with protocols set forth by ***Standard Methods for the Examination of Water and Wastewater – 2550 Temperature*** using an NIST traceable thermometer.

-DO calibration/measurement should be performed as per manufacturer recommendations.

Calibration Standards Used:

Standard Conc.	Manufacturer	Lot#	Received	Expiration
1413	EnvSupply	7EH324	1-30-18	Aug 19
1413	"	7EH324	2-20-18	Aug 18
(check)	N/A			

Calibration Record

Date	Time	Sampler	Specific Conductance						DO calibration performed?	Notes*
			EC 1413		EC 1413		EC 1413 Chk			
			T (°C)	Cal.	T (°C)	Cal.	T (°C)	Cal.	Yes/No	
2-7-18	0800	MIOrtil			11.9	1413			Yes	100% 770.6 mmHg
2-9-18	0800	"			14.3	1413			Yes	100% 767.9 "
2-9-18	0745	"			10.2	1413			Yes	100% 764.0
2-22-18	0852	"			14.4	1413			Yes	100% 769.8

* All maintenance to instrument during the field event should be logged on this form. All maintenance should also be logged on the "Preventative Maintenance" log.

TURBIDITY CALIBRATION RECORD

Florence Copper Project

Instrument: LaMotte 2020e
SN: 10969
Probe SN: N/A

APP Sampling Event
Month: Feb
Year: 2018

Calibration Procedures:

-Calibration/measurement should be performed in accordance with protocols set forth by ***USEPA Method 180.1*** using an NIST traceable thermometer.

Calibration Standards Used:

Standard	Manufacturer	Lot#	Received	Expiration
0 NTU	Amco	C691307	2/13/17	5/18
1 NTU	↓	C5827178	5/1/17	1/18
10 NTU		C6898408	2/13/17	5/18
1 NTU Chk		C5827178	5/1/17	1/18

Calibration Record

Date	Time	Sampler	0 NTU	1 NTU	10 NTU	1 NTU Chk	Notes**
2-7-18	0800	MIOrutt	0.00	1.02	9.98	0.98	
2-8-18	0754	"	0.00	1.02	10.02	1.02	
2-9-18	0745	"	0.00	1.02	9.98	1.02	
2-22-18	0855	"	0.00	1.01	9.99	1.01	

YSI 556 NEW JAN 28, 2015

1/28/15

No Maint. Required

3/26/15

5/4/2015 DO not calibrating -
M. Orcutt Replaced DO Sensor membrane
Recalibration OK. (Florence).

5/7/2015 NIST Thermometer check.
M. Orcutt BC-1A Model 4146 Exp 11/8/2015
1°C from YSI 556 Temp.

8/10/2015
M. Orcutt pH not calibrating.
F.C. Forced readings -
Uncalibrated and pH 7.0
Re Calib. check OK. MV +140
at pH 7.0

8/13/2015 Replaced pH/ORP Sensor
M. Orcutt +0.6 MV - good

Scale: 1 square = _____

2016

Aug 9, - Ernies
M. Orcutt D.O. Fluid Replace
and D.O. Tip replaced

Aug 26 Replaced DO Tip
w/ new fluid.
M. Orcutt Andrews property

Sept. 6 M. Orcutt NWR
YSI pH failure.
Replaced pH/ORP Sensor
Equipco - repair.

Nov 10, 2016 M. Orcutt
Florence
Replaced YSI 556 pH/ORP Sensor

Nov 11, 2016 NIST Thermometer
check @ Florence (W15859378)
18.4°C - YSI / 19.4°C NIST (1°C)

Scale: 1 square = _____

Rite in the Rain

OLD pH Sensor report

pH	mV	Reading	Temp
pH 7	·29	7.00	24.8 °C
4	+85.9	4.00	8524.4 °C
10	-141.4	10.01	24.6

* pH 7 ok,
pH 4, 10 forced,

Changed Sensor (pH, ORP)

Scale: 1 square = _____

Scale: 1 square = _____

AbsoluteGrade PT Program

NELAC-TNI PTP16

PT Evaluation Report

Brown and Caldwell
Michael Orcutt 6025674000
201 East Washington Street Suite 500
Phoenix AZ 85004

Account # 5490

USEPA Lab ID
Study # **QTA**
Study Type **External PT**

NPDES ID #
Open Date **10/30/2017**
Close Date **12/13/2017**

Part# **55026WV** Lot# **081117** **WP Conductance @ 25°C - DMRQA** **@ 25 C** Invoice# **166494** Units **umhos/cm**

NELAC #	Component	Method Code	Method Description	</>	Reported Value	AV or StudyMean	Assigned Value	Acceptance Limits Low	High	Performance Evaluation	Analysis Date
1610	Specific Conductance @ 25 C	200	2510B		768	744	744	670	818	ACCEPT.	12/12/2017

Samples were prepared and scored according to the principles outlined in the "The TNI Standard EL-V3-2009" and the current Fields of Proficiency Testing Tables, FoPTs.
All components are formulated and verified under Absolutes' NELAC scope (ANAB Accreditation ISO 17025, 17043 (Cert.# AP-1543) , Guide 34-35) as shown in blue font.
This report may be used in whole or in part by the participant. All results are confidential but limited to accreditation body or other participant requests!

Calibration
Certificate No. 1750.01

Calibration complies with ISO/IEC 17025, ANSI/NCSL Z540-1, and 9001

Cert. No.: 4372-8485029

Traceable® Certificate of Calibration for Flip-Stick™ Thermometer

Instrument Identification:

Model: 4372 S/N: 170481521 Manufacturer: Control Company

Standards/Equipment:

Description	Serial Number	Due Date	NIST Traceable Reference
Temperature Calibration Bath TC-191	A42238		
Thermistor Module	A27129	12/01/17	1000401760
Temperature Probe	5202	12/19/17	B6B30058-1
Temperature Calibration Bath TC-218	A73332		
Thermistor Probe	5356	1/10/18	B7104024
Readout, Digital Thermometer	B5C344	3/12/18	B7314035

Certificate Information:

Technician: 104 Procedure: CAL-3 Cal Date: 4/24/17 Due Date: 4/24/19
Test Conditions: 23.7°C 47.0 %RH 1015 mBar

Calibration Data: (New Instrument)

Unit(s)	Nominal	As Found	In Tol	Nominal	As Left	In Tol	Min	Max	±U	TUR
°C		N.A.		0.000	-0.4	Y	-1.0	1.0	0.059	>4:1
°C		N.A.		90.000	89.9	Y	89.0	91.0	0.059	>4:1

This Instrument was calibrated using Instruments Traceable to National Institute of Standards and Technology.

A Test Uncertainty Ratio of at least 4:1 is maintained unless otherwise stated and is calculated using the expanded measurement uncertainty. Uncertainty evaluation includes the instrument under test and is calculated in accordance with the ISO "Guide to the Expression of Uncertainty in Measurement" (GUM). The uncertainty represents an expanded uncertainty using a coverage factor k=2 to approximate a 95% confidence level. In tolerance conditions are based on test results falling within specified limits with no reduction by the uncertainty of the measurement. The results contained herein relate only to the item calibrated. This certificate shall not be reproduced except in full, without written approval of Control Company.

Nominal=Standard's Reading; As Left=Instrument's Reading; In Tol=In Tolerance; Min/Max=Acceptance Range; ±U=Expanded Measurement Uncertainty; TUR=Test Uncertainty Ratio; Accuracy=±(Max-Min)/2; Min = As Left Nominal(Rounded) - Tolerance; Max = As Left Nominal(Rounded) + Tolerance; Date=MM/DD/YY

Nicol Rodriguez, Quality Manager

Aaron Judice, Technical Manager

Maintaining Accuracy:

In our opinion once calibrated your Flip-Stick™ Thermometer should maintain its accuracy. There is no exact way to determine how long calibration will be maintained. Flip-Stick™ Thermometers change little, if any at all, but can be affected by aging, temperature, shock, and contamination.

Recalibration:

For factory calibration and re-certification traceable to National Institute of Standards and Technology contact Control Company.

CONTROL COMPANY 12554 Galveston RD Suite B230 Webster TX USA 77598
Phone 281 482-1714 Fax 281 482-9448 service@control3.com www.control3.com

Control Company is an ISO 17025:2005 Calibration Laboratory Accredited by (A2LA) American Association for Laboratory Accreditation, Certificate No. 1750.01.
Control Company is ISO 9001:2008 Quality Certified by (DNV) Det Norske Veritas, Certificate No. CERT-01805-2006-AQ-HOU-RvA.
International Laboratory Accreditation Cooperation (ILAC) - Multilateral Recognition Arrangement (MRA).

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BROWN AND CALDWELL

Acknowledgement Form

Page ____ of ____

Name of Project/Site: Florence Copper	**Project No:** 152044
Project/Site Location: Florence, AZ	**Permit Type (APP, AZPDES):** APP
Employee Completing Form: (Print and Sign):	**Date:** 2/2/18

Employee Acknowledgement:

The following signatures indicate that these personnel have read and/or been briefed on the documents indicated and understand the work to be performed:

- ☑ pH by SM 4500 H-B
- ☑ temperature by SM 2550B
- ☑ specific conductance by SM 2510 B
- ☑ dissolved oxygen by SM 4500 O-G
- ☑ turbidity by EPA 180.1
- ☑ Manufacturer Info for Instrument YSI-556
- ☑ Manufacturer Info for Instrument Lamott 220 WE

Print	Sign
Michael Oracle	

Comments

TURNER LABORATORIES INC.
2445 N. Coyote Drive, Suite 104
Tucson, Arizona 85745
(520) 882-5880
Fax: (520) 882-9788
www.turnerlabs.com

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

TURNER WORK ORDER # _____ DATE 2-7-2018 PAGE 1 OF 1

PROJECT NAME Florence Copper #

CONTACT NAME: Barb Sylvester

COMPANY NAME: Brown and Caldwell

ADDRESS: 2 N Central Ave, Suite 1600

CITY Phoenix STATE AZ ZIP CODE 85004

PHONE 602-567-3894 FAX

SAMPLER'S SIGNATURE

CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX*	NUMBER OF CONTAINERS *	Diss Metals - list (Field Filtered)	Total Uranium (not Filtered)	Inorganics - list	Cyanide (free)	Organics - list	Radiochems (RadSafety sub)	Radon 222 (RadSafety sub)	TPH-D (TestAmerica Sub)
M54-0	2-7-18	0820		GW	12	X	X	X	X	X	X	X	X
M54-CBF		0928		GW	12	X	X	X	X	X	X	X	X
M58-0		11:08		GW	12	X	X	X	X	X	X	X	X
M60-0		1324		GW	12	X	X	X	X	X	X	X	X
TB		—		DI ~~GW~~	2					X			
				GW									
				GW									
				GW									
				GW									
				GW									
				GW									

1. RELINQUISHED BY: Signature; Printed Name: Michael Orcutt; Firm: Brown r Caldwell; Date/Time: 2-7-18 @ 1440

2. RECEIVED BY: Signature; Printed Name; Firm; Date/Time

TURNAROUND REQUIREMENTS:
X Standard (approx.10 days)*
___Next day ___2 Day ___5 Day*
___ Email Preliminary Results To:
* Working Days

REPORT REQUIREMENTS:
X I. Routine Report
___ II. Report (includes DUP,MS,MSD, as required, may be charged as samples)
___ III. Date Validation Report (Includes All Raw Data)
Add 10% to invoice

INVOICE INFORMATION:
Account X Y ___ N
P.O. #
Bill to: Florence Copper

SAMPLE RECEIPT:
Total Containers
Temperature
☑ Wet Ice ☐ Blue Ice

3. RELINQUISHED BY: Signature; Printed Name; Firm; Date/Time

4. RECEIVED BY: Signature; Printed Name TURNER LABORATORIES, INC.; Firm; Date/Time

*LEGEND
DW = DRINKING WATER
GW = GROUNDWATER
SD = SOLID
SG = SLUDGE
SL = SOIL
ST = STORMWATER
WW = WASTEWATER

SPECIAL INSTRUCTIONS/COMMENTS:

Compliance Analysis: ☐ Yes ☐ No	Custody Seals ☐	Preservation Confirmation ☐
ADEQ Forms: ☐ Yes ☐ No	Container Intact ☐	Appropriate Head Space ☐
Mail ADEQ Forms: ☐ Yes ☐ No	COC/Labels Agree ☐	Received Within Hold Time ☐

Diss. Metals field Filtered.
Send Analytical list w/ COC
* 3 Bottles to Rad Safety by BC direct.

TURNER LABORATORIES INC.
2445 N. Coyote Drive, Suite 104
Tucson, Arizona 85745
(520) 882-5880
Fax: (520) 882-9788
www.turnerlabs.com

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

TURNER WORK ORDER # _____ DATE 2-8-2018 PAGE 1 OF 1

PROJECT NAME Florence Copper # _____
CONTACT NAME: Barb Sylvester
COMPANY NAME: Brown and Caldwell
ADDRESS: 2 N Central Ave, Suite 1600
CITY Phoenix STATE AZ ZIP CODE 85004
PHONE 602-567-3894 FAX
SAMPLER'S SIGNATURE _____

CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX*	NUMBER OF CONTAINERS	Diss Metals - list (Field Filtered)	Total Uranium (not Filtered)	Inorganics - list	Cyanide (free)	Organics - list	Radiochems (RadSafety sub)	Radon 222 (RadSafety sub)	TPH-D (TestAmerica Sub)
MST-0	2-8-18	0824		GW	12	X	X	X	X	X	X	X	X
MW-01-0	↓	1014		GW	12	X	X	X	X	X	X	X	X
MW-01-GBF		1135		GW	12	X	X	X	X	X	X	X	X
MS9-0		1410		GW	12	X	X	X	X	X	X	X	X
TB		–		~~GW~~ DI	2					X			
				GW									
				GW									
				GW									
				GW									
				GW									
				GW									

1. RELINQUISHED BY: Signature _____ Printed Name Michael Ouellette Firm BTC Date/Time 2-8-18 1515

2. RECEIVED BY: Signature _____ Printed Name _____ Firm _____ Date/Time _____

TURNAROUND REQUIREMENTS:
X Standard (approx.10 days)*
___Next day ___2 Day ___5 Day*
___ Email Preliminary Results To: _____
* Working Days

REPORT REQUIREMENTS:
X I. Routine Report
___ II. Report (includes DUP,MS,MSD, as required, may be charged as samples)
___ III. Date Validation Report (Includes All Raw Data)
Add 10% to invoice

INVOICE INFORMATION:
Account X Y ___ N
P.O. # _____
Bill to: Florence Copper

SAMPLE RECEIPT:
Total Containers _____
Temperature _____
☑ Wet Ice ☐ Blue Ice

3. RELINQUISHED BY: Signature _____ Printed Name _____ Firm _____ Date/Time _____

4. RECEIVED BY: Signature _____ Printed Name TURNER LABORATORIES, INC. Firm _____ Date/Time _____

*LEGEND
DW = DRINKING WATER
GW = GROUNDWATER
SD = SOLID
SG = SLUDGE
SL = SOIL
ST = STORMWATER
WW = WASTEWATER

SPECIAL INSTRUCTIONS/COMMENTS:

Compliance Analysis:	☐ Yes ☐ No	Custody Seals	☐	Preservation Confirmation	☐
ADEQ Forms:	☐ Yes ☐ No	Container Intact	☐	Appropriate Head Space	☐
Mail ADEQ Forms:	☐ Yes ☐ No	COC/Labels Agree	☐	Received Within Hold Time	☐

Diss. Metals field filtered.
See Analytical list w/ COC
3 bottles to Rad Safety by BC directly

TURNER LABORATORIES INC.
2445 N. Coyote Drive, Suite 104
Tucson, Arizona 85745
(520) 882-5880
Fax: (520) 882-9788
www.turnerlabs.com

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

TURNER WORK ORDER # _____ DATE 2-9-2018 PAGE 1 OF 1

PROJECT NAME Florence Copper # _____
CONTACT NAME: Barb Sylvester
COMPANY NAME: Brown and Caldwell
ADDRESS: 2 N Central Ave, Suite 1600
CITY Phoenix STATE AZ ZIP CODE 85004
PHONE 602-567-3894 FAX
SAMPLER'S SIGNATURE

CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX*	NUMBER OF CONTAINERS *	Diss Metals - list (Field Filtered)	Total Uranium (not Filtered)	Inorganics - list	Cyanide (free)	Organics - list	Radiochems (RadSafety sub)	Radon 222 (RadSafety sub)	TPH-D (TestAmerica Sub)
MS2-uBF	2-9-18	0810		GW	12	X	X	X	X	X	X	X	X
MS6-LBF	↓	0943		GW	12	X	X	X	X	X	X	X	X
MS5-uBF		1100		GW	12	X	X	X	X	X	X	X	X
MG1-LBF		1325		GW	12	X	X	X	X	X	X	X	X
TB	↓	—		~~GW~~ DI	2					X			
				GW									
				GW									
				GW									
				GW									
				GW									
				GW									

1. RELINQUISHED BY: Signature; Michael Orcutt; Printed Name; B+C; Firm; 2-9-2018 @ 1345; Date/Time

2. RECEIVED BY: Signature; Printed Name; Firm; Date/Time

TURNAROUND REQUIREMENTS:
X Standard (approx.10 days)*
___Next day ___2 Day ___5 Day*
___Email Preliminary Results To:
* Working Days

REPORT REQUIREMENTS:
X I. Routine Report
___ II. Report (includes DUP,MS,MSD, as required, may be charged as samples)
___ III. Date Validation Report (Includes All Raw Data)
Add 10% to invoice

INVOICE INFORMATION:
Account X Y ___ N
P.O. # _____
Bill to: Florence Copper

SAMPLE RECEIPT:
Total Containers _____
Temperature _____
☑ Wet Ice ☐ Blue Ice

3. RELINQUISHED BY: Signature; Printed Name; Firm; Date/Time

4. RECEIVED BY: Signature; Printed Name TURNER LABORATORIES, INC.; Firm; Date/Time

*LEGEND
DW = DRINKING WATER
GW = GROUNDWATER
SD = SOLID
SG = SLUDGE
SL = SOIL
ST = STORMWATER
WW = WASTEWATER

SPECIAL INSTRUCTIONS/COMMENTS:

Compliance Analysis: ☐ Yes ☐ No	Custody Seals ☐	Preservation Confirmation ☐
ADEQ Forms: ☐ Yes ☐ No	Container Intact ☐	Appropriate Head Space ☐
Mail ADEQ Forms: ☐ Yes ☐ No	COC/Labels Agree ☐	Received Within Hold Time ☐

Diss. Metals Field Filtered
See Analytic List
*3 bottles to Rad Safety by RC 2-9-18

TURNER LABORATORIES INC.
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Tucson, Arizona 85745
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CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

TURNER WORK ORDER # _____ DATE 2-22-2018 PAGE 1 OF 1

PROJECT NAME Florence Copper # _____
CONTACT NAME: Barb Sylvester
COMPANY NAME: Brown and Caldwell
ADDRESS: 2 N Central Ave, Suite 1600
CITY Phoenix STATE AZ ZIP CODE 85004
PHONE 602-567-3894 FAX
SAMPLER'S SIGNATURE [signature]

CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX*	NUMBER OF CONTAINERS (#)	Diss Metals - list (Field Filtered)	Total Uranium (not Filtered)	Inorganics - list	Cyanide (free)	Organics - list	Radiochems (RadSafety sub)	Radon 222 (RadSafety sub)	TPH-D (TestAmerica Sub)
MW-01-0	2-22-17	0928		GW	12	X	X	X	X	X	X	X	X
MW-01-LBF	↓	1054		GW	12	X	X	X	X	X	X	X	X
MW3,0	↓	11:15		GW	12	X	X	X	X	X	X	X	X
TB	↓	—		GW	1					X			
				GW									
				GW									
				GW									
				GW									
				GW									
				GW									
				GW									

1. RELINQUISHED BY: [signature]
Signature
Michael Orr
Printed Name
Brown+Caldwell
Firm
2-22-18 @ 1500
Date/Time

2. RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

TURNAROUND REQUIREMENTS:
X Standard (approx.10 days)*
___Next day ___2 Day ___5 Day*
___ Email Preliminary Results To:
* Working Days

REPORT REQUIREMENTS:
X I. Routine Report
___ II. Report (includes DUP,MS,MSD, as required, may be charged as samples)
___ III. Date Validation Report (Includes All Raw Data)
Add 10% to invoice

INVOICE INFORMATION:
Account X Y ___ N
P.O. # _____
Bill to: Florence Copper

SAMPLE RECEIPT:
Total Containers _____
Temperature _____
☑ Wet Ice ☐ Blue Ice

3. RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

4. RECEIVED BY:
Signature
Printed Name TURNER LABORATORIES, INC.
Firm
Date/Time

*LEGEND
DW = DRINKING WATER
GW = GROUNDWATER
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SPECIAL INSTRUCTIONS/COMMENTS:

Compliance Analysis: ☐ Yes ☐ No	Custody Seals ☐	Preservation Confirmation ☐
ADEQ Forms: ☐ Yes ☐ No	Container Intact ☐	Appropriate Head Space ☐
Mail ADEQ Forms: ☐ Yes ☐ No	COC/Labels Agree ☐	Received Within Hold Time ☐

*3 bottles to Rad Safety by B.C. 2/22/18
See Attached List w/ COC

Florence Copper Project
New POC Wells - Ambient Monitoring

Inorganics - 500 ml Poly Unpreserved

pH (lab)
EC (lab)
Bicarbonate Alkalinity
Carbonate Alkalinity
Hydroxide Alkalinity
Total Alkalinity
Chloride
Fluoride
Nitrate as N (48-hr Hold time)
Nitrite as N (48-hr Hold time)
Sulfate
Total Dissolved Solids
Cation/Anion Balance

500 ml NaOH

Cyanide (free)

Organics

3 HCl Voas

Benzene
Ethylbenzene
Toluene
Total Xylene
Napthalene
Octane
Carbon Disulfide

2 1L Amber to TestAmerica

Extractable Fuel Hydrocarbons
(Diesel Range Organics)

Filtered Dissolved Metals - 250 ml NO3

Aluminum
Antimony
Arsenic
Barium
Beryllium
Cadmium
Calcium
Chromium
Cobalt
Copper
Iron
Lead
Magnesium
Manganese
Mercury
Nickel
Potassium
Selenium
Sodium
Thallium
Zinc

UNFiltered Total Metals - 250 ml NO3

Total Urnanium

Radiochems to Radiation Safety

1G unpreserved poly

Gross Alpha
Gross Beta
Radium 226+228

Uranium istotopes (if G. Alpha >12.0)

Adjusted Alpha (if G. Alpha >12.0)

2 blank Voas - 72 Hour Hold Time

Radon