Pilot Test Facility (PTF) Mine Block Ambient Groundwater Concentrations and Initial Discharge Characterization of the Underground Workings

Florence Copper Project
Florence, Arizona

September 11, 2018

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INTRODUCTION

Temporary Aquifer Protection Permit (APP) No. P-106360 requires an initial sample to be collected from each well of the pilot test facility mine block in order to establish ambient mine block groundwater concentrations. An initial sample of the underground workings to characterize ambient discharge concentrations is also required.

SAMPLING AND ANALYSIS

Groundwater sampling and analysis was conducted in general accordance with the requirements of APP Section 2.5.3 (Groundwater Monitoring and Sampling Protocols). Sampling, preservation, and holding times were in accordance with accepted industry standards. Three wells, I-01, WB-01, and WB-04, were purged for less than three borehole volumes. The reduced purge did not appear to affect sampling results. Sampling records will be stored at the project site per permit requirements.

RESULTS

Results are summarized in the following tables, which include the maximum result for each parameter.

- Table 1 – Sampling Analyses;
- Table 2 – Primary Four Indicator Parameters (Level 1);
- Table 3 – Field Parameters;
- Table 4 – Trace Metal Parameters;
- Table 5 – Organic Parameters; and
- Table 6 – Radiochemical Parameters.

Five total radium results exceeded the Aquifer Water Quality Standard (AWQS) during this ambient-baseline event. No other results exceeded an AWQS.

Table 1. Summary of Sampling Analyses		
Analysis	Method	Preservative
Common Ions		
pH (lab)	SM 4500H+	None
Electroconductivity (EC) (lab)	SM 2510B	None
Alkalinity – Bicarbonate, Carbonate, Hydroxide, and Total	SM 2320B	None
Ammonia (Underground Workings Only)	SM 4500-NH3	H2SO4
Chloride	EPA 300.0	None
Cyanide (PTF Samples Only)	EPA 335.4	NaOH
Fluoride (Level I Indicator)	EPA 300.0	None
Nitrate as N	EPA 300.0	None
Nitrite as N (PTF Samples Only)	EPA 300.0	None
Sulfate (Level I Indicator)	EPA 300.0	None
Total Dissolved Solids (Level I Indicator)	SM 2540C	None
Formation-Related Radiochemicals		
Gross Alpha	600/00-02	None
Radium 226	903/GammaRay HPGE	None
Radium 228	904/GammaRay HPGE	None
Total Uranium Isotopes (Activity) (if G. Alpha >12.0)	ASTM 6239	None
Total Uranium (unfiltered total as mg/L)	EPA 200.8	HNO3
Process-Related Organics		
Extractable Fuel Hydrocarbons (Diesel-Range Organics)	EPA 8015D	None
Benzene	EPA 8260B	HCl
Carbon Disulfide	EPA 8260B	HCl
Ethylbenzene	EPA 8260B	HCl
Toluene	EPA 8260B	HCl
Total Xylene	EPA 8260B	HCl
Trace Metals (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
Cadmium	EPA 200.8	HNO3
Calcium	EPA 200.7	HNO3
Chromium	EPA 200.8	HNO3
Cobalt	EPA 200.8	HNO3
Copper	EPA 200.8	HNO3
Iron	EPA 200.8	HNO3
Lead	EPA 200.8	HNO3

Table 1. Summary of Sampling Analyses		
Analysis	Method	Preservative
Magnesium (Level I Indicator)	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
Uranium (*Total)	EPA 200.8	HNO3
Zinc	EPA 200.8	HNO3

Table 2. Summary of Indicator Parameters, PTF Wells

Well ID	Sample Date	Magnesium	Sulfate	Fluoride	Total Dissolved Solids	Field Temp	Field pH	Field EC
Injection/Pumping Wells								
I-01	Apr 11 2018	25	200	<0.5	1000	25.67	7.65	1531
I-02	Jul 18 2018	24	170	<0.5	1000	27.8	7.42	1539
I-03	May 02 2018	26	180	<0.5	990	25	7.48	1916
I-04	Apr 19 2018	24	150	<0.5	990	25.54	7.57	1606
Recovery Wells								
R-01	Aug 08 2018	24	200	<0.5	1000	32.4	7.61	1672
R-02	Aug 08 2018	22	150	<0.5	950	28.4	7.42	1564
R-03	Aug 08 2018	15	120	<0.5	720	27.3	7.51	1252
R-04	Aug 08 2018	19	130	<0.5	920	27.9	7.59	1458
R-05	Aug 08 2018	24	160	<0.5	980	27.6	7.52	1569
R-06	Jul 16 2018	20	140	<0.5	1100	28.9	6.61	1487
R-06 (Dup)	Jul 16 2018	20	140	<0.5	1200	28.9	6.61	1487
R-07	Aug 08 2018	20	130	<0.5	800	27.6	7.54	1356
R-08	Aug 08 2018	22	180	<0.5	1000	31.2	7.49	1670
R-09	Apr 23 2018	27	190	<0.5	1000	25.64	7.52	1446
Observation Wells								
O-01	Jun 28 2018	12	150	0.63	720	24	9.1	1246
O-02	Jun 28 2018	7.7	200	0.89	660	25.3	7.52	1075
O-03	Jun 28 2018	11	100	0.58	640	24.1	7.69	1137
O-04	Jun 28 2018	23	180	<0.5	910	25.6	7.17	1515
O-05	Jun 28 2018	15	110	<0.5	680	24.5	7.57	1201
O-06	Jul 05 2018	13	120	0.53	710	24	7.29	1186
O-07	Jul 05 2018	30	230	<0.5	1000	24.2	7.43	1593
O-07 (Dup)	Jul 05 2018	30	210	<0.5	1000	24.2	7.43	1593
Westbay								
WB-01	Apr 11 2018	27	200	<0.5	990	25.5	7.72	1512
WB-02	Apr 18 2018	25	180	<0.5	950	24.84	7.64	1491
WB-03	Mar 30 2018	27	180	<0.4	1000	25.5	7.64	1889
WB-04	Apr 05 2018	27	170	<0.5	950	25.7	7.49	1606
Shaft								
Shaft	Jun 05 2018	20	<5	0.63	730	29.07	6.83	1293
Maximum		30	230	0.89	1200	32.4	9.1	1916
Arizona Aquifer Water Quality Standard		-	-	4	-	-	-	-

All Results in Milligrams per Liter (mg/l)
< = Less than the Laboratory Practical Quantitation Limit
NA = Not Analyzed

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Table 3. Summary of Common Inorganic Analytical Results, PTF Wells

Well ID	Sample Date	Bicarbonate Alkalinity	Carbonate Alkalinity	Hydroxide Alkalinity	Total Alkalinity	Cyanide (Free)	Calcium	Chloride	Nitrate as N	Nitrite as N	Potassium	Sodium	pH (Lab)	EC (Lab)
Injection/Pumping Wells														
I-01	Apr 11 2018	160	<2.	<2.	160	<0.1	130	320	8.5	<0.1	6.4	180	7.6	1700
I-02	Jul 18 2018	140	<2.	<2.	140	<0.1	120	320	7.97	<0.1	6.5	140	7.4	1600
I-03	May 02 2018	140	<2.	<2.	140	<0.1	130	340	7.9	<0.1	6.6	180	7.6	1700
I-04	Apr 19 2018	130	<2.	<2.	130	<0.1	120	310	8.4	<0.1	5.6	140	7.9	1700
Recovery Wells														
R-01	Aug 08 2018	170	<2.	<2.	170	<0.1	120	280	8.9	<0.1	6.	160	7.6	1700
R-02	Aug 08 2018	140	<2.	<2.	140	<0.1	110	290	6.4	<0.1	6.2	160	7.6	1500
R-03	Aug 08 2018	120	<2.	<2.	120	<0.1	81	240	5.2	<0.1	5.5	130	7.6	1200
R-04	Aug 08 2018	120	<2.	<2.	120	<0.1	100	270	6.4	<0.1	6.8	140	7.7	1600
R-05	Aug 08 2018	140	<2.	<2.	140	<0.1	120	300	8.3	<0.1	6.2	140	7.4	1700
R-06	Jul 16 2018	100	<2.	<2.	100	<0.1	110	340	7.1	<0.1	6.4	150	6.7	1600
R-06 (Dup)	Jul 16 2018	100	<2.	<2.	100	<0.1	110	340	7.07	<0.1	6.4	150	6.7	1500
R-07	Aug 08 2018	120	<2.	<2.	120	<0.1	95	280	6.8	<0.1	5.2	120	7.5	1300
R-08	Aug 08 2018	150	<2.	<2.	150	<0.1	120	330	9.1	<0.1	6.1	170	7.5	1800
R-09	Apr 23 2018	150	<2.	<2.	150	<0.1	140	310	8.8	<0.1	6.8	170	7.8	1700
Observation Wells														
O-01	Jun 28 2018	98	20.	<2.	120	<0.1	63	230	4.2	<0.1	11.	160	8.7	1200
O-02	Jun 28 2018	130	<2.	<2.	130	<0.1	47	130	0.73	<0.1	<5.	160	7.7	1100
O-03	Jun 28 2018	110	<2.	<2.	110	<0.1	65	220	3.9	<0.1	<5.	140	7.7	1100
O-04	Jun 28 2018	150	<2.	<2.	150	<0.1	110	270	7.6	<0.1	5.6	160	7.4	1600
O-05	Jun 28 2018	120	<2.	<2.	120	<0.1	75	230	4.4	<0.1	5.5	130	7.7	1200
O-06	Jul 05 2018	130	<2.	<2.	130	<0.1	66	210	3.2	<0.1	5.1	150	7.4	1200
O-07	Jul 05 2018	200	<2.	<2.	200	<0.1	130	240	8.8	<0.1	5.8	150	7.4	1600
O-07 (Dup)	Jul 05 2018	200	<2.	<2.	200	<0.1	130	220	8.	<0.1	5.8	150	7.5	1600
Westbay														
WB-01	Apr 11 2018	150	<2.	<2.	150	<0.1	140	310	8.1	<0.1	6.3	170	7.6	1700
WB-02	Apr 18 2018	130	<2.	<2.	130	<0.1	120	330	8.1	<0.1	6.1	150	7.7	1700
WB-03	Mar 30 2018	150	<2.	<2.	150	<0.1	140	320	8.8	<0.1	6.7	170	7.7	1600
WB-04	Apr 05 2018	150	<2.	<2.	150	<0.1	130	300	8.	<0.1	7.	170	7.9	1700

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Table 3. Summary of Common Inorganic Analytical Results, PTF Wells

Well ID	Sample Date	Bicarbonate Alkalinity	Carbonate Alkalinity	Hydroxide Alkalinity	Total Alkalinity	Cyanide (Free)	Calcium	Chloride	Nitrate as N	Nitrite as N	Potassium	Sodium	pH (Lab)	EC (Lab)
Shaft														
Shaft	Jun 05 2018	370	<2.	<2.	370	NR	89	190	<0.5	NR	6.9	150	6.8	1300
Maximum		370	20.0	<2.0	370	<0.1	140	340	9.1	<0.1	11.0	180	8.7	1800
AWQS		-	-	-	-	0.2	-	-	10	1	-	-	-	-

All results in milligrams per liter (mg/L), except pH in pH units.
< = less than detection limit
NR = Not required
AWQS = Arizona Aquifer Water Quality Standard
Shaft Ammonia - <0.5 mg/L. Ammonia not required for PTF wells.

Table 4. Summary of Radiochemical Analytical Results, PTF Wells

Well ID	Sample Date	Gross Alpha	Uranium Activity	Adjusted Gross Alpha	Total Radium	Radium 226	Radium 228	Uranium (mg/L)
Injection/Pumping Wells								
I-01	Apr 11 2018	15.3 ± 3.6	10.6 ± 1.1	4.7 ± 3.8	2.7 ± 0.4	1.2 ± 0.2	1.5 ± 0.3	0.016
I-02	Jul 18 2018	6.4 ± 0.5	-	-	3.7 ± 0.5	1.4 ± 0.3	2.3 ± 0.4	0.014
I-03	May 02 2018	16.2 ± 0.9	10.6 ± 1.1	5.6 ± 1.4	4.6 ± 0.5	1.3 ± 0.2	3.3 ± 0.5	0.013
I-04	Apr 19 2018	14.2 ± 1.2	12.8 ± 1.2	1.4 ± 1.7	5 ± 0.5	2.8 ± 0.3	2.2 ± 0.4	0.01
Recovery Wells								
R-01	Aug 08 2018	32.4 ± 1.7	18.2 ± 1.5	14.2 ± 2.3	4.5 ± 0.5	2.8 ± 0.3	1.7 ± 0.4	0.029
R-02	Aug 08 2018	21.1 ± 1.4	7.9 ± 1	13.2 ± 1.7	3.9 ± 0.5	2.1 ± 0.3	1.8 ± 0.4	0.013
R-03	Aug 08 2018	5.5 ± 0.7	-	-	1.6 ± 0.4	0.5 ± 0.2	1.1 ± 0.3	0.0053
R-04	Aug 08 2018	9.4 ± 0.9	-	-	1.9 ± 0.4	0.8 ± 0.2	1.1 ± 0.3	0.0065
R-05	Aug 08 2018	15.4 ± 1.2	7.3 ± 0.9	8.1 ± 1.5	5.1 ± 0.5	2.6 ± 0.3	2.5 ± 0.4	0.011
R-06	Jul 16 2018	10.9 ± 1	-	-	3.5 ± 0.4	2.3 ± 0.3	1.2 ± 0.3	0.0085
R-06 (Dup)	Jul 16 2018	11.6 ± 1	-	-	3.1 ± 0.4	1.6 ± 0.2	1.5 ± 0.3	0.0089
R-07	Aug 08 2018	12.5 ± 1	5 ± 0.8	7.5 ± 1.3	3.6 ± 0.4	1.4 ± 0.2	2.2 ± 0.4	0.0073
R-08	Aug 08 2018	12.9 ± 1.1	6.5 ± 0.9	6.4 ± 1.4	1.4 ± 0.2	1.4 ± 0.2	<0.7	0.013
R-09	Apr 23 2018	17.7 ± 0.9	12.9 ± 1.2	4.8 ± 1.5	6.2 ± 0.5	3.1 ± 0.3	3.1 ± 0.4	0.016
Observation Wells								
O-01	Jun 28 2018	7.8 ± 0.6	-	-	2.8 ± 0.4	0.8 ± 0.2	2 ± 0.3	0.0044
O-02	Jun 28 2018	4 ± 0.8	-	-	<0.6	<0.4	<0.6	0.0037
O-03	Jun 28 2018	8.1 ± 0.6	-	-	2.6 ± 0.4	0.9 ± 0.2	1.7 ± 0.3	0.0025
O-04	Jun 28 2018	7.9 ± 0.6	-	-	1.5 ± 0.4	0.8 ± 0.2	0.7 ± 0.3	0.012
O-05	Jun 28 2018	7 ± 6	-	-	1.2 ± 0.4	0.6 ± 0.2	0.6 ± 0.3	0.0047
O-06	Jul 05 2018	3.6 ± 0.4	-	-	<0.7	<0.5	<0.7	0.0048
O-07	Jul 05 2018	44.5 ± 1.6	29.1 ± 1.9	15.4 ± 2.5	5.6 ± 0.5	3.6 ± 0.3	2 ± 0.4	0.046
O-07 (Dup)	Jul 05 2018	42.3 ± 1.5	28.5 ± 1.9	13.8 ± 2.4	5.2 ± 0.5	3.4 ± 0.3	1.8 ± 0.4	0.048
Westbay								
WB-01	Apr 11 2018	17.3 ± 1.9	12.5 ± 1.2	4.8 ± 2.2	4.3 ± 0.5	2 ± 0.3	2.3 ± 0.4	0.018
WB-02	Apr 18 2018	12.1 ± 1	6.6 ± 1.8	5.5 ± 2.1	5.5 ± 0.4	2.7 ± 0.2	2.8 ± 0.4	0.0098
WB-03	Mar 30 2018	11.1 ± 1.7	-	-	3.7 ± 0.4	1.6 ± 0.3	2.1 ± 0.3	0.013
WB-04	Apr 05 2018	13.9 ± 0.8	9.2 ± 1	4.7 ± 1.3	4.2 ± 0.4	1.3 ± 0.2	2.9 ± 0.4	0.015
Shaft								
Shaft	Jun 05 2018	3.6 ± 0.7	-	-	0.7 ± 0.2	0.7 ± 0.2	<0.6	<0.0005

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Table 4. Summary of Radiochemical Analytical Results, PTF Wells

Well ID	Sample Date	Gross Alpha	Uranium Activity	Adjusted Gross Alpha	Total Radium	Radium 226	Radium 228	Uranium (mg/L)
Maximum		9.4 ± 0.9	9.2 ± 1	8.1 ± 1.5	6.2 ± 0.5	3.6 ± 0.3	3.3 ± 0.5	
Arizona Aquifer Water Quality Standard		15 *	-	15*	5	-	-	-

All results in pico-curies per liter (unless noted) ± a standard deviation of two (pCi/L ± 2σ)
< = less than detection limit
Total Radium = Radium 226 + Radium 228
Uranium activity is measured when Gross Alpha exceeds 12 pCi/L
Adjusted gross alpha is calculated when Gross Alpha exceeds 12 pCi/L

Table 5. Summary of Organic Analytical Results, PTF Wells

Well ID	Sample Date	Benzene	Ethylbenzene	Toluene	Total Xylene	Carbon Disulfide	Total Petroleum Hydrocarbons - Diesel
Injection/Pumping Wells							
I-01	Apr 11 2018	<0.0005	<0.0005	<0.0005	<0.0015	<0.002	<0.1
I-02	Jul 18 2018	<0.0005	<0.0005	0.0016	<0.0015	<0.002	<0.1
I-03	May 02 2018	<0.0005	<0.0005	0.0008	<0.0015	<0.002	<0.1
I-04	Apr 19 2018	<0.0005	<0.0005	<0.0005	<0.0015	<0.002	<0.1
Recovery Wells							
R-01	Aug 08 2018	<0.0005	<0.0005	0.0011	<0.0015	<0.002	<0.1
R-02	Aug 08 2018	<0.0005	<0.0005	<0.0005	<0.0015	<0.002	0.17
R-03	Aug 08 2018	<0.0005	<0.0005	<0.0005	<0.0015	<0.002	<0.1
R-04	Aug 08 2018	<0.0005	<0.0005	0.0009	<0.0015	<0.002	<0.1
R-05	Aug 08 2018	<0.0005	<0.0005	<0.0005	<0.0015	<0.002	<0.1
R-06	Jul 16 2018	<0.0005	<0.0005	<0.0005	<0.0015	<0.002	<0.1
R-06 (Dup)	Jul 16 2018	<0.0005	<0.0005	<0.0005	<0.0015	<0.002	<0.1
R-07	Aug 08 2018	<0.0005	<0.0005	<0.0005	<0.0015	<0.002	<0.1
R-08	Aug 08 2018	<0.0005	<0.0005	<0.0005	<0.0015	<0.002	<0.1
R-09	Apr 23 2018	<0.0005	<0.0005	<0.0005	<0.0015	<0.002	<0.1
Observation Wells							
O-01	Jun 28 2018	<0.0005	<0.0005	0.0021	<0.0015	<0.002	<0.1
O-02	Jun 28 2018	<0.0005	<0.0005	<0.0005	<0.0015	<0.002	<0.1
O-03	Jun 28 2018	<0.0005	<0.0005	<0.0005	<0.0015	<0.002	<0.1
O-04	Jun 28 2018	<0.0005	<0.0005	<0.0005	<0.0015	<0.002	<0.1
O-05	Jun 28 2018	<0.0005	<0.0005	<0.0005	<0.0015	<0.002	<0.1
O-06	Jul 05 2018	<0.0005	<0.0005	<0.0005	<0.0015	<0.002	<0.1
O-07	Jul 05 2018	<0.0005	<0.0005	<0.0005	<0.0015	<0.002	<0.1
O-07 (Dup)	Jul 05 2018	<0.0005	<0.0005	<0.0005	<0.0015	<0.002	<0.1
Westbay							
WB-01	Apr 11 2018	<0.0005	<0.0005	<0.0005	<0.0015	<0.002	<0.1
WB-02	Apr 18 2018	<0.0005	<0.0005	0.0011	<0.0015	<0.002	<0.1
WB-03	Mar 30 2018	<0.0005	<0.0005	<0.0005	<0.0015	<0.002	<0.1
WB-04	Apr 05 2018	<0.0005	<0.0005	0.001	<0.0015	<0.002	<0.1
Shaft							
Shaft	Jun 05 2018	<0.0005	<0.0005	<0.0005	<0.0015	<0.002	0.3
Maximum		<0.0005	<0.0005	0.0021	<0.0015	<0.002	0.3
AWQS		0.005	0.7	1	10	-	-

All results are in milligrams per liter (mg/L)
< = less than detection limit
AWQS = Arizona Aquifer Water Quality Standard

Table 6. Summary of Trace Metal Analytical Results,PTF Wells

Well ID	Sample Date	Aluminium	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Thallium	Zinc
Injection/Pumping Wells																		
I-01	Apr 11 2018	<0.04	<0.0005	0.0017	0.097	<0.0003	<0.0003	0.01	0.0003	0.0079	<0.3	<0.0005	0.0055	<0.001	0.0071	0.0034	<0.0005	<0.04
I-02	Jul 18 2018	<0.04	<0.0005	0.0012	0.087	<0.0003	<0.0003	0.0011	0.0003	0.055	<0.3	<0.0005	0.0052	<0.001	0.0051	0.0031	<0.0005	0.043
I-03	May 02 2018	<0.04	<0.0005	0.0018	0.091	<0.0003	<0.0003	0.0036	0.0005	0.016	<0.3	<0.0005	0.027	<0.001	0.0045	0.0027	<0.0005	<0.04
I-04	Apr 19 2018	<0.04	<0.0005	0.0014	0.061	<0.0003	<0.0003	0.0062	0.0003	0.0072	<0.3	<0.0005	0.0098	<0.001	<0.0005	<0.0025	<0.0005	<0.04
Recovery Wells																		
R-01	Aug 08 2018	<0.04	<0.0005	0.0011	0.054	<0.0003	<0.0003	0.0014	0.0003	<0.02	<0.3	<0.0005	0.0012	<0.001	0.0059	0.0027	<0.0005	<0.04
R-02	Aug 08 2018	<0.04	<0.0005	0.0019	0.09	<0.0003	0.0004	0.0024	0.0004	<0.02	<0.3	<0.0005	0.037	<0.001	0.0052	0.0025	<0.0005	<0.04
R-03	Aug 08 2018	<0.04	<0.0005	0.0014	0.083	<0.0003	<0.0003	0.0016	0.0003	<0.02	<0.3	<0.0005	0.015	<0.001	0.0039	0.0026	<0.0005	<0.04
R-04	Aug 08 2018	<0.08	<0.0005	0.0015	0.074	<0.0005	<0.0003	0.0018	0.0003	<0.02	<0.3	<0.0005	0.0079	<0.001	0.0045	0.0028	<0.0005	<0.04
R-05	Aug 08 2018	<0.08	<0.0005	0.0018	0.087	<0.0005	<0.0003	0.0017	0.0003	<0.02	<0.3	<0.0005	0.0048	<0.001	0.0053	0.0029	<0.0005	<0.04
R-06	Jul 16 2018	<0.04	<0.0005	0.0029	0.047	<0.0003	0.0014	0.0025	0.0081	1.9	<0.3	<0.0005	0.11	<0.001	0.0093	0.0039	<0.0005	0.16
R-06 (Dup)	Jul 16 2018	<0.04	<0.0005	0.0027	0.045	<0.0003	0.0013	0.0023	0.0078	1.9	<0.3	<0.0005	0.11	<0.001	0.009	0.0038	<0.0005	0.16
R-07	Aug 08 2018	<0.08	<0.0005	0.0018	0.068	<0.0005	<0.0003	0.0036	<0.0005	<0.02	<0.3	<0.0005	0.0014	<0.001	0.0033	0.0026	<0.0005	<0.04
R-08	Aug 08 2018	<0.08	<0.0005	0.0013	0.087	<0.0005	<0.0003	0.0027	<0.0005	<0.02	<0.3	<0.0005	0.014	<0.001	0.0045	0.0029	<0.0005	<0.04
R-09	Apr 23 2018	<0.08	<0.0005	0.0016	0.071	<0.0005	<0.0003	0.0051	<0.0003	0.011	<0.3	<0.0005	0.002	<0.001	0.0033	<0.0025	<0.0005	<0.04
Observation Wells																		
O-01	Jun 28 2018	<0.04	<0.0005	0.0011	0.036	<0.0003	<0.0003	0.0025	<0.0003	0.0012	<0.3	<0.0005	0.0021	<0.001	0.0017	0.0035	<0.0005	<0.04
O-02	Jun 28 2018	<0.04	<0.0005	0.0025	0.062	<0.0003	<0.0003	0.0007	0.0003	0.0052	<0.3	<0.0005	0.12	<0.001	0.0015	0.0032	<0.0005	<0.04
O-03	Jun 28 2018	<0.04	<0.0005	0.0014	0.031	<0.0003	0.0006	0.0022	<0.0003	0.0071	<0.3	<0.0005	0.0011	<0.001	0.0018	0.0031	<0.0005	<0.04
O-04	Jun 28 2018	<0.04	<0.0005	0.0017	0.11	<0.0003	<0.0003	0.0006	0.0003	0.0057	<0.3	<0.0005	0.022	<0.001	0.0059	<0.0025	<0.0005	<0.04
O-05	Jun 28 2018	<0.04	<0.0005	0.0015	0.036	<0.0003	<0.0003	0.0021	<0.0003	0.0021	<0.3	<0.0005	0.0003	<0.001	0.0023	<0.0025	<0.0005	<0.04
O-06	Jul 05 2018	0.0427	<0.0005	0.0023	0.099	<0.0003	<0.0003	0.0018	<0.0003	0.0061	<0.3	<0.0005	0.039	<0.001	0.0012	<0.0025	<0.0005	<0.04
O-07	Jul 05 2018	<0.04	<0.0005	0.0013	0.052	<0.0003	<0.0003	0.0028	<0.0003	0.012	<0.3	<0.0005	0.0003	<0.001	0.0021	<0.0025	<0.0005	<0.04
O-07 (Dup)	Jul 05 2018	<0.04	<0.0005	0.0013	0.05	<0.0003	<0.0003	0.0026	<0.0003	0.012	<0.3	<0.0005	0.0003	<0.001	0.0021	<0.0025	<0.0005	<0.04
Westbay																		
WB-01	Apr 11 2018	<0.04	<0.0005	0.0019	0.1	<0.0003	<0.0003	0.0051	0.0003	0.0063	<0.3	<0.0005	0.0046	<0.001	0.0077	0.0035	<0.0005	0.65
WB-02	Apr 18 2018	<0.04	<0.0005	0.0014	0.083	<0.0003	<0.0003	0.003	0.0006	0.046	<0.3	<0.0005	0.03	<0.001	<0.0005	<0.0025	<0.0005	1.4
WB-03	Mar 30 2018	<0.04	<0.0005	0.0018	0.092	<0.0003	<0.0003	0.0029	0.0005	0.011	<0.3	<0.001	0.056	<0.001	0.0045	0.0031	<0.001	1.9
WB-04	Apr 05 2018	<0.04	<0.0005	0.0016	0.072	<0.0003	<0.0003	0.0037	0.0004	0.016	<0.3	<0.0005	0.026	<0.001	0.0043	0.0032	<0.0005	0.85
Shaft																		
Shaft	Jun 05 2018	<0.04	<0.0005	<0.0005	0.047	<0.0003	<0.0003	0.003	0.0033	0.0021	9.6	<0.0005	1.1	<0.001	0.0061	<0.0025	<0.0005	<0.04
Maximum		0.0427	<0.0005	0.0029	0.11	<0.0003	0.0014	0.01	0.0081	1.9	9.6	<0.0005	1.1	<0.001	0.0093	0.0039	<0.0005	1.9
Arizona Aquifer Water Quality Standard		-	0.006	0.05	2	0.004	0.005	0.1	-	-	-	0.05	-	0.002	0.1	0.05	0.002	-

All results in milligrams per liter (mg/L)
< = less than detection limit

Brown AND Caldwell