

APPENDIX 2.3

GHC15-1 - GEOTECHNICAL LOG

CRIPPLE CREEK AND VICTOR GOLD MINING COMPANY, EXPLORATION DEPARTMENT

Hole Number	Depth from	Depth to	Length	Geotech lithology	Length recovered	Rubble length	RQD length	Total fractures	RQD percent	Core recovered	Joint roughness	Joint apperture	Joint condition	Hardness	RQD comments	Core diameter	Point length	Point depth	Pt Load	Pt Load comments
GHC15-1	92	98	6	42	5.5	0.3	0.7	50	12	92	3	1	Clay	1	From 92-189' PQ	3.345				PL not taken
GHC15-1	98	99	1	42	0.6	0	0.6	1	60	60	5	5	Clay	1		3.345				PL not taken
GHC15-1	99	108	9	42	8.6	0.8	3.5	30	39	96	4	1	Clay	1		3.345				PL not taken
GHC15-1	108	118	10	42	9	0.6	6.8	25	68	90	2	2	Clay	1		3.345	0.7	115.9	143	
GHC15-1	118	128	10	42	9.7	0.7	6.4	15	64	97	4	5	Clay	2		3.345	1	126.7	1214	
GHC15-1	128	137	9	42	9.6	0.3	7.8	10	87	107	3	2	Clay	3		3.345	0.85	136.3	101	
GHC15-1	137	147	10	42	9.2	0.2	7.4	11	74	92	3	1	Clay	2		3.345	0.7	144.5	1219	
GHC15-1	147	157	10	42	9.6	0.8	5.5	30	55	96	3	1	Clay	1		3.345	0.65	153.8	203	
GHC15-1	157	167.5	10.5	42	9.4	0.4	7.7	10	73	90	5	2	Clay	2		3.345	0.85	162.6	218	
GHC15-1	167.5	177.5	10	42	9.3	1.3	5.6	25	56	93	4	2	Clay	2		3.345	0.65	172.25	975	
GHC15-1	177.5	188	10.5	42	9	1	5.9	50	56	86	4	2	Clay	1		3.345	0.75	181.25	500	
GHC15-1	188	189	1	42	1.2	0.1	0.8	5	80	120	5	2	Clay	1		3.345				PL not taken
GHC15-1	189	196.5	7.5	42	6.2	0	2.25	15	30	83	5	1	Clay	2	HQ starting at 189'	2.5	0.65	193.6	450	
GHC15-1	196.5	206.5	10	81	9.85	0.4	6.7	15	67	99	2	2	Clay	2		2.5	0.5	202.6	8	
GHC15-1	206.5	217	10.5	31	9.85	0.3	7.1	10	68	94	3	1	Clay	2		2.5	0.65	213.8	25	
GHC15-1	217	227	10	31	9.65	0	7.2	10	72	97	3	1	Clay	3		2.5	0.55	222.5	83	
GHC15-1	227	237	10	31	9.5	0.6	6.1	10	61	95	3	3	Clay	2		2.5	0.55	232.8	108	
GHC15-1	237	247.5	10.5	31	9.8	0.45	7.25	10	69	93	3	1	Clay	3		2.5	0.5	246.1	289	
GHC15-1	247.5	257.5	10	31	10.2	0	9.3	7	93	102	4	1	Clay	3		2.5	0.75	255.3	1116	
GHC15-1	257.5	267.5	10	31	10	0.8	6.9	20	69	100	2	1	Clay	3		2.5	0.55	264.45	161	
GHC15-1	267.5	277.5	10	31	9.8	0.5	7.5	12	75	98	3	1	Clay	3		2.5	0.75	275.65	85	
GHC15-1	277.5	288	10.5	31	9.8	0.35	9.3	7	89	93	2	1	Clay	2		2.5	0.8	285.6	103	
GHC15-1	288	298	10	31	9.6	0.4	5.6	15	56	96	2	1	Clay	3		2.5	0.55	296.7	1145	
GHC15-1	298	308	10	31	9.3	0.6	7.65	5	77	93	3	1	Clay	3		2.5	0.75	304.4	580	
GHC15-1	308	318	10	31	9.6	0.8	6	15	60	96	3	2	Clay	2		2.5	0.5	313.9	283	
GHC15-1	318	328	10	31	9	0.4	6.2	10	62	90	3	2	Clay	3		2.5	0.85	324.35	130	
GHC15-1	328	338	10	31	9.9	0.4	8.6	10	86	99	4	1	Clay	2		2.5	0.55	337.6	34	
GHC15-1	338	340.5	2.5	31	1.95	0	1.65	2	66	78	6	1	Clay	1		2.5				PL not taken
GHC15-1	340.5	343	2.5	31	1.5	0.7	0	5	0	60	3	4	Clay	1		2.5				PL not taken
GHC15-1	343	348	5	31	4.7	0.3	3.3	10	66	94	3	3	Clay	2		2.5	0.7	347.6	53	
GHC15-1	348	358	10	31	9.7	0.2	7.95	15	80	97	3	1	Clay	2		2.5	0.6	357.65	47	
GHC15-1	358	368	10	31	8	1.6	3	15	30	80	4	2	Clay	2		2.5	0.75	365.8	138	
GHC15-1	368	378	10	31	10	0	7.5	10	75	100	2	1	Clay	2		2.5	0.55	377.75	742	
GHC15-1	378	388	10	42	9.6	0.2	5.85	5	59	96	3	2	Clay	3		2.5	0.7	386.35	31	
GHC15-1	388	398	10	42	9.7	0.3	7.2	15	72	97	2	1	Clay	2		2.5	0.7	394.5	44	
GHC15-1	398	405	7	42	5.7	0.9	4	10	57	81	2	2	Clay	2		2.5				PL not taken
GHC15-1	405	408	3	42	3.1	0.1	2.55	5	85	103	3	2	Clay	3		2.5	0.8	405.5	394	
GHC15-1	408	417.5	9.5	42	8.3	2.5	4.1	50	43	87	2	3	Clay	2		2.5	0.5	413	77	
GHC15-1	417.5	427.5	10	42	9.2	2.3	3.4	50	34	92	2	3	Clay	1		2.5				PL not taken due to fx density
GHC15-1	427.5	438	10.5	81	9.6	2.3	2.6	50	25	91	4	4	Clay	1		2.5	0.75	433.9	49	
GHC15-1	438	448	10	42	9.7	0.3	7.8	15	78	97	6	2	Clay	2		2.5	0.6	442.3	255	
GHC15-1	448	458	10	42	9.5	0.9	4.3	25	43	95	6	3	Clay	3		2.5	0.8	454.8	218	
GHC15-1	458	467	9	42	8.6	0.25	6.6	5	73	96	5	1	Clay	2		2.5	1.25	462.3	324	
GHC15-1	467	474	7	42	6.5	0.3	4	18	57	93	4	2	Clay	2		2.5	0.45	469.4	48	

Hole Number	Depth from	Depth to	Length	Geotech lithology	Length recovered	Rubble length	RQD length	Total fractures	RQD percent	Core recovered	Joint roughness	Joint apperture	Joint condition	Hardness	RQD comments	Core diameter	Point length	Point depth	Pt Load	Pt Load comments
GHC15-1	474	484.5	10.5	42	9.8	1	4.1	20	39	93	3	1	Clay	2		2.5	0.7	481.55	86	
GHC15-1	484.5	488	3.5	8	0	0	0	0	0	0	1	1	Clay	1		2.5				PL not taken. No recovery
GHC15-1	488	489	1	42	0.5	0.5	0	100	0	50	1	1	Clay	1	Clay and rubble	2.5				PL not taken. 0.5' clay and rubble
GHC15-1	489	494	5	42	3.1	1.8	0.5	100	10	62	6	4	Clay	1	Clay and rubble	2.5				PL not taken. Clay alteration and rubble.
GHC15-1	494	498	4	8	2.75	2.75	0	100	0	69	4	3	Clay	1	Clay and rubble	2.5				PL not taken. Clay and rubble.
GHC15-1	498	503	5	42	4.7	0.55	3	30	60	94	3	2	Clay	3	Clay and rubble from 498-498.5'	2.5	0.6	498.9	30	
GHC15-1	503	508	5	42	4.9	0.15	3.45	5	69	98	3	3	Clay	3		2.5	0.7	506.3	1237	
GHC15-1	508	518	10	42	10.1	0.8	8.2	30	82	101	3	2	Clay	3		2.5	1	515.25	1205	
GHC15-1	518	527	9	42	8	0.3	7.2	10	80	89	4	2	Clay	3		2.5	0.75	525.6	323	
GHC15-1	527	538	11	42	10	2.3	2.5	75	23	91	5	2	Clay	2		2.5	0			PL not taken
GHC15-1	538	545.5	7.5	42	7.7	0.3	6	15	80	103	3	2	Clay	3		2.5	0.45	538.85	17	
GHC15-1	545.5	552	6.5	42	6.6	2.1	2.2	50	34	102	3	2	Clay	1		2.5	0.7	548.25	270	
GHC15-1	552	559	7	42	6.8	0.2	3.6	15	51	97	4	4	Clay	2		2.5	0.6	556	929	
GHC15-1	559	561	2	42	1.8	0.6	0	50	0	90	5	2	Clay	2		2.5				PL not taken due to fracture density
GHC15-1	561	568	7	42	6	1.3	2.8	50	40	86	5	2	Clay	3		2.5	0.6	564.6	534	
GHC15-1	568	572	4	42	3.5	1.3	0.9	50	23	88	5	3	Clay	1		2.5				PL not taken
GHC15-1	572	577	5	42	4.8	2.6	0.5	100	10	96	3	2	Clay	1		2.5	0.5	572.2	194	
GHC15-1	577	585	8	42	7	1.3	2.8	50	35	88	5	3	Clay	1		2.5	0.75	582.55	142	
GHC15-1	585	593	8	42	7.5	0.8	2	30	25	94	4	2	Clay	1		2.5				PL not taken
GHC15-1	593	598	5	42	5.6	0.6	1.9	10	38	112	4	2	Oxide	3		2.5	0.75	594.95	308	
GHC15-1	598	608	10	42	9.7	0	6.9	15	69	97	5	1	Oxide	3		2.5		606	1386	
GHC15-1	608	618	10	42	9.6	0.5	5.6	17	56	96	3	2	Oxide	3		2.5	0.8	616.4	801	
GHC15-1	618	628	10	42	10.4	0	10	10	100	104	3	2	Oxide	3		2.5	0.5	627.6	1062	
GHC15-1	628	638	10	42	9.4	0	6.6	12	66	94	3	2	Clay	3		2.5	0.55	637.5	276	
GHC15-1	638	648	10	42	10	0	8.7	12	87	100	3	1	Clay	3		2.5	0.5	646.6	789	
GHC15-1	648	652.5	4.5	42	3.5	1.2	1	50	22	78	5	2	Clay	1		2.5				PL not taken
GHC15-1	652.5	662.5	10	42	10.6	3.3	4.5	50	45	106	3	2	Clay	1		2.5	0.5	660.1	168	
GHC15-1	662.5	673	10.5	42	10	1.1	8	25	76	95	3	1	Clay	2		2.5	0.55	670.3	316	
GHC15-1	673	678	5	42	5.3	0	4.5	5	90	106	5	2	Clay	2		2.5	1.2	675.7	137	
GHC15-1	678	688	10	42	9.9	0	7.3	20	73	99	2	1	Clay	2		2.5	0.75	679.8	719	
GHC15-1	688	698	10	42	10.3	0	7.9	15	79	103	4	1	Clay	3		2.5				
GHC15-1	698	708	10	42	10.1	0	9.5	6	95	101	6	1	Oxide	3		2.5	0.7	700.9	1183	
GHC15-1	708	718	10	42	9.7	0.4	6.8	15	68	97	4	3	Clay	3		2.5	0.7	712.2	126	
GHC15-1	718	728	10	34	9.8	0	7.9	17	79	98	4	2	Clay	3		2.5	0.7	727.2	169	
GHC15-1	728	738	10	34	10	0.2	7.8	15	78	100	4	1	Clay	3		2.5	0.6	735.2	86	
GHC15-1	738	748	10	42	9.9	0.6	7.7	12	77	99	5	1	Clay	3		2.5	0.6	747.3	72	
GHC15-1	748	758	10	34	10	0.7	6.7	20	67	100	4	2	Clay	3		2.5	0.7	754.3	38	
GHC15-1	758	768	10	42	10.2	0	5.7	20	57	102	5	1	Clay	3		2.5	0.55	767	106	
GHC15-1	768	778	10	42	10	0.4	6.6	30	66	100	4	1	Clay	3		2.5	0.6	776.5	89	
GHC15-1	778	788	10	34	10.1	0	5.85	25	59	101	4	1	Clay	2		2.5	0.7	786.1	16	
GHC15-1	788	798	10	34	9.9	0.3	7.9	10	79	99	5	2	Clay	3		2.5	1.2	796.35	62	
GHC15-1	798	808	10	34	10.1	0	8.1	10	81	101	4	1	Clay	2		2.5	0.9	806.6	429	
GHC15-1	808	818	10	34	10	0	8	10	80	100	4	2	Clay	3		2.5	0.7	816	137	
GHC15-1	818	828	10	34	10.2	0	5.9	25	59	102	3	1	Clay	3		2.5	0.8	826.6	112	

Hole Number	Depth from	Depth to	Length	Geotech lithology	Length recovered	Rubble length	RQD length	Total fractures	RQD percent	Core recovered	Joint roughness	Joint apperture	Joint condition	Hardness	RQD comments	Core diameter	Point length	Point depth	Pt Load	Pt Load comments
GHC15-1	828	838	10	34	10	0	8.3	18	83	100	3	1	Clay	2		2.5	0.5	837.6	141	
GHC15-1	838	848	10	42	9.9	0	6.3	15	63	99	5	1	Clay	3		2.5	0.75	847.6	185	
GHC15-1	848	858	10	34	9.7	0.3	6.6	20	66	97	4	1	Clay	3		2.5	0.7	857.4	372	
GHC15-1	858	868	10	34	10.1	0.2	5.9	30	59	101	3	1	Clay	3		2.5	0.7	866.7	14	
GHC15-1	868	878	10	34	9.7	0.2	6.1	25	61	97	3	2	Clay	3		2.5	0.7	875.1	46	
GHC15-1	878	888	10	34	10.1	0	7.85	15	79	101	3	2	Clay	3		2.5	0.65	885.5	294	
GHC15-1	888	898	10	34	10	0.8	4.2	40	42	100	2	1	Clay	3		2.5	0.7	894.5	42	
GHC15-1	898	902	4	34	4.3	2.6	0.6	100	15	108	2	1	Clay	2		2.5	0.65	899.87	4	
GHC15-1	902	908	6	34	6	0.7	3.25	50	54	100	3	2	Clay	3		2.5	0.65	907.35	30	
GHC15-1	908	918	10	34	10	0.3	7.7	30	77	100	2	2	Clay	3		2.5	0.7	918.5	49	
GHC15-1	918	928	10	34	10	0	6.7	20	67	100	2	1	Clay	3		2.5	0.65	924.6	8	
GHC15-1	928	938	10	34	10	1.5	3.7	50	37	100	3	1	Clay	3		2.5	0.65	934.6	45	
GHC15-1	938	948	10	34	10.1	0.9	2.4	75	24	101	3	3	Clay	3		2.5	0.55	944.7	460	
GHC15-1	948	954	6	34	6.5	2.8	0	100	0	108	3	2	Clay	3		2.5				PL not taken due to high fx density
GHC15-1	954	958	4	34	4.2	0.35	2.1	20	53	105	3	1	Clay	3		2.5	0.7	956	19	
GHC15-1	958	968	10	34	9.7	0.7	4.2	40	42	97	3	1	Clay	2		2.5	0.75	965.32	9	
GHC15-1	968	978	10	34	10.2	0.5	4.2	50	42	102	2	1	Clay	2		2.5	0.5	975.35	16	
GHC15-1	978	986	8	42	7.9	1	1.4	50	18	99	3	1	Clay	2		2.5	0.5	982.2	23	
GHC15-1	986	992	6	42	6.3	0.4	0	100	0	105	3	2	Clay	2		2.5				PL not taken
GHC15-1	992	999	7	42	7	1.2	0	75	0	100	3	1	Clay	3		2.5				PL not taken
GHC15-1	999	1009	10	42	9.4	1.3	1.7	70	17	94	2	1	Clay	2		2.5	0.8	1004.75	1	
GHC15-1	1009	1015	6	42	6.2	0.5	0.8	50	13	103	2	1	Clay	3		2.5	0.8	1013.88	12	
GHC15-1	1015	1018.5	3.5	42	3.3	0.2	1.1	30	31	94	3	2	Clay	2		2.5	0.5	1016.1	16	
GHC15-1	1018.5	1028.5	10	42	9.9	0	6.85	15	69	99	4	2	Clay	2		2.5	0.55	1027	185	
GHC15-1	1028.5	1038	9.5	42	9.5	0.7	4.6	25	48	100	3	1	Clay	2		2.5	0.5	1032.15	9	
GHC15-1	1038	1048	10	42	10	0	5.9	10	59	100	2	1	Clay	2		2.5	0.75	1044.55	52	
GHC15-1	1048	1058	10	42	9.8	0.2	5.4	20	54	98	3	1	Clay	2		2.5	0.75	1053.4	31	
GHC15-1	1058	1068	10	42	10.1	0	6	15	60	101	3	1	Clay	2		2.5	0.85	1066.9	44	
GHC15-1	1068	1078	10	42	9.3	0.3	3.4	25	34	93	3	1	Clay	3		2.5	0.9	1077.4	37	
GHC15-1	1078	1088	10	36	10	0.2	3.8	15	38	100	2	1	Clay	2		2.5	0.5	1086.7	12	
GHC15-1	1088	1098	10	34	10	1.4	2.8	50	28	100	2	1	Clay	2		2.5	0.85	1094.45	17	
GHC15-1	1098	1108	10	34	9.9	0.2	6	20	60	99	3	1	Clay	2		2.5	1.2	1105.2	83	
GHC15-1	1108	1115	7	42	6.8	1.3	1.4	50	20	97	3	1	Clay	2		2.5	0.5	1110.55	27	
GHC15-1	1115	1120.5	5.5	42	4.5	1	1.5	50	27	82	2	1	Clay	3		2.5	0.9	1119.25	17	
GHC15-1	1120.5	1128	7.5	42	7.5	0.2	4.9	10	65	100	3	1	Clay	3		2.5	0.7	1127.55	64	
GHC15-1	1128	1134	6	42	5.9	0.3	4.6	10	77	98	3	1	Clay	2		2.5	0.85	1133.23	96	
GHC15-1	1134	1143	9	42	8.9	0	6	15	67	99	3	1	Clay	3		2.5	0.5	1141.6	89	
GHC15-1	1143	1148	5	42	5.1	0.2	3.9	5	78	102	2	1	Clay	3		2.5	0.5	1147.5	132	
GHC15-1	1148	1154	6	42	5.5	1.1	2.6	50	43	92	3	1	Clay	2		2.5	0.9	1151.6	111	
GHC15-1	1154	1164	10	42	9.9	2	3.8	75	38	99	2	1	Clay	2		2.5	0.8	1160	43	
GHC15-1	1164	1174	10	42	10	9.3	0	100	0	100	3	1	Clay	1	Rubble with clay alteration from 1164-	2.5				PL not taken from 1164-1212'
GHC15-1	1174	1182	8	42	8.3	8.3	0	100	0	104	2	1	Clay	1		2.5				
GHC15-1	1182	1187.5	5.5	42	5.3	5.3	0	100	0	96	2	1	Clay	1		2.5				
GHC15-1	1187.5	1197	9.5	42	9.2	9.2	0	100	0	97	4	1	Clay	1		2.5				

Hole Number	Depth from	Depth to	Length	Geotech lithology	Length recovered	Rubble length	RQD length	Total fractures	RQD percent	Core recovered	Joint roughness	Joint apperture	Joint condition	Hardness	RQD comments	Core diameter	Point length	Point depth	Pt Load	Pt Load comments
GHC15-1	1197	1207	10	42	10.5	10.5	0	100	0	105	2	2	Clay	1		2.5				
GHC15-1	1207	1216	9	42	7.5	3.2	1.6	50	18	83	2	1	Clay	1		2.5	0.65	1212.15	9	
GHC15-1	1216	1226	10	42	10.2	10.2	0	100	0	102	2	1	Clay	1		2.5				
GHC15-1	1226	1232	6	42	6	6	0	100	0	100	2	1	Clay	1		2.5				
GHC15-1	1232	1238	6	42	5.9	3.8	0	100	0	98	2	1	Clay	1		2.5				
GHC15-1	1238	1245	7	42	7	1.2	0	75	0	100	2	1	Clay	1		2.5				
GHC15-1	1245	1255	10	42	10	3.4	0	75	0	100	2	1	Slick	1	Fx sub-parallel to core axis shows slicks on clay	2.5				
GHC15-1	1255	1264	9	42	8.8	2.5	0	50	0	98	2	1	Slick	1	see above	2.5				
GHC15-1	1264	1272	8	42	7.6	0.4	0	75	0	95	2	1	Clay	1		2.5				
GHC15-1	1272	1277	5	22	4.6	4.3	0	80	0	92	3	2	Clay	1		2.5				
GHC15-1	1277	1281.5	4.5	42	4.5	1.2	1.4	35	31	100	3	2	Clay	1		2.5				
GHC15-1	1281.5	1287.5	6	42	6.5	5.5	0	80	0	108	3	1	Clay	1		2.5				
GHC15-1	1287.5	1291.5	4	42	3.5	3.2	0	80	0	88	2	1	Clay	1		2.5				
GHC15-1	1291.5	1296	4.5	42	4.3	3.2	0	80	0	96	2	1	Clay	1		2.5				
GHC15-1	1296	1303	7	42	6.5	4.5	0	75	0	93	2	1	Clay	1		2.5				
GHC15-1	1303	1310.5	7.5	42	7.4	2.5	0	50	0	99	2	1	Clay	1		2.5				
GHC15-1	1310.5	1318	7.5	42	7	2	0.5	40	7	93	2	1	Clay	1		2.5				
GHC15-1	1318	1324	6	42	5.3	2.7	0	90	0	88	2	1	Clay	1		2.5				
GHC15-1	1324	1326	2	42	1.6	1.6	0	100	0	80	2	1	Clay	1		2.5				
GHC15-1	1326	1330	4	42	3.5	2.3	0	90	0	88	2	1	Clay	1		2.5				
GHC15-1	1330	1331.5	1.5	42	1.3	1.3	0	100	0	87	2	1	Clay	1		2.5				
GHC15-1	1331.5	1334	2.5	42	2.3	0.4	0	75	0	92	2	1	Clay	1		2.5				
GHC15-1	1334	1338	4	42	4.5	0.6	0	75	0	113	2	1	Clay	1		2.5				
GHC15-1	1338	1344	6	42	5.2	1.4	0	75	0	87	2	1	Clay	1		2.5				
GHC15-1	1344	1348	4	42	4.6	1.1	0	75	0	115	2	2	Clay	1		2.5				
GHC15-1	1348	1358	10	42	10.2	1.1	0	80	0	102	2	1	Clay	1		2.5				
GHC15-1	1358	1366	8	42	7.4	2	0	75	0	93	2	1	Clay	1		2.5				
GHC15-1	1366	1374	8	42	9	2.5	0	90	0	113	1	1	Clay	1		2.5				
GHC15-1	1374	1380	6	42	5.9	5.9	0	100	0	98	1	1	Clay	1		2.5				
GHC15-1	1380	1388	8	42	8.5	2.2	0	75	0	106	1	1	Clay	1		2.5				
GHC15-1	1388	1397	9	42	9.5	7.5	0	80	0	106	1	1	Clay	1		2.5				
GHC15-1	1397	1404.5	7.5	38	7.6	7.6	0	100	0	101	3	1	Clay	1		2.5				
GHC15-1	1404.5	1413	8.5	42	9.6	5.5	0	100	0	113	2	1	Clay	1		2.5				
GHC15-1	1413	1418.5	5.5	42	5.3	3.1	0	90	0	96	2	1	Clay	1		2.5				
GHC15-1	1418.5	1420.5	2	42	2	2	0	100	0	100	2	1	Clay	1		2.5				
GHC15-1	1420.5	1426.5	6	42	5.5	5	0	100	0	92	2	1	Clay	1		2.5				
GHC15-1	1426.5	1431	4.5	42	4.2	3.4	0	80	0	93	3	1	Clay	1		2.5				
GHC15-1	1431	1436	5	42	4.8	3.8	0	90	0	96	2	1	Clay	1		2.5				
GHC15-1	1436	1436.5	0.5	42	0.35	0.35	0	100	0	70	3	1	Clay	1		2.5				
GHC15-1	1436.5	1442	5.5	42	5.1	4	0	80	0	93	3	1	Clay	1		2.5				
GHC15-1	1442	1447	5	42	4	3.7	0	95	0	80	2	1	Clay	1		2.5				
GHC15-1	1447	1453	6	42	6.4	2.6	0.5	75	8	107	3	1	Clay	1		2.5	0.5	1451.8	23	
GHC15-1	1453	1458	5	42	4.7	0.4	0	25	0	94	3	2	Clay	1		2.5				PL not taken from 1451.8-

Hole Number	Depth from	Depth to	Length	Geotech lithology	Length recovered	Rubble length	RQD length	Total fractures	RQD percent	Core recovered	Joint roughness	Joint apperture	Joint condition	Hardness	RQD comments	Core diameter	Point length	Point depth	Pt Load	Pt Load comments
GHC15-1	1458	1462	4	42	2.9	1	0	50	0	73	3	1	Clay	1		2.5				
GHC15-1	1462	1464	2	42	1.4	1.4	0	100	0	70	1	1	Clay	1		2.5				
GHC15-1	1464	1468	4	42	3.4	3.4	0	100	0	85	3	1	Clay	1		2.5				
GHC15-1	1468	1476	8	42	7.9	7.9	0	100	0	99	3	1	Clay	1		2.5				
GHC15-1	1476	1479	3	42	2.6	2.6	0	100	0	87	2	1	Clay	1		2.5				
GHC15-1	1479	1482.5	3.5	42	3.3	3.3	0	100	0	94	2	1	Clay	1		2.5				
GHC15-1	1482.5	1488	5.5	42	5.5	5.5	0	100	0	100	3	1	Clay	1		2.5				
GHC15-1	1488	1492.5	4.5	42	3.1	3.1	0	100	0	69	3	1	Clay	1		2.5				
GHC15-1	1492.5	1495	2.5	42	2.4	2.4	0	100	0	96	2	1	Fresh	1		2.5				
GHC15-1	1495	1500	5	42	4.1	4.1	0	100	0	82	1	1	Fresh	1		2.5				
GHC15-1	1500	1508	8	42	6.8	6.8	0	100	0	85	4	5	Clay	1	decomposed to clays	2.5				
GHC15-1	1508	1513	5	42	1.4	1.4	0	100	0	28	2	4	Clay	1		2.5				
GHC15-1	1513	1517.5	4.5	42	3.3	3.3	0	100	0	73	1	1	Clay	1		2.5				
GHC15-1	1517.5	1522.5	5	42	2.7	2.7	0	100	0	54	4	3	Clay	1		2.5				
GHC15-1	1522.5	1526.5	4	42	3.6	3.6	0	100	0	90	2	2	Clay	1		2.5				
GHC15-1	1526.5	1529	2.5	42	2.1	2.1	0	100	0	84	5	1	Clay	1		2.5				
GHC15-1	1529	1532.5	3.5	42	2.6	2.6	0	100	0	74	5	5	Clay	1		2.5				
GHC15-1	1532.5	1536.5	4	42	3.5	3.5	0	100	0	88	3	2	Clay	1		2.5				
GHC15-1	1536.5	1539.5	3	42	2.9	2.9	0	100	0	97	4	4	Clay	1		2.5				
GHC15-1	1539.5	1543	3.5	42	2.6	2.6	0	100	0	74	3	2	Clay	1		2.5				
GHC15-1	1543	1548	5	42	3.9	3.9	0	100	0	78	3	2	Clay	1		2.5				
GHC15-1	1548	1551.5	3.5	42	3.2	3.2	0	100	0	91	3	2	Clay	1		2.5				
GHC15-1	1551.5	1556.5	5	42	4.6	4.6	0	100	0	92	2	2	Clay	1		2.5				
GHC15-1	1556.5	1562	5.5	42	2.1	2.1	0	100	0	38	4	4	Clay	1		2.5				
GHC15-1	1562	1564.5	2.5	42	2.1	2.2	0	100	0	84	4	3	Clay	1		2.5				
GHC15-1	1564.5	1568	3.5	42	2.9	2.9	0	100	0	83	2	3	Clay	1		2.5				
GHC15-1	1568	1572	4	42	3.5	3.5	0	100	0	88	1	2	Clay	1		2.5				
GHC15-1	1572	1575.5	3.5	42	2.8	2.8	0	100	0	80	1	1	Clay	1		2.5				
GHC15-1	1575.5	1578	2.5	42	1.6	1.6	0	100	0	64	3	1	Clay	1		2.5				
GHC15-1	1578	1582	4	42	3	3	0	100	0	75	2	1	Clay	1		2.5				
GHC15-1	1582	1586	4	42	4.3	4.3	0	100	0	108	5	5	Clay	1		2.5				
GHC15-1	1586	1591	5	42	3.9	3.9	0	100	0	78	4	3	Clay	1		2.5	0.6	1587.7	32	
GHC15-1	1591	1593	2	42	1.5	1.5	0	100	0	75	3	5	Clay	1		2.5				
GHC15-1	1593	1594.5	1.5	42	1.2	1.2	0	100	0	80	3	5	Clay	1		2.5				
GHC15-1	1594.5	1598.5	4	42	3.6	3.6	0	100	0	90	4	3	Clay	1		2.5				
GHC15-1	1598.5	1604	5.5	42	5.2	5.2	0	100	0	95	3	5	Clay	1		2.5				
GHC15-1	1604	1609	5	42	5.3	5.3	0	100	0	106	4	3	Clay	1		2.5				
GHC15-1	1609	1615	6	42	5.8	5.8	0	100	0	97	3	3	Clay	1		2.5				
GHC15-1	1615	1620	5	42	5.2	5.2	0	100	0	104	5	2	Clay	1		2.5				
GHC15-1	1620	1622	2	42	1.4	1.4	0	100	0	70	5	5	Clay	1		2.5				
GHC15-1	1622	1626.5	4.5	42	4.2	4.2	0	100	0	93	3	5	Clay	1		2.5				
GHC15-1	1626.5	1632	5.5	42	5.5	5.5	0	100	0	100	4	3	Clay	1		2.5				
GHC15-1	1632	1635	3	42	2.1	2.1	0	100	0	70	3	3	Clay	1		2.5				
GHC15-1	1635	1639.5	4.5	42	4.2	4.2	0	100	0	93	2	3	Clay	1		2.5				

Hole Number	Depth from	Depth to	Length	Geotech lithology	Length recovered	Rubble length	RQD length	Total fractures	RQD percent	Core recovered	Joint roughness	Joint apperture	Joint condition	Hardness	RQD comments	Core diameter	Point length	Point depth	Pt Load	Pt Load comments
GHC15-1	1639.5	1643.5	4	42	3.3	3.3	0	100	0	83	2	5	Clay	1		2.5				
GHC15-1	1643.5	1648	4.5	42	4.1	4.1	0	100	0	91	3	2	Clay	1		2.5				
GHC15-1	1648	1651.5	3.5	42	3.1	3.1	0	100	0	89	3	2	Clay	1		2.5				
GHC15-1	1651.5	1656	4.5	42	4.5	4.5	0	100	0	100	3	2	Clay	1		2.5				
GHC15-1	1656	1659	3	42	3	3	0	100	0	100	3	3	Clay	1		2.5				
GHC15-1	1659	1663	4	42	4.3	4.3	0	100	0	108	4	3	Clay	1		2.5				
GHC15-1	1663	1668	5	42	4.7	4.7	0	100	0	94	4	4	Clay	1		2.5				
GHC15-1	1668	1672	4	42	3.9	3.9	0	100	0	98	2	2	Clay	1		2.5				
GHC15-1	1672	1678	6	42	3.2	3.2	0	100	0	53	4	2	Clay	1		2.5				
GHC15-1	1678	1679	1	38	0.9	0.9	0	100	0	90	2	10	Clay	1		2.5				
GHC15-1	1679	1681	2	38	1.2	1.2	0	100	0	60	4	10	Clay	1		2.5				
GHC15-1	1681	1683	2	38	1.8	1.8	0	100	0	90	10	10	Clay	1		2.5				
GHC15-1	1683	1687.5	4.5	42	2.9	2.9	0	100	0	64	10	10	Clay	1		2.5				
GHC15-1	1687.5	1690.5	3	42	1.9	1.9	0	100	0	63	10	10	Clay	1		2.5				
GHC15-1	1690.5	1693.5	3	42	1.4	1.4	0	100	0	47	10	10	Clay	1		2.5				
GHC15-1	1693.5	1695	1.5	42	2	2	0	100	0	133	10	10	Clay	1		2.5				
GHC15-1	1695	1698	3	42	2.3	2.3	0	100	0	77	10	10	Clay	1		2.5				
GHC15-1	1698	1701	3	42	1.5	1.5	0	100	0	50	10	10	Clay	1		2.5				
GHC15-1	1701	1706	5	42	4.1	4.1	0	100	0	82	10	10	Clay	1		2.5				
GHC15-1	1706	1709	3	42	2.9	2.9	0	100	0	97	10	10	Clay	1		2.5				
GHC15-1	1709	1712.5	3.5	42	2.3	2.3	0	100	0	66	10	10	Clay	1		2.5				
GHC15-1	1712.5	1714.5	2	42	1	1	0	100	0	50	10	10	Clay	1	gypsum-rich, very soft	2.5				
GHC15-1	1714.5	1718	3.5	42	2.9	2.9	0	100	0	83	10	10	Clay	1		2.5				
GHC15-1	1718	1721	3	42	3	3	0	100	0	100	10	10	Clay	1		2.5				
GHC15-1	1721	1723	2	42	0.8	0.8	0	100	0	40	10	10	Clay	1		2.5				
GHC15-1	1723	1725	2	42	1	1	0	100	0	50	10	10	Clay	1		2.5				
GHC15-1	1725	1726.5	1.5	42	1.5	1.5	0	100	0	100	10	10	Clay	1		2.5				
GHC15-1	1726.5	1730.5	4	42	3.6	3.6	0	100	0	90	9	10	Clay	1		2.5	0.6	1727.7	40	
GHC15-1	1730.5	1735	4.5	42	4	4	0	100	0	89	8	10	Clay	1		2.5				no pl taken
GHC15-1	1735	1741	6	42	5.9	5.9	0	100	0	98	5	10	Clay	1		2.5	0.5	1738.8	13	
GHC15-1	1741	1744.5	3.5	42	3.3	3.3	0	100	0	94	4	10	Clay	1		2.5				no pl taken
GHC15-1	1744.5	1750	5.5	42	5.5	5.5	0	100	0	100	4	4	Clay	1		2.5				no pl taken
GHC15-1	1750	1752.5	2.5	42	2.5	2.5	0	100	0	100	4	4	Clay	1		2.5				rock too fractured, no pl taken past 1741
GHC15-1	1752.5	1755	2.5	42	1.3	1.3	0	100	0	52	3	2	Clay	1		2.5				1752-1980' no pl taken, rock too fractured
GHC15-1	1755	1757	2	42	2.4	2.4	0	100	0	120	6	10	Clay	1		2.5				
GHC15-1	1757	1761.5	4.5	42	4.5	4.5	0	100	0	100	6	10	Clay	1		2.5				
GHC15-1	1761.5	1768	6.5	42	6.5	6.5	0	100	0	100	6	5	Clay	1		2.5				
GHC15-1	1768	1772	4	42	4	4	0	100	0	100	4	4	Clay	1		2.5				
GHC15-1	1772	1778	6	42	5.8	5.8	0	100	0	97	6	10	Clay	3	rock is hard where it's not completely fractured	2.5				
GHC15-1	1778	1782	4	42	3.4	3.4	0	100	0	85	5	10	Clay	2		2.5				
GHC15-1	1782	1783	1	42	1.3	1.3	0	100	0	130	3	8	Fresh	2		2.5				
GHC15-1	1783	1784	1	42	1	1	0	100	0	100	5	10	Fresh	2		2.5				
GHC15-1	1784	1786	2	42	2	2	0	100	0	100	5	9	Clay	2		2.5				

Hole Number	Depth from	Depth to	Length	Geotech lithology	Length recovered	Rubble length	RQD length	Total fractures	RQD percent	Core recovered	Joint roughness	Joint apperture	Joint condition	Hardness	RQD comments	Core diameter	Point length	Point depth	Pt Load	Pt Load comments
GHC15-1	1786	1793	7	42	7	7	0	100	0	100	5	4	Clay	1		2.5				
GHC15-1	1793	1797.5	4.5	42	4.4	4.4	0	100	0	98	6	6	Clay	1		2.5				
GHC15-1	1797.5	1798.5	1	42	1	1	0	100	0	100	5	10	Clay	1		2.5				
GHC15-1	1798.5	1801	2.5	42	2.5	2.5	0	100	0	100	5	10	Clay	1		2.5				
GHC15-1	1801	1804.5	3.5	42	3.4	3.4	0	100	0	97	5	10	Clay	1		2.5				
GHC15-1	1804.5	1807	2.5	42	2.5	2.5	0	100	0	100	4	5	Clay	1		2.5				
GHC15-1	1807	1810.5	3.5	42	3.5	3.4	0	100	0	100	4	5	Clay	1		2.5				
GHC15-1	1810.5	1813.5	3	42	3	2.7	0	100	0	100	5	10	Clay	1		2.5				
GHC15-1	1813.5	1815.5	2	42	2	1.8	0	100	0	100	7	5	Clay	1		2.5				
GHC15-1	1815.5	1818	2.5	42	1.4	1.4	0	100	0	56	5	10	Clay	1		2.5				
GHC15-1	1818	1821	3	42	3	2.8	0	100	0	100	4	10	Clay	1		2.5				
GHC15-1	1821	1823.5	2.5	42	2.9	2.9	0	100	0	116	4	10	Clay	1		2.5				
GHC15-1	1823.5	1826	2.5	42	2.5	2.8	0	100	0	100	3	10	Clay	1		2.5				
GHC15-1	1826	1831	5	42	5	5	0	100	0	100	4	10	Clay	1		2.5				
GHC15-1	1831	1836	5	42	6.1	6.1	0	100	0	122	5	10	Clay	2		2.5				
GHC15-1	1836	1842	6	42	6	5.3	0	100	0	100	2	2	Clay	1		2.5				
GHC15-1	1842	1846	4	42	5.5	5.5	0	100	0	138	5	10	Clay	2		2.5				
GHC15-1	1846	1850.5	4.5	42	3.8	3.8	0	100	0	84	4	10	Clay	2		2.5				
GHC15-1	1850.5	1854	3.5	42	3.8	3.8	0	100	0	109	4	10	Clay	2		2.5				
GHC15-1	1854	1858.5	4.5	33	4	4	0	100	0	89	4	10	Clay	2		2.5				
GHC15-1	1858.5	1864.5	6	42	6.2	6.2	0	100	0	103	3	5	Clay	2		2.5				
GHC15-1	1864.5	1870.5	6	42	5.6	5.6	0	100	0	93	5	10	Clay	1		2.5				
GHC15-1	1870.5	1875.5	5	42	5	5	0	100	0	100	3	10	Clay	2		2.5				
GHC15-1	1875.5	1879.5	4	42	4.5	4.5	0	100	0	113	3	10	Clay	1		2.5				
GHC15-1	1879.5	1883.5	4	42	4	4	0	100	0	100	3	10	Clay	2		2.5				
GHC15-1	1883.5	1888	4.5	42	3.6	3.6	0	100	0	80	3	10	Clay	1		2.5				
GHC15-1	1888	1890	2	8	3.6	3.6	0	100	0	180	7	5	Clay	1	Fault gouge - totally decomposed to clay	2.5				
GHC15-1	1890	1891.5	1.5	8	1.1	1.1	0	100	0	73	6	10	Clay	1	clays	2.5				
GHC15-1	1891.5	1895.5	4	8	3.5	3.5	0	100	0	88	5	5	Clay	2		2.5				
GHC15-1	1895.5	1897	1.5	42	2.2	2.2	0	50	0	147	4	10	Clay	3		2.5				
GHC15-1	1897	1901	4	42	3.9	3.9	0	100	0	98	4	5	Clay	1		2.5				
GHC15-1	1901	1902.5	1.5	42	0.9	0.9	0	10	0	60	2	3	Clay	1		2.5				
GHC15-1	1902.5	1908	5.5	42	5.5	5.5	0	100	0	100	4	2	Clay	1	decomposed to clays	2.5				
GHC15-1	1908	1912.5	4.5	42	3.5	3.5	0	100	0	78	4	5	Clay	1		2.5				
GHC15-1	1912.5	1915.5	3	42	3.6	3.6	0	100	0	120	3	10	Clay	2		2.5				
GHC15-1	1915.5	1918.5	3	42	2.3	2.3	0	100	0	77	4	10	Clay	1		2.5				
GHC15-1	1918.5	1920.5	2	42	1.9	1.9	0	100	0	95	5	10	Clay	1	decomposed to clays	2.5				
GHC15-1	1920.5	1924	3.5	42	3	3	0	100	0	86	5	10	Clay	2		2.5				
GHC15-1	1924	1928	4	42	4.6	4.6	0	100	0	115	4	10	Clay	2		2.5				
GHC15-1	1928	1931.5	3.5	42	3	3	0	100	0	86	3	10	Clay	2		2.5				
GHC15-1	1931.5	1934.5	3	42	3	3	0	100	0	100	4	5	Clay	1		2.5				
GHC15-1	1934.5	1939	4.5	42	4.1	4.1	0	100	0	91	3	5	Clay	1		2.5				
GHC15-1	1939	1941	2	42	1.6	1.6	0	100	0	80	4	10	Clay	1		2.5				
GHC15-1	1941	1942.5	1.5	42	1	1	0	100	0	67	4	10	Clay	1		2.5				

Hole Number	Depth from	Depth to	Length	Geotech lithology	Length recovered	Rubble length	RQD length	Total fractures	RQD percent	Core recovered	Joint roughness	Joint apperture	Joint condition	Hardness	RQD comments	Core diameter	Point length	Point depth	Pt Load	Pt Load comments
GHC15-1	1942.5	1943.5	1	42	0.3	0.3	0	100	0	30	5	10	Clay	1		2.5				
GHC15-1	1943.5	1947.5	4	42	3.9	3.9	0	100	0	98	4	10	Clay	1		2.5				
GHC15-1	1947.5	1949.5	2	42	1.7	1.7	0	100	0	85	3	10	Clay	1		2.5				
GHC15-1	1949.5	1952.5	3	42	3.3	3.3	0	100	0	110	3	10	Clay	1		2.5				
GHC15-1	1952.5	1956.5	4	42	4	4	0	100	0	100	4	10	Clay	1		2.5				
GHC15-1	1956.5	1959	2.5	42	4	2.5	0	100	0	160	3	5	Clay	1		2.5				
GHC15-1	1959	1960	1	999	0	0	0	0	0	0					no recovery	2.5				
GHC15-1	1960	1962	2	42	2	2	0	50	0	100	3	2	Clay	2		2.5				
GHC15-1	1962	1965.5	3.5	42	3	0	0	100	0	86	3	3	Clay	2		2.5				
GHC15-1	1965.5	1969.5	4	42	3.6	3.6	0	100	0	90	3	3	Clay	2		2.5				
GHC15-1	1969.5	1970.5	1	42	1.1	1.1	0	50	0	110	5	10	Clay	2		2.5				
GHC15-1	1970.5	1974	3.5	42	3.1	3.1	0	100	0	89	4	10	Clay	2		2.5				
GHC15-1	1974	1975.5	1.5	42	1.3	1.3	0	10	0	87	5	10	Clay	2		2.5				
GHC15-1	1975.5	1978	2.5	42	3.1	3.1	0	100	0	124	5	10	Clay	2		2.5				
GHC15-1	1978	1979	1	42	1	1	0	50	0	100	4	10	Clay	2		2.5				
GHC15-1	1979	1979.5	0.5	42	0.3	0.3	0	50	0	60	5	10	Clay	2	mixed in-situ rock and cave-in from uphole	2.5				
GHC15-1	1979.5	1980.5	1	42	1.2	1.2	0	25	0	120	5	10	Clay	3		2.5				
GHC15-1	1980.5	1983.5	3	42	2.9	2.9	0	25	0	97	7	10	Clay	2	gypsum frx-fill/cement, thick selenite	2.5	0.7	1982.7	127	
GHC15-1	1983.5	1986.5	3	42	3	3	0	100	0	100	5	10	Clay	1	mixed clays and thick gypsum	2.5				
GHC15-1	1986.5	1995.5	9	42	8.9	8.9	0	100	0	99	6	10	Clay	2		2.5				
GHC15-1	1995.5	2000	4.5	42	4.9	4.9	0	100	0	109	6	10	Clay	2		2.5				
GHC15-1	2000	2002	2	42	2	2	0	10	0	100	4	10	Clay	3		2.5				
GHC15-1	2002	2008	6	42	5.8	5.8	0	100	0	97	3	10	Clay	2		2.5				
GHC15-1	2008	2013	5	42	3.9	3.9	0	100	0	78	5	10	Clay	2		2.5				
GHC15-1	2013	2019.5	6.5	42	5.9	5.9	0	100	0	91	5	10	Clay	2		2.5				
GHC15-1	2019.5	2029.5	10	42	9.8	9.8	0	100	0	98	4	5	Clay	2		2.5				
GHC15-1	2029.5	2034.5	5	42	4.7	4.7	0	50	0	94	4	5	Clay	2		2.5				
GHC15-1	2034.5	2044	9.5	42	8.9	1.5	4	30	42	94	3	5	Clay	2		2.5	0.8	2037.4	179	
GHC15-1	2044	2052	8	42	6.6	3.7	2.3	50	29	83	4	5	Clay	2		2.5	0.6	2050.5	1002	uncharacteristic rock, much harder than surroundin
GHC15-1	2052	2053	1	42	1.4	1.4	0	50	0	140	3	10	Clay	2		2.5				
GHC15-1	2053	2054.5	1.5	42	1	1	0	50	0	67	3	10	Clay	2		2.5				
GHC15-1	2054.5	2056.5	2	42	1.8	1.8	0	25	0	90	5	10	Clay	2		2.5				
GHC15-1	2056.5	2060.5	4	42	3.4	0.3	0.5	25	13	85	5	5	Clay	2		2.5	0.5	2060.3	148	
GHC15-1	2060.5	2066.5	6	42	5.5	1.7	0	50	0	92	5	5	Clay	2		2.5				
GHC15-1	2066.5	2071	4.5	42	4.3	0.7	0.5	50	11	96	3	5	Clay	2		2.5				
GHC15-1	2071	2076.5	5.5	42	4.8	1.1	0.9	50	16	87	4	5	Clay	2		2.5				
GHC15-1	2076.5	2086.5	10	31	9.6	3.5	1.5	100	15	96	4	5	Clay	2		2.5	0.9	2077.4	227	
GHC15-1	2086.5	2090	3.5	42	3.5	1.5	0.6	50	17	100	4	5	Clay	2		2.5				
GHC15-1	2090	2098	8	42	7.6	2.6	1.3	50	16	95	5	5	Clay	2		2.5	0.6	2094.5	1067	
GHC15-1	2098	2104.5	6.5	42	6.2	1.8	0.6	50	9	95	4	5	Clay	3	core is hard, but heavily fractured	2.5	0.6	2100.7	415	
GHC15-1	2104.5	2111	6.5	42	5.9	1.7	0	50	0	91	3	5	Clay	3		2.5				
GHC15-1	2111	2117.5	6.5	42	5.2	0.3	1.1	15	17	80	2	5	Clay	1		2.5	0.7	2113.8	149	
GHC15-1	2117.5	2123.5	6	42	6.4	1.7	1.3	25	22	107	4	4	Clay	2		2.5				

Hole Number	Depth from	Depth to	Length	Geotech lithology	Length recovered	Rubble length	RQD length	Total fractures	RQD percent	Core recovered	Joint roughness	Joint apperture	Joint condition	Hardness	RQD comments	Core diameter	Point length	Point depth	Pt Load	Pt Load comments
GHC15-1	2123.5	2128.5	5	42	4.1	1.5	1.1	50	22	82	5	5	Clay	2		2.5	0.7	2123.9	180	
GHC15-1	2128.5	2132.5	4	42	3.7	3.7	0	50	0	93	4	10	Clay	1		2.5				
GHC15-1	2132.5	2137.5	5	31	4.6	2.8	0	50	0	92	4	10	Clay	2		2.5				
GHC15-1	2137.5	2143	5.5	31	5.5	2.4	0.7	50	13	100	5	10	Clay	2		2.5	0.5	2139.1	185	
GHC15-1	2143	2147.5	4.5	42	4.5	4.5	0	50	0	100	5	10	Clay	2		2.5				
GHC15-1	2147.5	2152	4.5	42	4.4	1.6	0	50	0	98	4	10	Clay	2		2.5				
GHC15-1	2152	2157	5	42	4.9	1.7	0.4	50	8	98	3	10	Clay	2		2.5				
GHC15-1	2157	2162	5	42	4.4	0.4	1.7	25	34	88	3	5	Clay	2		2.5				
GHC15-1	2162	2166.5	4.5	42	4.5	2.4	0	50	0	100	3	10	Clay	2		2.5				
GHC15-1	2166.5	2172.5	6	42	5.4	2.6	0	50	0	90	5	5	Clay	1		2.5				
GHC15-1	2172.5	2178	5.5	31	5.1	0.4	0	20	0	93	3	10	Clay	2		2.5				
GHC15-1	2178	2185.5	7.5	42	7.2	2.9	0	50	0	96	4	10	Clay	1		2.5				
GHC15-1	2185.5	2192.5	7	42	7	2.4	1.2	50	17	100	3	10	Clay	2		2.5	0.6	2192.2	114	
GHC15-1	2192.5	2195.5	3	42	1.2	1.2	0	20	0	40	4	10	Clay	1		2.5				
GHC15-1	2195.5	2198	2.5	42	2.5	2.5	0	50	0	100	5	10	Clay	1		2.5				
GHC15-1	2198	2205	7	42	6.1	6.1	0	50	0	87	5	10	Clay	1		2.5				
GHC15-1	2205	2209	4	42	4	4	0	50	0	100	5	10	Clay	1		2.5				
GHC15-1	2209	2213.5	4.5	42	4.3	4.3	0	50	0	96	5	10	Clay	1		2.5				
GHC15-1	2213.5	2215.5	2	42	1.8	1.8	0	25	0	90	6	10	Clay	1		2.5				
GHC15-1	2215.5	2217.5	2	42	1.6	1.6	0	50	0	80	4	10	Clay	1		2.5				
GHC15-1	2217.5	2220.5	3	42	4.9	4.9	0	50	0	163	6	10	Clay	2		2.5				
GHC15-1	2220.5	2226	5.5	42	4.7	3.8	0.45	50	8	85	3	10	Clay	2		2.5				
GHC15-1	2226	2232	6	42	5.9	5.9	0	50	0	98	5	10	Clay	1		2.5				
GHC15-1	2232	2238	6	42	6	2	2.9	20	48	100	6	5	Clay	1	gypsum cement	2.5	0.7	2237.8	136	
GHC15-1	2238	2245.5	7.5	42	4.4	2.7	0.4	50	5	59	4	10	Clay	2		2.5				
GHC15-1	2245.5	2252	6.5	42	6.5	4.1	0	50	0	100	5	4	Clay	1		2.5				
GHC15-1	2252	2258	6	42	4.9	0.3	2.3	25	38	82	7	10	Clay	1		2.5	0.8	2253.5	559	
GHC15-1	2258	2265	7	42	3.6	2.7	0	50	0	51	6	10	Clay	1		2.5				
GHC15-1	2265	2274	9	42	3.1	3.1	0	50	0	34	5	10	Clay	1		2.5				
GHC15-1	2274	2275.5	1.5	31	1.7	0.3	0.9	10	60	113	3	10	Clay	2		2.5	0.8	2274.6	103	
GHC15-1	2275.5	2286	10.5	42	9.6	1.5	3.6	30	34	91	6	10	Clay	1	gypsum cement as above	2.5	1	2284.8	8	
GHC15-1	2286	2296	10	42	10.3	1.6	1.8	30	18	103	5	10	Clay	1		2.5				
GHC15-1	2296	2306	10	42	9.7	1.3	0.8	50	8	97	5	10	Clay	2		2.5				
GHC15-1	2306	2311	5	42	5	3.4	0	50	0	100	6	10	Clay	2		2.5				
GHC15-1	2311	2318	7	42	7	0.8	1.3	30	19	100	3	10	Clay	2		2.5	0.6	2311.3	565	
GHC15-1	2318	2323	5	4	4.7	4.3	0.4	50	8	94	7	10	Clay	1	pervasive argillic alteration	2.5				
GHC15-1	2323	2331.5	8.5	42	7.6	2.3	0.6	50	7	89	6	10	Clay	1		2.5				
GHC15-1	2331.5	2338	6.5	42	6.5	6	0.5	50	8	100	5	10	Clay	1		2.5	0.5	2335.6	38	
GHC15-1	2338	2348	10	42	9.5	2.5	1.9	50	19	95	3	5	Clay	1		2.5	0.7	2345.9	73	
GHC15-1	2348	2355.5	7.5	42	6.6	1.7	0	50	0	88	4	10	Clay	1		2.5				
GHC15-1	2355.5	2364.5	9	42	8.8	5.7	0	50	0	98	5	10	Clay	2		2.5				
GHC15-1	2364.5	2370	5.5	42	5.5	5.5	0	50	0	100	7	10	Clay	2		2.5				
GHC15-1	2370	2377	7	31	6.2	2.1	0	50	0	89	6	10	Clay	3		2.5				
GHC15-1	2377	2381	4	31	2.8	2.8	0	50	0	70	4	10	Clay	2		2.5				

Hole Number	Depth from	Depth to	Length	Geotech lithology	Length recovered	Rubble length	RQD length	Total fractures	RQD percent	Core recovered	Joint roughness	Joint apperture	Joint condition	Hardness	RQD comments	Core diameter	Point length	Point depth	Pt Load	Pt Load comments
GHC15-1	2381	2385	4	31	3.6	1.6	0	25	0	90	5	10	Clay	1		2.5				
GHC15-1	2385	2388	3	31	2.9	2.9	0	30	0	97	5	10	Clay	1		2.5				
GHC15-1	2388	2391.5	3.5	31	3.2	0.9	0	30	0	91	6	10	Clay	3	rock is hard, but highly fractured	2.5				
GHC15-1	2391.5	2401.5	10	42	9.5	1.3	0.5	30	5	95	4	5	Clay	2	2400-2401.5' fault gouge/clay vein	2.5	0.6	2398.2	339	
GHC15-1	2401.5	2413	11.5	4	1.2	1.2	0	50	0	10	8	10	Clay	1	cave-in?	2.5				
GHC15-1	2413	2418	5	42	1.9	1.9	0	50	0	38	6	10	Clay	1		2.5				
GHC15-1	2418	2424	6	31	5.2	1.3	0.5	30	8	87	5	10	Clay	2		2.5	0.5	2421.8	912	
GHC15-1	2424	2428	4	31	3.9	1.1	1	25	25	98	4	10	Clay	2		2.5	0.5	2426.8	443	
GHC15-1	2428	2433	5	31	3.3	1.8	0	30	0	66	5	10	Clay	2		2.5				
GHC15-1	2433	2443	10	31	3.9	2.4	0	30	0	39	6	10	Clay	1		2.5				
GHC15-1	2443	2448	5	31	4.2	2	0	50	0	84	7	10	Clay	1		2.5				
GHC15-1	2448	2453.5	5.5	31	5.5	1.3	2.1	25	38	100	4	5	Clay	2		2.5	1	2453.3	1089	
GHC15-1	2453.5	2463.5	10	31	9.7	0	8.9	10	89	97	4	2	Clay	3	RQD improves past this depth	2.5	1.4	2458.5	546	
GHC15-1	2463.5	2468	4.5	31	4.5	0.8	1	30	22	100	5	5	Clay	3		2.5	1	2465.4	21	
GHC15-1	2468	2478	10	42	9.7	0.7	1.5	50	15	97	4	10	Clay	2		2.5	0.9	2472.4	86	
GHC15-1	2478	2483.5	5.5	31	4.5	1	0.4	50	7	82	5	10	Clay	3		2.5				
GHC15-1	2483.5	2491.5	8	31	7.6	1	2.7	20	34	95	5	10	Clay	3		2.5	0.8	2486.1	1464	
GHC15-1	2491.5	2498	6.5	31	5.7	4.1	0	50	0	88	7	10	Clay	3		2.5				
GHC15-1	2498	2502.5	4.5	31	3.6	3.6	0	50	0	80	6	10	Clay	3		2.5				
GHC15-1	2502.5	2510	7.5	42	2.6	2.6	0	50	0	35	7	10	Clay	3		2.5				
GHC15-1	2510	2514.5	4.5	42	4.5	0	4.5	3	100	100	8	4	Clay	4		2.5	1	2514.1	47	
GHC15-1	2514.5	2518	3.5	42	3.5	0	3.5	2	100	100	6	3	Fresh	3	much more competent	2.5	1.4	2517.8	358	
GHC15-1	2518	2528	10	42	9	0	8.1	5	81	90	8	1	Fresh	2	RQD improves substantially past this depth	2.5	1.015	2528.5	204	
GHC15-1	2528	2538	10	42	8.9	0	8.3	1	83	89	6	5	Fresh	1		2.5	0.8	2533.5	1758	
GHC15-1	2538	2548	10	31	9.9	0	8.85	1	89	99	7	1	Fresh	2		2.5	1.23	2543.7	550	
GHC15-1	2548	2558	10	31	10	0	10	0	100	100				1		2.5	1.06	2554.4	356	
GHC15-1	2558	2568	10	30	10	0	8.33	6	83	100	6	1.5	Fresh	1		2.5	1	2567.1	1652	
GHC15-1	2568	2578	10	30	10	0	9.53		95	100	3	1	Healed	1		2.5	1.15	2572.7	283	
GHC15-1	2578	2588	10	42	9.36	0	7.43		74	94	2	10	Healed	2		2.5	0.8	2587.1	209	
GHC15-1	2588	2598	10	42	9.7	0	8.82		88	97	5	1	Healed	1		2.5	1.1	2594.8	374	
GHC15-1	2598	2608	10	42	9.7	0	8.22		82	97	7	2	Slick	1		2.5	0.95	2603.6	255	
GHC15-1	2608	2618	10	42	9.6	0	8.6		86	96	5	10	Healed	2		2.5	1.1	2613.4	1095	
GHC15-1	2618	2628	10	30	9.94	0.1	8.22		82	99				2		2.5	0.6	2622.6	286	
GHC15-1	2628	2638	10	30	10	0	8.91		89	100	8	<1	Fresh	1	Broke upon lifting	2.5	1.55	2629.5	227	
GHC15-1	2638	2648	10	30	10	0	8.3		83	100	5	1	Healed	1		2.5	0.9	2640.3	63	
GHC15-1	2648	2651	3	30	3	0	2.24		75	100				1		2.5	1.1	2650.2	1778	
GHC15-1	2651	2658	7	30	6.75	0	5.6		80	96	3	1	Healed	1		2.5	1	2653.8	888	
GHC15-1	2658	2668	10	30	10.25	0	9.01		90	103	4	1	Healed	1		2.5	1	2660.4	770	
GHC15-1	2668	2678	10	95	9.75	0	9.09		91	98	4	1	Healed	1		2.5	1.2	2675.3	283	
GHC15-1	2678	2688	10	30	9.9	0	9.12		91	99	4	1	Healed	1		2.5	1.1	2683.3	1352	
GHC15-1	2688	2698	10	34	10.7	0	9.23		92	107	6	1	Healed	1		2.5	0.9	2692.8	273	
GHC15-1	2698	2707	9	95	9	0	7.11		79	100	3	1	Healed	1		2.5	0.9	2702.8	214	
GHC15-1	2707	2717	10	34	10.3	0	9.4		94	103				1		2.5	1.15	2712.1	203	
GHC15-1	2717	2727.5	10.5	95	10	0	9.55		91	95				1		2.5	1.25	2723.7	394	

Hole Number	Depth from	Depth to	Length	Geotech lithology	Length recovered	Rubble length	RQD length	Total fractures	RQD percent	Core recovered	Joint roughness	Joint apperture	Joint condition	Hardness	RQD comments	Core diameter	Point length	Point depth	Pt Load	Pt Load comments
GHC15-1	2727.5	2737.5	10	42	10	0	9.42		94	100	7	1	Healed	1		2.5	0.75	2743	54	
GHC15-1	2737.5	2748	10.5	42	10.5	0	7.23		69	100	4	1.5	Healed	1		2.5	0.7	2740.6	1212	
GHC15-1	2748	2758	10	42	10.3	0	8.36		84	103	4	1	Healed	1		2.5	0.8	2750.2	3264	
GHC15-1	2758	2768	10	42	9.8	0	8.95		90	98	7	1.5	Healed	1		2.5	1.15	2763.6	2660	
GHC15-1	2768	2777	9	42	9	0	8.55		95	100				1		2.5	0.7	2769.4	1274	
GHC15-1	2777	2787	10	42	10	0	9.9	1	99	100	5	1	Fresh	1		2.5	1.2	2779.4	735	
GHC15-1	2787	2797	10	42	9.8	0	9.8	3	98	98	3	1	Fresh	1		2.5	1.1	2790.4	2415	
GHC15-1	2797	2807	10	42	9.9	0	9.2	5	92	99	5	2	Fresh	1		2.5	1.3	2799.5	607	
GHC15-1	2807	2817	10	42	10	0	9.4	6	94	100	4	2	Fresh	1		2.5	0.8	2808.3	1207	
GHC15-1	2817	2827	10	42	9.9	0	9.4	5	94	99	5	1	Fresh	3		2.5	0.8	2818.5	283	
GHC15-1	2827	2837	10	42	9.6	0	9	4	90	96	6	1	Fresh	2		2.5	0.85	2827.4	1558	
GHC15-1	2837	2847	10	42	10	0	9.2	6	92	100	6	1	Fresh	5		2.5	1.2	2840.2	926	
GHC15-1	2847	2857	10	42	9.9	0	9	5	90	99	7	1	Fresh	3		2.5	1.15	2852.8	779	
GHC15-1	2857	2867.5	10.5	42	9.9	0.4	8.5	5	81	94	7	1	Fresh	2		2.5	0.8	2861.2	1395	
GHC15-1	2867.5	2877.5	10	42	10	0	9.7	4	97	100	6	1	Fresh	2		2.5	1.2	2871.6	1390	
GHC15-1	2877.5	2888	10.5	42	9.9	0	9.8	2	93	94	6	1	Fresh	5		2.5	0.7	2881.7	706	
GHC15-1	2888	2898	10	42	9.8	0.2	6.3	10	63	98	6	5	Clay	1		2.5	0.9	2890.3	560	
GHC15-1	2898	2908	10	12	9.9	0	8.6	6	86	99	7	2	Fresh	1		2.5	1.4	2898.8	512	
GHC15-1	2908	2918	10	95	9.9	0	8.5	5	85	99	3	3	Fresh	4		2.5	0.7	2909.6	771	
GHC15-1	2918	2928	10	42	10	0	9.2	4	92	100	5	3	Fresh	1		2.5	0.8	2920.4	1739	
GHC15-1	2928	2938	10	42	9.5	0	8.9	2	89	95	4	2	Fresh	2		2.5	1.3	2933.4	626	
GHC15-1	2938	2948	10	42	9.6	0	9.2	4	92	96	4	2	Fresh	2		2.5	1	2945.5	1020	
GHC15-1	2948	2958	10	42	9.5	0.2	8.6	4	86	95	2	3	Fresh	2		2.5	1.3	2954.3	399	
GHC15-1	2958	2968	10	42	10	0.1	7.7	7	77	100	5	3	Fresh	2		2.5	0.9	2959.6	114	
GHC15-1	2968	2978	10	42	9.1	0	8.5	3	85	91	5	2	Fresh	2		2.5	1	2971.7	780	
GHC15-1	2978	2988	10	42	10	0	8.7	5	87	100	6	4	Fresh	2		2.5	0.8	2986.1	2283	
GHC15-1	2988	2998	10	42	9.4	0	7.8	4	78	94	5	3	Fresh	1		2.5	1	2996.3	748	
GHC15-1	2998	3008	10	42	9.4	0	7.6	6	76	94	5	4	Clay	1		2.5	1.1	3002.7	2559	
GHC15-1	3008	3017	9	42	9.2	0	7.8	4	87	102	5	5	Clay	1		2.5	1	3016.5	805	
GHC15-1	3017	3028	11	42	9.8	0	7.6	7	69	89	6	5	Clay	1		2.5	0.9	3025.5	1779	
GHC15-1	3028	3038	10	42	10	0	9.7	8	97	100	7	3	Clay	1		2.5	0.9	3034.7	662	broke along frx
GHC15-1	3038	3048	10	42	9.7	0	7.9	5	79	97	4	1	Healed	2		2.5	0.7	3043.4	383	
GHC15-1	3048	3057	9	38	9	2	2.4	25	27	100	7	10	Clay	1		2.5	0.7	3048.4	1004	broke along frx
GHC15-1	3057	3067.5	10.5	94	10	0	8	6	76	95	6	10	Healed	3		2.5	1	3061.5	848	
GHC15-1	3067.5	3077.5	10	38	9.8	0	7.2	6	72	98	4	3	Healed	3		2.5	0.8	3073.4	1291	
GHC15-1	3077.5	3087.5	10	38	9.9	0	6.9	5	69	99	6	2	Healed	1		2.5	1	3084.4	1070	
GHC15-1	3087.5	3097.5	10	38	9.9	0.3	8.5	5	85	99	6	1	Healed	1		2.5	1.9	3091.6	1296	
GHC15-1	3097.5	3107.5	10	94	9	0	7.5	5	75	90	6	2	Healed	1		2.5	1.2	3102.6	2214	
GHC15-1	3107.5	3117	9.5	42	9.5	0	7.9	6	83	100	5	2	Healed	3		2.5	1	3114.5	192	high gypsum mineralization, broke preferentially
GHC15-1	3117	3126.5	9.5	94	9.3	0	8.6	3	91	98	6	1	Fresh	3		2.5	0.9	3122.5	461	
GHC15-1	3126.5	3130	3.5	34	3	0	3	3	86	86	5	2	Fresh	5		2.5				no pl taken
GHC15-1	3130	3138	8	34	7.9	0	6	5	75	99	6	3	Fresh	2		2.5	1.1	3134.3	2191	
GHC15-1	3138	3148	10	38	9.8	0.6	5.9	10	59	98	5	2	Fresh	2		2.5	1.4	3140.7	1569	

Hole Number	Depth from	Depth to	Length	Geotech lithology	Length recovered	Rubble length	RQD length	Total fractures	RQD percent	Core recovered	Joint roughness	Joint apperture	Joint condition	Hardness	RQD comments	Core diameter	Point length	Point depth	Pt Load	Pt Load comments
GHC15-1	3148	3158	10	38	9.5	0	8.8	7	88	95	5	2	Fresh	2		2.5	1.4	3157.1	926	
GHC15-1	3158	3168	10	42	9.8	0.4	8.3	7	83	98	7	2	Fresh	1		2.5	0.7	3163.2	3037	
GHC15-1	3168	3178	10	42	9.9	0	8.5	5	85	99	6	3	Fresh	5		2.5	0.9	3172.6	1493	
GHC15-1	3178	3188	10	42	9.9	0	9.5	3	95	99	5	1	Fresh	5		2.5	0.7	3181.5	1949	
GHC15-1	3188	3198	10	42	9.6	0	8.7	6	87	96	4	1	Fresh	2		2.5	0.8	3194.4	1583	
GHC15-1	3198	3208	10	12	9.5	0.3	7.6	9	76	95	4	3	Healed	2		2.5	0.7	3201.1	1729	
GHC15-1	3208	3218	10	12	9.9	0	8.6	6	86	99	3	2	Healed	3		2.5	0.8	3213.6	1348	
GHC15-1	3218	3228	10	12	10	0	9.1	5	91	100	6	2	Fresh	2		2.5	0.7	3226.3	1823	
GHC15-1	3228	3238	10	12	10	0	9.1	4	91	100	3	2	Healed	5		2.5	1	3234.3	1849	
GHC15-1	3238	3248	10	12	9.3	0	8.2	5	82	93	4	3	Fresh	1		2.5	0.8	3241.5	1785	
GHC15-1	3248	3258	10	12	9.5	0	7.6	5	76	95	6	2	Fresh	5		2.5	1	3248.5	1153	
GHC15-1	3258	3268	10	12	9.7	0	8.7	6	87	97	5	2	Fresh	5		2.5	0.7	3258.4	443	
GHC15-1	3268	3278	10	12	9.9	0	8.8	4	88	99	4	2	Fresh	5		2.5	1.2	3270.8	1884	
GHC15-1	3278	3288	10	12	9.9	0	9.7	3	97	99	5	3	Fresh	2		2.5	1.2	3278.6	948	
GHC15-1	3288	3298	10	95	9.5	0	8.5	5	85	95	6	3	Fresh	4		2.5	0.8	3289.6	654	Broke preferentially
GHC15-1	3298	3308	10	10	10	0	9	10	90	100	3	3	Fresh	3		2.5	0.8	3298.4	2079	
GHC15-1	3308	3318	10	12	9.7	0	8.1	8	81	97	3	2	Fresh	4		2.5	1	3312.7	549	Highly mineralized; broke preferentially
GHC15-1	3318	3328	10	12	10	0.3	7.6	10	76	100	3	2	Fresh	4		2.5	0.9	3324.5	971	Broke along multiple faults
GHC15-1	3328	3338	10	12	9.7	0	9.7	5	97	97	5	2	Fresh	5		2.5	0.7	3335.4	2945	
GHC15-1	3338	3348	10	12	9.5	0	9	5	90	95	6	1	Fresh	4		2.5	0.8	3344.6	2432	
GHC15-1	3348	3358	10	22	9.8	0.3	8.4	7	84	98	2	1	Fresh	3		2.5	0.8	3353.2	1421	Broke preferentially
GHC15-1	3358	3368	10	12	9.9	0	9	5	90	99	5	2	Fresh	2		2.5	0.9	3366.3	954	
GHC15-1	3368	3378	10	95	10	0	9.7	3	97	100	5	2	Fresh	5		2.5	0.9	3373.3	2837	
GHC15-1	3378	3388	10	12	10	0	8.9	7	89	100	3	2	Fresh	2		2.5	1	3384.4	1053	Broke along fracture
GHC15-1	3388	3398	10	12	10	0	9.6	1	96	100	2	1	Fresh	2		2.5	0.7	3393.4	2175	
GHC15-1	3398	3408	10	12	9.6	0.3	7.3	6	73	96	5	1	Fresh	1	Highly mineralized; prone to fracture	2.5	0.8	3403.1	1953	
GHC15-1	3408	3418	10	12	10	0.2	8.2	9	82	100	5	4	Fresh	3		2.5	0.8	3412.6	969	
GHC15-1	3418	3428	10	12	9.8	0	8.7	7	87	98	3	1	Fresh	3		2.5	0.7	3419.3	2387	Broke along syenite/ 1st break was 44 along frac.
GHC15-1	3428	3433	5	12	5	0	3.8	3	76	100	3	1	Fresh	1	Highly mineralized; prone to fracture	2.5	1.1	3429.3	1472	Highly min.; broke along gypsum vein
GHC15-1	3433	3438	5	35	4.8	0	4	3	80	96	5	2	Fresh	2		2.5	0.3	3434.27	1247	Changed point; orig. broke on hardness test
GHC15-1	3438	3448	10	12	10	0	8.4	5	84	100	3	2	Fresh	1		2.5	1.3	3441.4	170	Highly min.; many fractures
GHC15-1	3448	3458	10	22	9.6	0	9	2	90	96	5	2	Fresh	1		2.5	1	3450.6	699	Highly min.; broke along fractures
GHC15-1	3458	3468	10	12	10	0	9.1	2	91	100	2	3	Slick	3	minor slickensided fault @ 3466'	2.5	1.2	3466.8	741	
GHC15-1	3468	3478	10	38	9.6	0	8.1	5	81	96	2	1	Fresh	1		2.5	0.8	3475.7	865	
GHC15-1	3478	3488	10	38	9.9	0	8.8	6	88	99	3	1	Fresh	1		2.5	0.8	3483.1	774	
GHC15-1	3488	3498	10	38	9.9	0	9.1	6	91	99	5	1	Fresh	1		2.5	1	3494.4	902	
GHC15-1	3498	3508	10	38	9.8	0	8.3	4	83	98	4	1	Fresh	4		2.5	1	3503.2	509	Broke along fracture
GHC15-1	3508	3518	10	12	9.9	0	9.5	2	95	99	4	1	Fresh	2		2.5	1	3514.7	1311	
GHC15-1	3518	3528	10	12	10	0	8.7	5	87	100	5	2	Fresh	5		2.5	0.8	3521.6	204	
GHC15-1	3528	3538	10	12	9.9	0	9.4	5	94	99	3	2	Fresh	2		2.5	0.6	3533.6	2709	
GHC15-1	3538	3548	10	12	10	0	9.1	5	91	100	4	1	Fresh	2		2.5	1	3542.7	898	
GHC15-1	3548	3558	10	12	9.5	0	8	4	80	95	5	1	Fresh	2		2.5	0.9	3555.3	498	
GHC15-1	3558	3568	10	12	10	0.7	7	15	70	100	3	4	Fresh	2		2.5	1	3564.4	1692	

Hole Number	Depth from	Depth to	Length	Geotech lithology	Length recovered	Rubble length	RQD length	Total fractures	RQD percent	Core recovered	Joint roughness	Joint apperture	Joint condition	Hardness	RQD comments	Core diameter	Point length	Point depth	Pt Load	Pt Load comments
GHC15-1	3568	3578	10	12	10	0	9.4	4	94	100	3	2	Fresh	2		2.5	1	3573.1	135	
GHC15-1	3578	3588	10	12	9.6	0	8.7	3	87	96	2	1	Fresh	2		2.5	1.2	3581.7	957	
GHC15-1	3588	3598	10	12	9.7	0	9.6	3	96	97	2	1	Fresh	2		2.5	0.8	3592.7	2507	
GHC15-1	3598	3608	10	41	10	0	9.7	4	97	100	5	3	Fresh	4		2.5	1.1	3601.4	845	
GHC15-1	3608	3618	10	41	9.9	0	9.3	6	93	99	4	3	Fresh	2		2.5	1	3614.4	270	
GHC15-1	3618	3628	10	41	9.8	0	9.4	4	94	98	2	2	Fresh	2		2.5	1	3623.5	1969	
GHC15-1	3628	3638	10	41	9.6	0	7.2	8	72	96	5	5	Fresh	2		2.5	1	3670.1	1671	
GHC15-1	3638	3648	10	41	9.8	0	9	4	90	98	2	3	Fresh	2		2.5	1	3643.1	272	
GHC15-1	3648	3658	10	41	10	0	8.5	7	85	100	4	3	Fresh	2		2.5	1	3652.1	955	
GHC15-1	3658	3668	10	41	9.7	0	8.1	4	81	97	3	1	Fresh	3		2.5	1.3	3665.4	1073	
GHC15-1	3668	3678	10	41	10	0.3	7.2	12	72	100	5	5	Fresh	1		2.5	0.9	3676.3	463	
GHC15-1	3678	3688	10	41	10	0	9.1	6	91	100	5	2	Fresh	1		2.5	1	3687.6	156	
GHC15-1	3688	3698	10	41	9.8	0	7.3	7	73	98	2	2	Fresh	1		2.5	0.6	3694.7	542	
GHC15-1	3698	3708	10	41	9.7	0	5.1	10	51	97	5	4	Fresh	1	low-angle joint set relative to core axis	2.5	0.6	3700.9	100	
GHC15-1	3708	3718	10	95	10	0	9.1	4	91	100	3	2	Fresh	1		2.5	0.8	3716.7	736	
GHC15-1	3718	3728	10	41	10	0	7.8	5	78	100	5	4	Fresh	2		2.5	1.1	3719.2	487	
GHC15-1	3728	3738	10	95	9.5	0	8.2	4	82	95	3	3	Fresh	2	joint set @ 45 deg to core axis	2.5	0.8	3734.9	105	
GHC15-1	3738	3748	10	42	9.7	0.2	4.8	20	48	97	5	10	Clay	2	broken zone 3741-3743'	2.5	0.6	3746.2	954	
GHC15-1	3748	3758	10	41	9.9	0	8.5	5	85	99	6	3	Fresh	1		2.5	0.9	3756.1	754	
GHC15-1	3758	3768	10	41	9.8	0	7.7	6	77	98	5	3	Fresh	2		2.5	1.7	3765.3	1028	
GHC15-1	3768	3778	10	41	9.8	0	8.2	4	82	98	7	5	Fresh	1		2.5	1	3777.2	1421	
GHC15-1	3778	3788	10	41	10	0	7.7	5	77	100	7	2	Fresh	1		2.5	1	3785.2	453	
GHC15-1	3788	3798	10	41	9.9	0	6.7	15	67	99	5	5	Clay	1		2.5	0.9	3792.7	1537	
GHC15-1	3798	3808	10	41	10	0	7.4	6	74	100	4	5	Fresh	1		2.5	0.7	3799.4	1333	
GHC15-1	3808	3818	10	42	10	0	8.5	6	85	100	5	2	Fresh	1		2.5	0.7	3811.3	775	
GHC15-1	3818	3828	10	42	10	0	4.8	20	48	100	6	5	Fresh	1	joint set, subparallel to core axis	2.5	0.6	3823.4	148	
GHC15-1	3828	3838	10	95	9.6	0	6	7	60	96	5	5	Fresh	2		2.5	0.7	3836.5	163	
GHC15-1	3838	3845	7	42	6.2	0.5	2.7	10	39	89	3	5	Fresh	3		2.5	0.8	3840.6	1316	
GHC15-1	3845	3852	7	42	6.3	0.2	4.5	7	64	90	6	5	Fresh	1		2.5	0.7	3847.4	1435	
GHC15-1	3852	3858	6	42	4.5	1.6	0.6	25	10	75	7	10	Clay	5	rubble, broken up zone	2.5				no pl taken
GHC15-1	3858	3865	7	42	7	0.2	6.3	3	90	100	6	10	Clay	1		2.5	0.9	3862.5	136	
GHC15-1	3865	3874	9	42	6.1	0.4	4.3	15	48	68	6	10	Clay	1		2.5	0.9	3865.7	238	

APPENDIX 2.4

GHC15-1 - CORE PHOTOGRAPHS

CRIPPLE CREEK AND VICTOR GOLD MINING COMPANY, EXPLORATION DEPARTMENT

NOTE: CORE PHOTOGRAPHS ARE AVAILABLE IN THE ELECTRONIC VERSION OF THIS REPORT

APPENDIX 3

GHC15-1 - SOLIDS SAMPLING

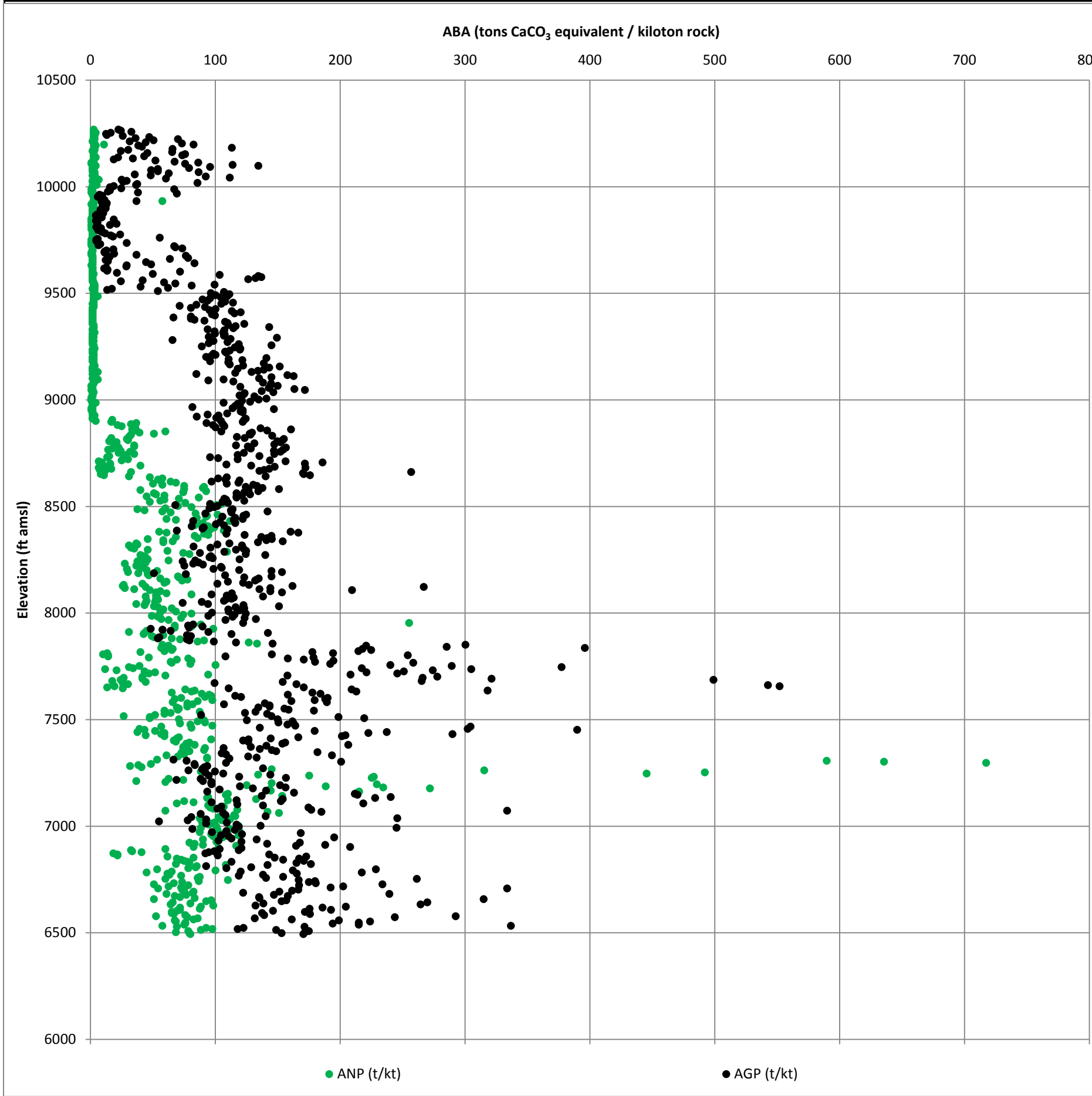
APPENDIX 3.1

GHC15-1 - SOLIDS ANALYSES

Appendix 3.1, GHC15-1 Solid Phase Sampling and Analysis Program Summary

Lab ID	Sample ID	Hole ID	From	To	Composite Static-Kinetic	ABA	NP	Sulfur Speciation	Carbon Speciation	NAG	NAG Metals	4-Acid Digest	XRD	GrainSize	HCT
L25101-01	GHC15-1/100-300/Static	GHC15-1	100	300	Static	X	X	X	X	X		X	X		
L25803-06	GHC15-1/100-300/Static	GHC15-1	100	300	Static						X				
L25101-02	GHC15-1/300-500/Static	GHC15-1	300	500	Static	X	X	X	X	X		X	X		
L25803-07	GHC15-1/300-500/Static	GHC15-1	300	500	Static						X				
L25101-03	GHC15-1/500-700/Static	GHC15-1	500	700	Static	X	X	X	X	X		X	X		
L25803-08	GHC15-1/500-700/Static	GHC15-1	500	700	Static						X				
L25101-04	GHC15-1/700-900/Static	GHC15-1	700	900	Static	X	X	X	X	X		X	X		
L25803-09	GHC15-1/700-900/Static	GHC15-1	700	900	Static						X				
L25101-05	GHC15-1/900-1100/Static	GHC15-1	900	1100	Static	X	X	X	X	X		X	X		
L25803-10	GHC15-1/900-1100/Static	GHC15-1	900	1100	Static						X				
L25101-06	GHC15-1/1100-1300/Static	GHC15-1	1100	1300	Static	X	X	X	X	X		X	X		
L25803-11	GHC15-1/1100-1300/Static	GHC15-1	1100	1300	Static						X				
L25101-07	GHC15-1/1300-1500/Static	GHC15-1	1300	1500	Static	X	X	X	X	X		X	X		
L25803-12	GHC15-1/1300-1500/Static	GHC15-1	1300	1500	Static						X				
L25101-08	GHC15-1/1500-1700/Static	GHC15-1	1500	1700	Static	X	X	X	X	X		X	X		
L25803-13	GHC15-1/1500-1700/Static	GHC15-1	1500	1700	Static						X				
L25049-01	GHC15-1/1700-1900/Static	GHC15-1	1700	1900	Static	X	X	X	X	X		X	X		
L25803-01	GHC15-1/1700-1900/Static	GHC15-1	1700	1900	Static						X				
L25049-02	GHC15-1/1900-2100/Static	GHC15-1	1900	2100	Static	X	X	X	X	X		X	X		
L25803-02	GHC15-1/1900-2100/Static	GHC15-1	1900	2100	Static						X				
L25049-03	GHC15-1/2100-2300/Static	GHC15-1	2100	2300	Static	X	X	X	X	X		X	X		
L25803-03	GHC15-1/2100-2300/Static	GHC15-1	2100	2300	Static						X				
L25049-04	GHC15-1/2300-2500/Static	GHC15-1	2300	2500	Static	X	X	X	X	X		X	X		
L25803-04	GHC15-1/2300-2500/Static	GHC15-1	2300	2500	Static						X				
L25227-01	GHC15-1/2500-2700/Static	GHC15-1	2500	2700	Static	X	X	X	X	X		X	X		
L25803-16	GHC15-1/2500-2700/Static	GHC15-1	2500	2700	Static						X				
L25227-02	GHC15-1/2700-2900/Static	GHC15-1	2700	2900	Static	X	X	X	X	X		X	X		
L25803-17	GHC15-1/2700-2900/Static	GHC15-1	2700	2900	Static						X				
L25227-03	GHC15-1/2900-3100/Static	GHC15-1	2900	3100	Static	X	X	X	X	X		X	X		
L25803-18	GHC15-1/2900-3100/Static	GHC15-1	2900	3100	Static						X				
L25227-04	GHC15-1/3100-3300/Static	GHC15-1	3100	3300	Static	X	X	X	X	X		X	X		
L25803-19	GHC15-1/3100-3300/Static	GHC15-1	3100	3300	Static						X				
L25367-01	GHC15-1/3300-3500/Static	GHC15-1	3300	3500	Static	X	X	X	X	X		X	X		
L26207-01	GHC15-1/3300-3500/Static	GHC15-1	3300	3500	Static						X				
L25367-02	GHC15-1/3500-3700/Static	GHC15-1	3500	3700	Static	X	X	X	X	X		X	X		
L26207-02	GHC15-1/3500-3700/Static	GHC15-1	3500	3700	Static						X				
L25367-03	GHC15-1/3700-3874/Static	GHC15-1	3700	3874	Static	X	X	X	X	X		X	X		
L26207-03	GHC15-1/3700-3874/Static	GHC15-1	3700	3874	Static						X				
L25102-01	GHC15-1/100-900/Kinetic	GHC15-1	100	900	Kinetic	X	X	X	X	X		X	X	X	X
L25803-14	GHC15-1/100-900/Kinetic	GHC15-1	100	900	Kinetic						X				
L25103-01	GHC15-1/900-1700/Kinetic	GHC15-1	900	1700	Kinetic	X	X	X	X	X		X	X	X	X
L25803-15	GHC15-1/900-1700/Kinetic	GHC15-1	900	1700	Kinetic						X				
L25050-01	GHC15-1/1700-2500/Kinetic	GHC15-1	1700	2500	Kinetic	X	X	X	X	X		X	X	X	X
L25803-05	GHC15-1/1700-2500/Kinetic	GHC15-1	1700	2500	Kinetic						X				
L25228-01	GHC15-1/2500-3300/Kinetic	GHC15-1	2500	3300	Kinetic	X	X	X	X	X		X	X	X	X
L25803-20	GHC15-1/2500-3300/Kinetic	GHC15-1	2500	3300	Kinetic						X				
L25368-01	GHC15-1/3300-3874/Kinetic	GHC15-1	3300	3874	Kinetic	X	X	X	X	X		X	X	X	X
L26207-04	GHC15-1/3300-3874/Kinetic	GHC15-1	3300	3874	Kinetic						X				
TOTAL #						24	24	24	24	24	24	24	24	5	5

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Notes: Data obtained as Total C and Total S from LECO furnace analysis on samples taken every 5 feet down hole
ANP (ton CaCO₃ per 1000 tons rock) = 81.42 * Total C (%)
AGP (ton CaCO₃ equivalent per 1000 tons rock) = 31.2 * Total S (%)

ACID BASE ACCOUNTING CONVERSIONS					
MOLECULAR WEIGHTS					
MW(C)	12.0	MW(O)	16.0	MW(CaCO ₃)	100.1
MW(Ca)	40.1	MW(S)	32.1	MW(FeS ₂)	120.0
MW(Fe)	55.8				
ACID GENERATING CAPACITY (AGP)					
AGP = tons of CaCO ₃ required to neutralize sulfide oxidation from 1000 tons of material					
Total Oxidation Of Pyrite To Ferric Hydroxide Solid					
$\text{FeS}_2 + 15/4 \text{O}_2 + 7/2 \text{H}_2\text{O} = \text{Fe}(\text{OH})_3 + 2 \text{SO}_4^{2-} + 4 \text{H}^+$					
$\text{CaCO}_3 + 2\text{H}^+ = \text{Ca}^{++} + \text{H}_2\text{O} + \text{CO}_2$					
$\text{FeS}_2 + 2 \text{CaCO}_3 + 15/4 \text{O}_2 + 3/2 \text{H}_2\text{O} = \text{Fe}(\text{OH})_3 + 2 \text{Ca}^{2+} + 2 \text{SO}_4^{2-} + 2 \text{CO}_2$					
Pyrite Oxidation and Neutralization					
1	g.mol FeS ₂ requires	2	g.mol CaCO ₃ to neutralize		
120.0	g of FeS ₂ requires	200.2	g of CaCO ₃ for neutralization		
1.0	g of FeS ₂ requires	1.67	g of CaCO ₃ for neutralization		
1%	FeS ₂ requires	1.67%	CaCO ₃ for neutralization		
1%	FeS ₂ is equivalent to	16.68	tons/kiloton AGP as CaCO ₃		
Sulfur Oxidation and Neutralization					
1.0	g of FeS ₂ contains	0.535	g of S		
0.535	g of S requires	1.67	g of CaCO ₃ for neutralization		
1.0	g of S requires	3.12	g of CaCO ₃ for neutralization		
1%	S requires	3.12%	CaCO ₃ for neutralization		
1%	S is equivalent to	31.2	tons/kiloton AGP as CaCO ₃		
ACID NEUTRALIZING CAPACITY (ANP)					
ANP = Tons of CaCO ₃ per 1000 tons of material					
1	ton of C is equivalent to	8.342	tons of CaCO ₃		
1%	of C by weight =	0.083	tons/ton of CaCO ₃		
1%	of C by weight =	83.417	tons/kt of CaCO ₃		
ACID-BASE ACCOUNTING - GHC15-1					
From (ft amsl)	To (ft amsl)	Total C %	ANP (t CaCO₃/Kt)	Total S %	AGP (t CaCO₃/Kt)
10000	10500	0.035	2.9	1.717	53.5
9500	10000	0.029	2.4	1.024	31.9
9000	9500	0.026	2.2	3.671	114.5
8500	9000	0.385	32.1	4.073	127.0
8000	8500	0.713	59.4	3.730	116.3
7500	8000	0.738	61.6	5.765	179.8
7000	7500	1.506	125.6	4.627	144.3
6500	7000	0.924	77.1	5.277	164.5
6000	6500	0.955	79.7	5.190	161.8
Average		0.576	48.0	3.857	120.3
Scale:	No Scale	GHC15-1 - Deep Carbonate Borehole Report			
Drawn:	A.Brown	APPENDIX 3.3			
Date:	09-Dec-2015	GHC15-1 - ACID BASE ACCOUNTING			

HOLE NUMBER	SAMPLE NUMBER	Depth from (ft)	Depth to (ft)	Average Depth (ft)	X (ft)	Y (ft)	Z (ft)	LECO Total Carbon (%)	LECO Total Sulfur (%)	Acid Neutralizing Potential (t/kt)	Acid Generating Potential (t/kt)	Net Neutralizing Potential (t/Kt)
GHC15-1	EXPAGHC15-1-001	92	97	94.5	37811	60750	10268	0.03	0.72	2.50	22.45	-19.95
GHC15-1	EXPAGHC15-1-002	97	102	99.5	37811	60750	10263	0.03	0.78	2.50	24.32	-11.12
GHC15-1	EXPAGHC15-1-003	102	107	104.5	37811	60750	10258	0.03	1.05	2.50	32.74	-18.81
GHC15-1	EXPAGHC15-1-004	107	112	109.5	37811	60750	10253	0.05	0.52	4.17	16.22	-16.01
GHC15-1	EXPAGHC15-1-005	112	117	114.5	37811	60750	10248	0.03	0.4	2.50	12.47	-18.19
GHC15-1	EXPAGHC15-1-006	117	122	119.5	37811	60750	10243	0.04	0.42	3.34	13.10	-25.25
GHC15-1	EXPAGHC15-1-007	122	127	124.5	37811	60750	10238	0.04	0.83	3.34	25.88	-6.96
GHC15-1	EXPAGHC15-1-008	127	132	129.5	37811	60750	10233	0.03	1.51	2.50	47.09	-0.41
GHC15-1	EXPAGHC15-1-009	132	137	134.5	37810	60750	10228	0.03	1.16	2.50	36.17	
GHC15-1	EXPAGHC15-1-010	137	142	139.5	37810	60750	10223	0.04	2.25	3.34	70.16	-32.97
GHC15-1	EXPAGHC15-1-011	142	147	144.5	37810	60750	10218	0.03	1.62	2.50	50.52	-7.90
GHC15-1	EXPAGHC15-1-012	147	152	149.5	37810	60750	10213	0.02	1.01	1.67	31.50	-10.91
GHC15-1	EXPAGHC15-1-013	152	157	154.5	37810	60750	10208	0.03	1.42	2.50	44.28	-3.73
GHC15-1	EXPAGHC15-1-014	157	162	159.5	37810	60750	10203	0.04	2.35	3.34	73.28	-1.76
GHC15-1	EXPAGHC15-1-015	162	167	164.5	37810	60750	10198	0.13	2.65	10.84	82.64	-5.19
GHC15-1	EXPAGHC15-1-016	167	172	169.5	37810	60750	10193	0.05	1.23	4.17	38.36	-3.63
GHC15-1	EXPAGHC15-1-017	172	177	174.5	37810	60750	10188	0.04	1.32	3.34	41.16	-2.80
GHC15-1	EXPAGHC15-1-018	177	182	179.5	37810	60750	10183	0.04	3.63	3.34	113.20	-1.45
GHC15-1	EXPAGHC15-1-019	182	187	184.5	37810	60750	10178	0.04	2.11	3.34	65.80	0.12
GHC15-1	EXPAGHC15-1-020	187	192	189.5	37810	60750	10173	0.04	0.97	3.34	30.25	-5.19
GHC15-1	EXPAGHC15-1-021	192	197	194.5	37809	60750	10168	0.02	0.78	1.67	24.32	-2.39
GHC15-1	EXPAGHC15-1-022	197	202	199.5	37809	60750	10163	0.03	2.1	2.50	65.49	-3.01
GHC15-1	EXPAGHC15-1-023	202	207	204.5	37809	60750	10158	0.03	1.46	2.50	45.53	
GHC15-1	EXPAGHC15-1-024	207	212	209.5	37809	60750	10153	0.03	2.43	2.50	75.78	-9.97
GHC15-1	EXPAGHC15-1-025	212	217	214.5	37809	60750	10148	0.03	2.36	2.50	73.59	
GHC15-1	EXPAGHC15-1-026	217	222	219.5	37809	60750	10143	0.03	1.38	2.50	43.03	-1.75
GHC15-1	EXPAGHC15-1-027	222	227	224.5	37809	60750	10138	0.05	0.71	4.17	22.14	-5.19
GHC15-1	EXPAGHC15-1-028	227	232	229.5	37809	60750	10133	0.04	1.09	3.34	33.99	-2.49
GHC15-1	EXPAGHC15-1-029	232	237	234.5	37809	60750	10128	0.03	0.6	2.50	18.71	-5.09
GHC15-1	EXPAGHC15-1-030	237	242	239.5	37809	60750	10123	0.03	1.67	2.50	52.08	-1.76
GHC15-1	EXPAGHC15-1-031	242	247	244.5	37809	60750	10118	0.03	2.16	2.50	67.36	-6.03
GHC15-1	EXPAGHC15-1-032	247	252	249.5	37809	60750	10113	0.01	2.77	0.83	86.38	-5.40
GHC15-1	EXPAGHC15-1-033	252	257	254.5	37808	60750	10108	0.01	2.43	0.83	75.78	-11.74
GHC15-1	EXPAGHC15-1-034	257	262	259.5	37808	60750	10103	0.04	3.65	3.34	113.82	-24.00
GHC15-1	EXPAGHC15-1-035	262	267	264.5	37808	60750	10098	0.05	4.31	4.17	134.40	-31.07
GHC15-1	EXPAGHC15-1-036	267	272	269.5	37808	60750	10093	0.04	3.07	3.34	95.73	-39.49
GHC15-1	EXPAGHC15-1-037	272	277	274.5	37808	60750	10088	0.02	2.53	1.67	78.90	-18.60
GHC15-1	EXPAGHC15-1-038	277	282	279.5	37808	60750	10083	0.02	1.73	1.67	53.95	-10.49
GHC15-1	EXPAGHC15-1-039	282	287	284.5	37808	60750	10078	0.02	1.56	1.67	48.65	-3.01
GHC15-1	EXPAGHC15-1-040	287	292	289.5	37808	60750	10073	0.02	1.73	1.67	53.95	-2.07
GHC15-1	EXPAGHC15-1-041	292	297	294.5	37808	60750	10068	0.04	2.78	3.34	86.69	-3.11
GHC15-1	EXPAGHC15-1-042	297	302	299.5	37808	60750	10063	0.04	2.01	3.34	62.68	-8.00
GHC15-1	EXPAGHC15-1-043	302	307	304.5	37808	60750	10058	0.04	1.14	3.34	35.55	-3.84
GHC15-1	EXPAGHC15-1-044	307	312	309.5	37808	60750	10053	0.02	1.55	1.67	48.33	-1.76
GHC15-1	EXPAGHC15-1-045	312	317	314.5	37807	60750	10048	0.03	2.96	2.50	92.30	-6.34
GHC15-1	EXPAGHC15-1-046	317	322	319.5	37807	60750	10043	0.05	3.58	4.17	111.64	-9.35
GHC15-1	EXPAGHC15-1-047	322	327	324.5	37807	60750	10038	0.03	1.94	2.50	60.50	-1.76
GHC15-1	EXPAGHC15-1-048	327	332	329.5	37807	60750	10033	0.08	0.8	6.67	24.95	-7.06
GHC15-1	EXPAGHC15-1-049	332	337	334.5	37807	60750	10028	0.02	0.93	1.67	29.00	-9.56
GHC15-1	EXPAGHC15-1-050	337	342	339.5	37807	60750	10023	0.02	0.84	1.67	26.19	-6.47
GHC15-1	EXPAGHC15-1-051	342	347	344.5	37807	60750	10018	0.03	2.75	2.50	85.76	-16.13
GHC15-1	EXPAGHC15-1-052	347	352	349.5	37807	60750	10013	0.03	1.2	2.50	37.42	-32.04
GHC15-1	EXPAGHC15-1-053	352	357	354.5	37807	60750	10008	0.06	1.17	5.01	36.49	-26.11
GHC15-1	EXPAGHC15-1-054	357	362	359.5	37807	60750	10003	0.02	0.6	1.67	18.71	-26.71
GHC15-1	EXPAGHC15-1-055	362	367	364.5	37806	60750	9998	0.02	0.5	1.67	15.59	-45.13
GHC15-1	EXPAGHC15-1-056	367	372	369.5	37806	60750	9993	0.02	0.79	1.67	24.64	-33.78
GHC15-1	EXPAGHC15-1-057	372	377	374.5	37806	60750	9988	0.01	2.15	0.83	67.05	-32.66
GHC15-1	EXPAGHC15-1-058	377	382	379.5	37806	60750	9983	0.02	0.5	1.67	15.59	-59.17
GHC15-1	EXPAGHC15-1-059	382	387	384.5	37806	60750	9978	0.02	0.45	1.67	14.03	-38.27

HOLE NUMBER	SAMPLE NUMBER	Depth from (ft)	Depth to (ft)	Average Depth (ft)	X (ft)	Y (ft)	Z (ft)	LECO Total Carbon (%)	LECO Total Sulfur (%)	Acid Neutralizing Potential (t/kt)	Acid Generating Potential (t/kt)	Net Neutralizing Potential (t/Kt)
GHC15-1	EXPAGHC15-1-060	387	392	389.5	37806	60750	9973	0.01	1.22	0.83	38.04	-12.70
GHC15-1	EXPAGHC15-1-061	392	397	394.5	37806	60750	9968	0.02	2.22	1.67	69.23	-10.83
GHC15-1	EXPAGHC15-1-062	397	402	399.5	37806	60750	9963	0.02	0.23	1.67	7.17	-12.70
GHC15-1	EXPAGHC15-1-063	402	407	404.5	37806	60750	9958	0.04	0.3	3.34	9.36	-31.72
GHC15-1	EXPAGHC15-1-064	407	412	409.5	37806	60750	9953	0.04	0.19	3.34	5.92	-13.64
GHC15-1	EXPAGHC15-1-065	412	417	414.5	37805	60750	9948	0.03	0.25	2.50	7.80	-8.65
GHC15-1	EXPAGHC15-1-066	417	422	419.5	37805	60750	9943	0.03	0.31	2.50	9.67	-9.27
GHC15-1	EXPAGHC15-1-067	422	427	424.5	37805	60750	9938	0.05	0.36	4.17	11.23	-14.88
GHC15-1	EXPAGHC15-1-068	427	432	429.5	37805	60750	9933	0.69	1.18	57.56	36.80	-14.24
GHC15-1	EXPAGHC15-1-069	432	437	434.5	37805	60750	9928	0.03	0.29	2.50	9.04	-20.19
GHC15-1	EXPAGHC15-1-070	437	442	439.5	37805	60750	9923	0.02	0.42	1.67	13.10	-18.81
GHC15-1	EXPAGHC15-1-071	442	447	444.5	37805	60750	9918	0.01	0.31	0.83	9.67	-20.37
GHC15-1	EXPAGHC15-1-072	447	452	449.5	37805	60750	9913	0.03	0.4	2.50	12.47	-12.70
GHC15-1	EXPAGHC15-1-073	452	457	454.5	37805	60750	9908	0.03	0.34	2.50	10.60	-8.65
GHC15-1	EXPAGHC15-1-074	457	462	459.5	37805	60750	9903	0.03	0.32	2.50	9.98	-12.08
GHC15-1	EXPAGHC15-1-075	462	467	464.5	37804	60750	9898	0.02	0.39	1.67	12.16	-20.68
GHC15-1	EXPAGHC15-1-076	467	472	469.5	37804	60750	9893	0.02	0.26	1.67	8.11	-28.79
GHC15-1	EXPAGHC15-1-077	472	477	474.5	37804	60750	9888	0.02	0.32	1.67	9.98	-14.45
GHC15-1	EXPAGHC15-1-078	477	482	479.5	37804	60750	9883	0.02	0.26	1.67	8.11	-24.21
GHC15-1	EXPAGHC15-1-079	482	489	485.5	37804	60750	9876	0.02	0.33	1.67	10.29	-18.19
GHC15-1	EXPAGHC15-1-080	489	494	491.5	37804	60750	9871	0.03	0.18	2.50	5.61	-24.55
GHC15-1	EXPAGHC15-1-081	494	499	496.5	37804	60750	9866	0.02	0.14	1.67	4.37	-21.62
GHC15-1	EXPAGHC15-1-082	499	504	501.5	37804	60750	9861	0.02	0.26	1.67	8.11	-24.42
GHC15-1	EXPAGHC15-1-083	504	509	506.5	37804	60750	9856	0.03	0.29	2.50	9.04	-17.88
GHC15-1	EXPAGHC15-1-084	509	514	511.5	37803	60750	9851	0.01	0.16	0.83	4.99	-15.51
GHC15-1	EXPAGHC15-1-085	514	519	516.5	37803	60750	9846	0.05	0.6	4.17	18.71	-8.83
GHC15-1	EXPAGHC15-1-086	519	524	521.5	37803	60750	9841	0.01	0.14	0.83	4.37	-8.72
GHC15-1	EXPAGHC15-1-087	524	529	526.5	37803	60750	9836	0.01	0.18	0.83	5.61	-8.10
GHC15-1	EXPAGHC15-1-088	529	534	531.5	37803	60750	9831	0.03	0.18	2.50	5.61	-11.95
GHC15-1	EXPAGHC15-1-089	534	539	536.5	37803	60750	9826	0.03	0.67	2.50	20.89	-4.78
GHC15-1	EXPAGHC15-1-090	539	544	541.5	37803	60750	9821	0.01	0.5	0.83	15.59	-6.75
GHC15-1	EXPAGHC15-1-091	544	549	546.5	37803	60750	9816	0.01	0.17	0.83	5.30	-4.57
GHC15-1	EXPAGHC15-1-092	549	554	551.5	37803	60750	9811	0.02	0.15	1.67	4.68	-4.47
GHC15-1	EXPAGHC15-1-093	554	559	556.5	37802	60750	9806	0.02	0.27	1.67	8.42	-11.12
GHC15-1	EXPAGHC15-1-094	559	564	561.5	37802	60751	9801	0.01	0.26	0.83	8.11	-53.22
GHC15-1	EXPAGHC15-1-095	564	569	566.5	37802	60751	9796	0.02	0.2	1.67	6.24	-15.48
GHC15-1	EXPAGHC15-1-096	569	574	571.5	37802	60751	9791	0.02	0.27	1.67	8.42	-12.99
GHC15-1	EXPAGHC15-1-097	574	579	576.5	37802	60751	9786	0.02	0.32	1.67	9.98	-13.82
GHC15-1	EXPAGHC15-1-098	579	584	581.5	37802	60751	9781	0.02	0.38	1.67	11.85	-29.73
GHC15-1	EXPAGHC15-1-099	584	589	586.5	37802	60751	9776	0.02	0.76	1.67	23.70	-24.42
GHC15-1	EXPAGHC15-1-100	589	594	591.5	37801	60751	9771	0.02	0.52	1.67	16.22	-21.93
GHC15-1	EXPAGHC15-1-101	594	599	596.5	37801	60751	9766	0.03	0.58	2.50	18.09	-17.56
GHC15-1	EXPAGHC15-1-102	599	604	601.5	37801	60751	9761	0.02	1.78	1.67	55.51	-91.88
GHC15-1	EXPAGHC15-1-103	604	609	606.5	37801	60751	9756	0.02	0.19	1.67	5.92	-30.66
GHC15-1	EXPAGHC15-1-104	609	614	611.5	37801	60751	9751	0.01	0.15	0.83	4.68	-94.90
GHC15-1	EXPAGHC15-1-105	614	619	616.5	37801	60751	9746	0.03	0.15	2.50	4.68	-122.97
GHC15-1	EXPAGHC15-1-106	619	624	621.5	37801	60751	9741	0.01	0.18	0.83	5.61	-50.31
GHC15-1	EXPAGHC15-1-107	624	629	626.5	37801	60751	9736	0.01	0.93	0.83	29.00	-72.57
GHC15-1	EXPAGHC15-1-108	629	634	631.5	37800	60751	9731	0.01	0.25	0.83	7.80	-16.63
GHC15-1	EXPAGHC15-1-109	634	639	636.5	37800	60751	9726	0.01	0.21	0.83	6.55	-20.99
GHC15-1	EXPAGHC15-1-110	639	644	641.5	37800	60751	9721	0.02	2.15	1.67	67.05	-8.21
GHC15-1	EXPAGHC15-1-111	644	649	646.5	37800	60751	9716	0.02	2.18	1.67	67.98	-48.12
GHC15-1	EXPAGHC15-1-112	649	654	651.5	37800	60751	9711	0.02	2.36	1.67	73.59	-71.51
GHC15-1	EXPAGHC15-1-113	654	659	656.5	37800	60751	9706	0.02	0.59	1.67	18.40	-101.14
GHC15-1	EXPAGHC15-1-114	659	664	661.5	37800	60751	9701	0.02	0.41	1.67	12.79	-6.13
GHC15-1	EXPAGHC15-1-115	664	669	666.5	37800	60751	9696	0.02	0.36	1.67	11.23	-22.97
GHC15-1	EXPAGHC15-1-116	669	674	671.5	37799	60751	9691	0.01	0.36	0.83	11.23	-6.03
GHC15-1	EXPAGHC15-1-117	674	679	676.5	37799	60751	9686	0.01	0.61	0.83	19.02	-5.40
GHC15-1	EXPAGHC15-1-118	679	684	681.5	37799	60751	9681	0.01	1.18	0.83	36.80	-8.62
GHC15-1	EXPAGHC15-1-119	684	689	686.5	37799	60751	9676	0.02	2.45	1.67	76.40	-149.16
GHC15-1	EXPAGHC15-1-120	689	694	691.5	37799	60751	9671	0.02	0.49	1.67	15.28	-83.46
GHC15-1	EXPAGHC15-1-121	694	699	696.5	37799	60751	9666	0.02	2.51	1.67	78.27	-9.77
GHC15-1	EXPAGHC15-1-122	699	704	701.5	37799	60751	9661	0.02	2.04	1.67	63.61	-95.21
GHC15-1	EXPAGHC15-1-123	704	709	706.5	37799	60751	9656	0.02	0.39	1.67	12.16	-122.34

HOLE NUMBER	SAMPLE NUMBER	Depth from (ft)	Depth to (ft)	Average Depth (ft)	X (ft)	Y (ft)	Z (ft)	LECO Total Carbon (%)	LECO Total Sulfur (%)	Acid Neutralizing Potential (t/kt)	Acid Generating Potential (t/kt)	Net Neutralizing Potential (t/Kt)
GHC15-1	EXPAGHC15-1-124	709	714	711.5	37798	60751	9651	0.02	0.45	1.67	14.03	-139.91
GHC15-1	EXPAGHC15-1-125	714	719	716.5	37798	60751	9646	0.02	1.43	1.67	44.59	-122.34
GHC15-1	EXPAGHC15-1-126	719	724	721.5	37798	60750	9641	0.02	2.67	1.67	83.26	-102.80
GHC15-1	EXPAGHC15-1-127	724	729	726.5	37798	60750	9636	0.02	1.56	1.67	48.65	-95.00
GHC15-1	EXPAGHC15-1-128	729	734	731.5	37798	60750	9631	0.01	0.93	0.83	29.00	-105.29
GHC15-1	EXPAGHC15-1-129	734	739	736.5	37798	60750	9626	0.02	0.92	1.67	28.69	-171.71
GHC15-1	EXPAGHC15-1-130	739	744	741.5	37798	60750	9621	0.02	0.4	1.67	12.47	-239.07
GHC15-1	EXPAGHC15-1-131	744	749	746.5	37798	60750	9616	0.02	0.35	1.67	10.91	-316.41
GHC15-1	EXPAGHC15-1-132	749	754	751.5	37797	60750	9611	0.02	0.44	1.67	13.72	-120.57
GHC15-1	EXPAGHC15-1-133	754	759	756.5	37797	60750	9606	0.02	0.43	1.67	13.41	-6.44
GHC15-1	EXPAGHC15-1-134	759	764	761.5	37797	60750	9601	0.02	2.3	1.67	71.72	-5.50
GHC15-1	EXPAGHC15-1-135	764	769	766.5	37797	60750	9596	0.02	0.68	1.67	21.20	-4.88
GHC15-1	EXPAGHC15-1-136	769	774	771.5	37797	60750	9591	0.03	1.6	2.50	49.89	-5.19
GHC15-1	EXPAGHC15-1-137	774	779	776.5	37797	60750	9586	0.02	3.32	1.67	103.53	4.30
GHC15-1	EXPAGHC15-1-138	779	784	781.5	37797	60750	9581	0.02	4.31	1.67	134.40	-213.91
GHC15-1	EXPAGHC15-1-139	784	789	786.5	37796	60750	9576	0.02	4.39	1.67	136.90	-262.87
GHC15-1	EXPAGHC15-1-140	789	794	791.5	37796	60750	9571	0.02	4.24	1.67	132.22	-121.61
GHC15-1	EXPAGHC15-1-141	794	799	796.5	37796	60750	9566	0.02	4.05	1.67	126.29	-153.42
GHC15-1	EXPAGHC15-1-142	799	804	801.5	37796	60750	9561	0.02	1.34	1.67	41.79	-134.49
GHC15-1	EXPAGHC15-1-143	804	809	806.5	37796	60750	9556	0.02	0.78	1.67	24.32	-240.52
GHC15-1	EXPAGHC15-1-144	809	814	811.5	37796	60750	9551	0.03	1.89	2.50	58.94	-187.10
GHC15-1	EXPAGHC15-1-145	814	819	816.5	37796	60750	9546	0.03	2.18	2.50	67.98	-271.91
GHC15-1	EXPAGHC15-1-146	819	824	821.5	37795	60750	9541	0.04	3.19	3.34	99.48	-169.94
GHC15-1	EXPAGHC15-1-147	824	829	826.5	37795	60750	9536	0.04	2.6	3.34	81.08	-78.99
GHC15-1	EXPAGHC15-1-148	829	834	831.5	37795	60750	9531	0.04	1.29	3.34	40.23	-10.59
GHC15-1	EXPAGHC15-1-149	834	839	836.5	37795	60750	9526	0.04	1.99	3.34	62.06	-12.15
GHC15-1	EXPAGHC15-1-150	839	844	841.5	37795	60750	9521	0.02	0.55	1.67	17.15	-72.65
GHC15-1	EXPAGHC15-1-151	844	849	846.5	37795	60750	9516	0.04	0.43	3.34	13.41	-50.82
GHC15-1	EXPAGHC15-1-152	849	854	851.5	37795	60750	9511	0.03	1.73	2.50	53.95	-174.10
GHC15-1	EXPAGHC15-1-153	854	859	856.5	37794	60750	9506	0.03	3.43	2.50	106.96	-207.97
GHC15-1	EXPAGHC15-1-154	859	864	861.5	37794	60750	9501	0.04	3.09	3.34	96.36	-224.83
GHC15-1	EXPAGHC15-1-155	864	869	866.5	37794	60750	9496	0.03	3.57	2.50	111.33	-210.79
GHC15-1	EXPAGHC15-1-156	869	874	871.5	37794	60750	9491	0.05	3.21	4.17	100.10	-232.41
GHC15-1	EXPAGHC15-1-157	874	879	876.5	37794	60750	9486	0.07	3.51	5.84	109.46	-107.58
GHC15-1	EXPAGHC15-1-158	879	884	881.5	37794	60750	9481	0.03	3.35	2.50	104.47	-86.36
GHC15-1	EXPAGHC15-1-159	884	889	886.5	37794	60750	9476	0.03	3.07	2.50	95.73	-63.08
GHC15-1	EXPAGHC15-1-160	889	894	891.5	37793	60750	9471	0.03	2.88	2.50	89.81	-118.80
GHC15-1	EXPAGHC15-1-161	894	899	896.5	37793	60750	9466	0.03	3.01	2.50	93.86	-66.72
GHC15-1	EXPAGHC15-1-162	899	904	901.5	37793	60750	9461	0.03	3.46	2.50	107.90	-93.33
GHC15-1	EXPAGHC15-1-163	904	909	906.5	37793	60750	9456	0.03	3.66	2.50	114.13	-74.89
GHC15-1	EXPAGHC15-1-164	909	914	911.5	37793	60750	9451	0.02	3.36	1.67	104.78	-98.63
GHC15-1	EXPAGHC15-1-165	914	919	916.5	37793	60750	9446	0.03	2.72	2.50	84.82	-147.90
GHC15-1	EXPAGHC15-1-166	919	924	921.5	37792	60750	9441	0.03	2.29	2.50	71.41	-94.07
GHC15-1	EXPAGHC15-1-167	924	929	926.5	37792	60750	9436	0.03	2.94	2.50	91.68	-132.11
GHC15-1	EXPAGHC15-1-168	929	934	931.5	37792	60750	9431	0.02	2.58	1.67	80.45	-83.78
GHC15-1	EXPAGHC15-1-169	934	939	936.5	37792	60750	9426	0.02	3.21	1.67	100.10	-363.18
GHC15-1	EXPAGHC15-1-170	939	944	941.5	37792	60750	9421	0.02	3.06	1.67	95.42	-142.71
GHC15-1	EXPAGHC15-1-171	944	949	946.5	37792	60750	9416	0.02	3.63	1.67	113.20	-103.73
GHC15-1	EXPAGHC15-1-172	949	954	951.5	37792	60750	9411	0.02	3.86	1.67	120.37	-208.51
GHC15-1	EXPAGHC15-1-173	954	959	956.5	37791	60750	9406	0.02	3.7	1.67	115.38	-165.06
GHC15-1	EXPAGHC15-1-174	959	964	961.5	37791	60750	9401	0.02	3.12	1.67	97.29	-201.96
GHC15-1	EXPAGHC15-1-175	964	969	966.5	37791	60750	9396	0.02	3.2	1.67	99.79	-161.01
GHC15-1	EXPAGHC15-1-176	969	974	971.5	37791	60750	9391	0.02	2.58	1.67	80.45	-191.88
GHC15-1	EXPAGHC15-1-177	974	979	976.5	37791	60750	9386	0.02	2.13	1.67	66.42	-199.78
GHC15-1	EXPAGHC15-1-178	979	984	981.5	37791	60750	9381	0.02	2.58	1.67	80.45	-183.46
GHC15-1	EXPAGHC15-1-179	984	989	986.5	37791	60750	9376	0.02	2.67	1.67	83.26	-195.69
GHC15-1	EXPAGHC15-1-180	989	994	991.5	37790	60750	9371	0.02	2.93	1.67	91.37	-197.70
GHC15-1	EXPAGHC15-1-181	994	999	996.5	37790	60750	9366	0.02	3.46	1.67	107.90	-113.43
GHC15-1	EXPAGHC15-1-182	999	1004	1001.5	37790	60750	9361	0.02	3.52	1.67	109.77	-144.79
GHC15-1	EXPAGHC15-1-183	1004	1009	1006.5	37790	60750	9356	0.02	3.95	1.67	123.18	-148.64
GHC15-1	EXPAGHC15-1-184	1009	1014	1011.5	37790	60750	9351	0.03	3.54	2.50	110.39	-154.59
GHC15-1	EXPAGHC15-1-185	1014	1019	1016.5	37790	60750	9346	0.03	3.73	2.50	116.32	-196.25
GHC15-1	EXPAGHC15-1-186	1019	1024	1021.5	37790	60750	9341	0.03	4.59	2.50	143.13	-235.54
GHC15-1	EXPAGHC15-1-187	1024	1029	1026.5	37789	60750	9336	0.03	3.67	2.50	114.44	-245.31

HOLE NUMBER	SAMPLE NUMBER	Depth from (ft)	Depth to (ft)	Average Depth (ft)	X (ft)	Y (ft)	Z (ft)	LECO Total Carbon (%)	LECO Total Sulfur (%)	Acid Neutralizing Potential (t/kt)	Acid Generating Potential (t/kt)	Net Neutralizing Potential (t/Kt)
GHC15-1	EXPAGHC15-1-188	1029	1034	1031.5	37789	60750	9331	0.02	3.01	1.67	93.86	-236.47
GHC15-1	EXPAGHC15-1-189	1034	1039	1036.5	37789	60750	9326	0.02	3.44	1.67	107.27	-182.42
GHC15-1	EXPAGHC15-1-190	1039	1044	1041.5	37789	60750	9321	0.03	3.19	2.50	99.48	-107.69
GHC15-1	EXPAGHC15-1-191	1044	1049	1046.5	37789	60750	9316	0.04	3.41	3.34	106.34	-171.12
GHC15-1	EXPAGHC15-1-192	1049	1054	1051.5	37789	60750	9311	0.02	3.2	1.67	99.79	-116.00
GHC15-1	EXPAGHC15-1-193	1054	1059	1056.5	37789	60750	9306	0.02	3.45	1.67	107.58	-146.79
GHC15-1	EXPAGHC15-1-194	1059	1064	1061.5	37788	60750	9301	0.02	3.43	1.67	106.96	-150.72
GHC15-1	EXPAGHC15-1-195	1064	1069	1066.5	37788	60749	9296	0.03	3.04	2.50	94.80	-114.55
GHC15-1	EXPAGHC15-1-196	1069	1074	1071.5	37788	60749	9291	0.02	4.79	1.67	149.37	-78.37
GHC15-1	EXPAGHC15-1-197	1074	1079	1076.5	37788	60749	9286	0.02	3.6	1.67	112.26	-140.12
GHC15-1	EXPAGHC15-1-198	1079	1084	1081.5	37788	60749	9281	0.02	2.11	1.67	65.80	-154.56
GHC15-1	EXPAGHC15-1-199	1084	1089	1086.5	37788	60749	9276	0.03	3.16	2.50	98.54	-161.63
GHC15-1	EXPAGHC15-1-200	1089	1094	1091.5	37788	60749	9271	0.02	3.52	1.67	109.77	-147.60
GHC15-1	EXPAGHC15-1-201	1094	1099	1096.5	37788	60749	9266	0.02	3.04	1.67	94.80	-140.12
GHC15-1	EXPAGHC15-1-202	1099	1104	1101.5	37787	60749	9261	0.02	3.81	1.67	118.81	-150.20
GHC15-1	EXPAGHC15-1-203	1104	1109	1106.5	37787	60749	9256	0.03	4.65	2.50	145.00	-175.98
GHC15-1	EXPAGHC15-1-204	1109	1114	1111.5	37787	60749	9251	0.03	2.86	2.50	89.19	-124.94
GHC15-1	EXPAGHC15-1-205	1114	1119	1116.5	37787	60749	9246	0.03	3.71	2.50	115.69	-115.79
GHC15-1	EXPAGHC15-1-206	1119	1124	1121.5	37787	60749	9241	0.04	3.85	3.34	120.06	-102.70
GHC15-1	EXPAGHC15-1-207	1124	1129	1126.5	37787	60749	9236	0.02	3.84	1.67	119.75	-86.48
GHC15-1	EXPAGHC15-1-208	1129	1134	1131.5	37787	60749	9231	0.02	3.58	1.67	111.64	-140.74
GHC15-1	EXPAGHC15-1-209	1134	1139	1136.5	37787	60749	9226	0.03	3.46	2.50	107.90	-140.12
GHC15-1	EXPAGHC15-1-210	1139	1144	1141.5	37786	60749	9221	0.02	3.49	1.67	108.83	-119.22
GHC15-1	EXPAGHC15-1-211	1144	1149	1146.5	37786	60749	9216	0.03	3.16	2.50	98.54	-135.13
GHC15-1	EXPAGHC15-1-212	1149	1154	1151.5	37786	60749	9211	0.03	3.21	2.50	100.10	-147.49
GHC15-1	EXPAGHC15-1-213	1154	1159	1156.5	37786	60749	9206	0.03	3.1	2.50	96.67	-113.39
GHC15-1	EXPAGHC15-1-214	1159	1164	1161.5	37786	60749	9201	0.02	2.97	1.67	92.62	-94.59
GHC15-1	EXPAGHC15-1-215	1164	1169	1166.5	37786	60749	9196	0.03	4.52	2.50	140.95	-125.62
GHC15-1	EXPAGHC15-1-216	1169	1174	1171.5	37786	60749	9191	0.02	3.55	1.67	110.70	-114.58
GHC15-1	EXPAGHC15-1-217	1174	1179	1176.5	37785	60749	9186	0.03	3.9	2.50	121.62	-51.93
GHC15-1	EXPAGHC15-1-218	1179	1184	1181.5	37785	60749	9181	0.02	3.07	1.67	95.73	-57.64
GHC15-1	EXPAGHC15-1-219	1184	1189	1186.5	37785	60749	9176	0.03	3.54	2.50	110.39	-46.50
GHC15-1	EXPAGHC15-1-220	1189	1194	1191.5	37785	60749	9171	0.03	4.45	2.50	138.77	-37.67
GHC15-1	EXPAGHC15-1-221	1194	1199	1196.5	37785	60749	9166	0.03	3.58	2.50	111.64	-31.71
GHC15-1	EXPAGHC15-1-222	1199	1204	1201.5	37785	60749	9161	0.04	3.92	3.34	122.24	-52.33
GHC15-1	EXPAGHC15-1-223	1204	1209	1206.5	37784	60749	9156	0.04	4.86	3.34	151.55	-43.17
GHC15-1	EXPAGHC15-1-224	1209	1214	1211.5	37784	60749	9151	0.02	4.59	1.67	143.13	-85.46
GHC15-1	EXPAGHC15-1-225	1214	1219	1216.5	37784	60749	9146	0.02	3.78	1.67	117.87	-110.41
GHC15-1	EXPAGHC15-1-226	1219	1224	1221.5	37784	60749	9141	0.03	4.45	2.50	138.77	-103.79
GHC15-1	EXPAGHC15-1-227	1224	1229	1226.5	37784	60749	9136	0.02	4.3	1.67	134.09	-84.63
GHC15-1	EXPAGHC15-1-228	1229	1234	1231.5	37784	60749	9131	0.07	4.14	5.84	129.10	-88.87
GHC15-1	EXPAGHC15-1-229	1234	1239	1236.5	37784	60749	9126	0.03	3.72	2.50	116.00	-92.91
GHC15-1	EXPAGHC15-1-230	1239	1244	1241.5	37783	60749	9121	0.02	2.72	1.67	84.82	-116.00
GHC15-1	EXPAGHC15-1-231	1244	1249	1246.5	37783	60749	9116	0.04	5.06	3.34	157.79	-95.51
GHC15-1	EXPAGHC15-1-232	1249	1254	1251.5	37783	60749	9111	0.04	5.22	3.34	162.78	-119.64
GHC15-1	EXPAGHC15-1-233	1254	1259	1256.5	37783	60749	9106	0.03	4.65	2.50	145.00	-97.39
GHC15-1	EXPAGHC15-1-234	1259	1264	1261.5	37783	60749	9101	0.02	4.33	1.67	135.03	-92.68
GHC15-1	EXPAGHC15-1-235	1264	1269	1266.5	37783	60749	9096	0.07	3.42	5.84	106.65	-67.72
GHC15-1	EXPAGHC15-1-236	1269	1274	1271.5	37782	60749	9091	0.03	3.03	2.50	94.49	-78.05
GHC15-1	EXPAGHC15-1-237	1274	1279	1276.5	37782	60749	9086	0.04	3.67	3.34	114.44	-67.68
GHC15-1	EXPAGHC15-1-238	1279	1284	1281.5	37782	60749	9081	0.03	4.43	2.50	138.14	-37.52
GHC15-1	EXPAGHC15-1-239	1284	1289	1286.5	37782	60749	9076	0.03	4.64	2.50	144.69	-64.46
GHC15-1	EXPAGHC15-1-240	1289	1294	1291.5	37782	60749	9071	0.02	4.64	1.67	144.69	-86.46
GHC15-1	EXPAGHC15-1-241	1294	1299	1296.5	37782	60749	9066	0.01	4.81	0.83	149.99	-77.27
GHC15-1	EXPAGHC15-1-242	1299	1304	1301.5	37781	60749	9061	0.01	3.85	0.83	120.06	-84.75
GHC15-1	EXPAGHC15-1-243	1304	1309	1306.5	37781	60749	9056	0.02	4.58	1.67	142.82	-54.49
GHC15-1	EXPAGHC15-1-244	1309	1314	1311.5	37781	60749	9051	0.02	5.24	1.67	163.40	-42.14
GHC15-1	EXPAGHC15-1-245	1314	1319	1316.5	37781	60749	9046	0.01	5.51	0.83	171.82	-49.02
GHC15-1	EXPAGHC15-1-246	1319	1324	1321.5	37781	60749	9041	0.02	4.4	1.67	137.21	-87.52
GHC15-1	EXPAGHC15-1-247	1324	1329	1326.5	37780	60749	9036	0.03	4.7	2.50	146.56	-82.84
GHC15-1	EXPAGHC15-1-248	1329	1334	1331.5	37780	60749	9031	0.02	3.96	1.67	123.49	-102.07
GHC15-1	EXPAGHC15-1-249	1334	1339	1336.5	37780	60749	9026	0.02	3.94	1.67	122.86	-93.44
GHC15-1	EXPAGHC15-1-250	1339	1344	1341.5	37780	60749	9021	0.02	3.83	1.67	119.43	-144.58
GHC15-1	EXPAGHC15-1-251	1344	1349	1346.5	37780	60749	9016	0.02	4.21	1.67	131.28	-137.10

HOLE NUMBER	SAMPLE NUMBER	Depth from (ft)	Depth to (ft)	Average Depth (ft)	X (ft)	Y (ft)	Z (ft)	LECO Total Carbon (%)	LECO Total Sulfur (%)	Acid Neutralizing Potential (t/kt)	Acid Generating Potential (t/kt)	Net Neutralizing Potential (t/Kt)
GHC15-1	EXPAGHC15-1-252	1349	1354	1351.5	37780	60749	9011	0.01	4.23	0.83	131.91	-99.89
GHC15-1	EXPAGHC15-1-253	1354	1359	1356.5	37779	60749	9006	0.01	4.52	0.83	140.95	-93.44
GHC15-1	EXPAGHC15-1-254	1359	1364	1361.5	37779	60749	9001	0.01	4.32	0.83	134.71	-157.27
GHC15-1	EXPAGHC15-1-255	1364	1369	1366.5	37779	60749	8996	0.01	3.89	0.83	121.30	-151.97
GHC15-1	EXPAGHC15-1-256	1369	1374	1371.5	37779	60749	8991	0.02	4.1	1.67	127.85	-83.15
GHC15-1	EXPAGHC15-1-257	1374	1379	1376.5	37779	60749	8986	0.05	3.42	4.17	106.65	-94.90
GHC15-1	EXPAGHC15-1-258	1379	1384	1381.5	37778	60749	8981	0.02	3.78	1.67	117.87	-73.38
GHC15-1	EXPAGHC15-1-259	1384	1389	1386.5	37778	60749	8976	0.02	3.84	1.67	119.75	-160.80
GHC15-1	EXPAGHC15-1-260	1389	1394	1391.5	37778	60749	8971	0.02	3.72	1.67	116.00	-112.05
GHC15-1	EXPAGHC15-1-261	1394	1399	1396.5	37778	60749	8966	0.02	2.62	1.67	81.70	-52.80
GHC15-1	EXPAGHC15-1-262	1399	1404	1401.5	37778	60749	8961	0.01	3.65	0.83	113.82	-56.96
GHC15-1	EXPAGHC15-1-263	1404	1409	1406.5	37778	60749	8956	0.02	4.71	1.67	146.88	-82.84
GHC15-1	EXPAGHC15-1-264	1409	1414	1411.5	37777	60749	8951	0.01	3.91	0.83	121.93	-98.32
GHC15-1	EXPAGHC15-1-265	1414	1419	1416.5	37777	60749	8946	0.02	3.86	1.67	120.37	-64.93
GHC15-1	EXPAGHC15-1-266	1419	1424	1421.5	37777	60749	8941	0.02	3.91	1.67	121.93	-98.09
GHC15-1	EXPAGHC15-1-267	1424	1429	1426.5	37777	60749	8936	0.02	3.51	1.67	109.46	-101.31
GHC15-1	EXPAGHC15-1-268	1429	1434	1431.5	37777	60749	8931	0.02	3.01	1.67	93.86	-76.79
GHC15-1	EXPAGHC15-1-269	1434	1439	1436.5	37776	60749	8926	0.04	3.29	3.34	102.59	-86.16
GHC15-1	EXPAGHC15-1-270	1439	1444	1441.5	37776	60749	8921	0.03	2.73	2.50	85.13	-76.08
GHC15-1	EXPAGHC15-1-271	1444	1449	1446.5	37776	60749	8916	0.02	3.23	1.67	100.72	-112.67
GHC15-1	EXPAGHC15-1-272	1449	1454	1451.5	37776	60749	8911	0.02	3.99	1.67	124.42	-119.11
GHC15-1	EXPAGHC15-1-273	1454	1459	1456.5	37776	60749	8906	0.21	3.95	17.52	123.18	-117.77
GHC15-1	EXPAGHC15-1-274	1459	1464	1461.5	37775	60749	8901	0.05	3.35	4.17	104.47	-114.23
GHC15-1	EXPAGHC15-1-275	1464	1469	1466.5	37775	60749	8896	0.2	3.91	16.68	121.93	-107.58
GHC15-1	EXPAGHC15-1-276	1469	1474	1471.5	37775	60749	8891	0.44	2.98	36.70	92.93	-179.61
GHC15-1	EXPAGHC15-1-277	1474	1479	1476.5	37775	60749	8886	0.39	3.4	32.53	106.02	-149.05
GHC15-1	EXPAGHC15-1-278	1479	1484	1481.5	37775	60749	8881	0.26	3.15	21.69	98.23	-135.95
GHC15-1	EXPAGHC15-1-279	1484	1489	1486.5	37775	60749	8876	0.3	3.44	25.03	107.27	-157.99
GHC15-1	EXPAGHC15-1-280	1489	1494	1491.5	37774	60749	8871	0.43	3.21	35.87	100.10	-156.74
GHC15-1	EXPAGHC15-1-281	1494	1499	1496.5	37774	60749	8866	0.42	4.37	35.04	136.27	-105.08
GHC15-1	EXPAGHC15-1-282	1499	1504	1501.5	37774	60749	8861	0.4	5.15	33.37	160.60	-104.98
GHC15-1	EXPAGHC15-1-283	1504	1509	1506.5	37774	60749	8856	0.44	4.54	36.70	141.57	-95.94
GHC15-1	EXPAGHC15-1-284	1509	1514	1511.5	37774	60749	8851	0.72	3.36	60.06	104.78	-147.59
GHC15-1	EXPAGHC15-1-285	1514	1519	1516.5	37774	60749	8846	0.47	4.15	39.21	129.41	-96.19
GHC15-1	EXPAGHC15-1-286	1519	1524	1521.5	37773	60749	8841	0.61	4.09	50.88	127.54	-102.22
GHC15-1	EXPAGHC15-1-287	1524	1529	1526.5	37773	60749	8836	0.39	4.11	32.53	128.17	-107.84
GHC15-1	EXPAGHC15-1-288	1529	1534	1531.5	37773	60749	8831	0.38	4.67	31.70	145.63	-106.08
GHC15-1	EXPAGHC15-1-289	1534	1539	1536.5	37773	60749	8826	0.37	3.76	30.86	117.25	-114.73
GHC15-1	EXPAGHC15-1-290	1539	1544	1541.5	37773	60749	8821	0.2	3.96	16.68	123.49	-163.48
GHC15-1	EXPAGHC15-1-291	1544	1549	1546.5	37773	60749	8816	0.35	4.97	29.20	154.98	-116.49
GHC15-1	EXPAGHC15-1-292	1549	1554	1551.5	37773	60749	8811	0.36	4.94	30.03	154.05	-124.49
GHC15-1	EXPAGHC15-1-293	1554	1559	1556.5	37772	60749	8806	0.18	4.8	15.02	149.68	-108.50
GHC15-1	EXPAGHC15-1-294	1559	1564	1561.5	37772	60749	8801	0.25	4.88	20.85	152.18	-132.71
GHC15-1	EXPAGHC15-1-295	1564	1569	1566.5	37772	60749	8796	0.23	4.21	19.19	131.28	-132.81
GHC15-1	EXPAGHC15-1-296	1569	1574	1571.5	37772	60749	8791	0.25	4.72	20.85	147.19	-127.49
GHC15-1	EXPAGHC15-1-297	1574	1579	1576.5	37772	60749	8786	0.42	3.74	35.04	116.63	-139.59
GHC15-1	EXPAGHC15-1-298	1579	1584	1581.5	37772	60749	8781	0.42	4.04	35.04	125.98	-146.03
GHC15-1	EXPAGHC15-1-299	1584	1589	1586.5	37771	60749	8776	0.27	5.02	22.52	156.54	-191.34
GHC15-1	EXPAGHC15-1-300	1589	1594	1591.5	37771	60749	8771	0.21	4.12	17.52	128.48	-197.90
GHC15-1	EXPAGHC15-1-301	1594	1599	1596.5	37771	60749	8766	0.17	4.95	14.18	154.36	-187.27
GHC15-1	EXPAGHC15-1-302	1599	1604	1601.5	37771	60749	8761	0.29	4.71	24.19	146.88	-108.61
GHC15-1	EXPAGHC15-1-303	1604	1609	1606.5	37771	60749	8756	0.38	4.88	31.70	152.18	-121.60
GHC15-1	EXPAGHC15-1-304	1609	1614	1611.5	37770	60749	8751	0.27	3.94	22.52	122.86	-142.29
GHC15-1	EXPAGHC15-1-305	1614	1619	1616.5	37770	60749	8746	0.42	4.72	35.04	147.19	-144.67
GHC15-1	EXPAGHC15-1-306	1619	1624	1621.5	37770	60749	8741	0.34	3.78	28.36	117.87	-118.78
GHC15-1	EXPAGHC15-1-307	1624	1629	1626.5	37770	60749	8736	0.18	4.34	15.02	135.34	-103.48
GHC15-1	EXPAGHC15-1-308	1629	1634	1631.5	37770	60749	8731	0.16	3.07	13.35	95.73	-123.14
GHC15-1	EXPAGHC15-1-309	1634	1639	1636.5	37769	60749	8726	0.32	3.28	26.69	102.28	-161.59
GHC15-1	EXPAGHC15-1-310	1639	1644	1641.5	37769	60749	8721	0.36	3.78	30.03	117.87	-161.07
GHC15-1	EXPAGHC15-1-311	1644	1649	1646.5	37769	60749	8716	0.3	4.61	25.03	143.76	-88.88
GHC15-1	EXPAGHC15-1-312	1649	1654	1651.5	37769	60749	8711	0.08	5.01	6.67	156.23	-104.89
GHC15-1	EXPAGHC15-1-313	1654	1659	1656.5	37769	60750	8706	0.11	5.96	9.18	185.86	-161.94
GHC15-1	EXPAGHC15-1-314	1659	1664	1661.5	37768	60750	8701	0.19	5.51	15.85	171.82	-115.40
GHC15-1	EXPAGHC15-1-315	1664	1669	1666.5	37768	60750	8696	0.19	3.49	15.85	108.83	-149.83

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GHC15-1	EXPAGHC15-1-316	1669	1674	1671.5	37768	60750	8691	0.48	4.13	40.04	128.79	-137.90
GHC15-1	EXPAGHC15-1-317	1674	1679	1676.5	37768	60750	8686	0.14	4.73	11.68	147.50	-111.58
GHC15-1	EXPAGHC15-1-318	1679	1684	1681.5	37767	60750	8681	0.08	5.52	6.67	172.13	-77.60
GHC15-1	EXPAGHC15-1-319	1684	1689	1686.5	37767	60750	8676	0.2	4.59	16.68	143.13	-108.41
GHC15-1	EXPAGHC15-1-320	1689	1694	1691.5	37767	60750	8671	0.09	4.46	7.51	139.08	-141.68
GHC15-1	EXPAGHC15-1-321	1694	1699	1696.5	37767	60750	8666	0.14	4.34	11.68	135.34	-174.03
GHC15-1	EXPAGHC15-1-322	1699	1704	1701.5	37766	60750	8661	0.39	8.24	32.53	256.95	-101.47
GHC15-1	EXPAGHC15-1-323	1704	1709	1706.5	37766	60750	8656	0.11	5.46	9.18	170.26	-117.48
GHC15-1	EXPAGHC15-1-324	1709	1714	1711.5	37766	60750	8651	0.1	5.48	8.34	170.89	-99.86
GHC15-1	EXPAGHC15-1-325	1714	1719	1716.5	37766	60750	8646	0.13	5.64	10.84	175.88	-113.89
GHC15-1	EXPAGHC15-1-326	1719	1724	1721.5	37766	60750	8641	0.37	4.5	30.86	140.33	-84.58
GHC15-1	EXPAGHC15-1-327	1724	1729	1726.5	37765	60750	8636	0.57	3.5	47.55	109.14	-91.10
GHC15-1	EXPAGHC15-1-328	1729	1734	1731.5	37765	60750	8631	0.69	3.28	57.56	102.28	-128.51
GHC15-1	EXPAGHC15-1-329	1734	1739	1736.5	37765	60750	8626	0.65	3.47	54.22	108.21	-124.83
GHC15-1	EXPAGHC15-1-330	1739	1744	1741.5	37765	60750	8621	0.67	3.83	55.89	119.43	-129.32
GHC15-1	EXPAGHC15-1-331	1744	1749	1746.5	37764	60750	8616	0.77	3.11	64.23	96.98	-103.31
GHC15-1	EXPAGHC15-1-332	1749	1754	1751.5	37764	60750	8611	0.82	3.8	68.40	118.50	-88.29
GHC15-1	EXPAGHC15-1-333	1754	1759	1756.5	37764	60750	8606	0.6	3.5	50.05	109.14	-139.27
GHC15-1	EXPAGHC15-1-334	1759	1764	1761.5	37764	60750	8601	0.69	4.18	57.56	130.35	-119.54
GHC15-1	EXPAGHC15-1-335	1764	1769	1766.5	37764	60750	8596	0.9	4.28	75.08	133.47	
GHC15-1	EXPAGHC15-1-336	1769	1774	1771.5	37763	60750	8591	1.09	3.99	90.92	124.42	-65.52
GHC15-1	EXPAGHC15-1-337	1774	1779	1776.5	37763	60750	8586	1.08	4.42	90.09	137.83	-137.31
GHC15-1	EXPAGHC15-1-338	1779	1784	1781.5	37763	60750	8581	0.9	4.84	75.08	150.93	-57.08
GHC15-1	EXPAGHC15-1-339	1784	1789	1786.5	37763	60750	8576	0.48	4.06	40.04	126.61	-58.88
GHC15-1	EXPAGHC15-1-340	1789	1794	1791.5	37762	60750	8571	1.11	4.31	92.59	134.40	-30.56
GHC15-1	EXPAGHC15-1-341	1794	1799	1796.5	37762	60750	8566	0.89	3.95	74.24	123.18	-49.38
GHC15-1	EXPAGHC15-1-342	1799	1804	1801.5	37762	60750	8561	0.61	3.75	50.88	116.94	-177.56
GHC15-1	EXPAGHC15-1-343	1804	1809	1806.5	37762	60750	8556	0.63	4.1	52.55	127.85	-80.48
GHC15-1	EXPAGHC15-1-344	1809	1814	1811.5	37761	60750	8551	0.71	3.89	59.23	121.30	-111.54
GHC15-1	EXPAGHC15-1-345	1814	1819	1816.5	37761	60751	8546	0.54	3.75	45.05	116.94	-95.23
GHC15-1	EXPAGHC15-1-346	1819	1824	1821.5	37761	60751	8541	1.04	3.75	86.75	116.94	-147.65
GHC15-1	EXPAGHC15-1-347	1824	1829	1826.5	37761	60751	8536	0.85	3.44	70.90	107.27	-159.08
GHC15-1	EXPAGHC15-1-348	1829	1834	1831.5	37761	60751	8531	0.71	3.48	59.23	108.52	-62.17
GHC15-1	EXPAGHC15-1-349	1834	1839	1836.5	37760	60751	8526	0.67	3.95	55.89	123.18	-131.72
GHC15-1	EXPAGHC15-1-350	1839	1844	1841.5	37760	60751	8521	0.57	3.39	47.55	105.71	-65.70
GHC15-1	EXPAGHC15-1-351	1844	1849	1846.5	37760	60751	8516	0.91	3.53	75.91	110.08	-52.40
GHC15-1	EXPAGHC15-1-352	1849	1854	1851.5	37760	60751	8511	1.26	3.07	105.11	95.73	-138.58
GHC15-1	EXPAGHC15-1-353	1854	1859	1856.5	37759	60751	8506	1.21	2.18	100.93	67.98	-54.44
GHC15-1	EXPAGHC15-1-354	1859	1864	1861.5	37759	60751	8501	0.84	3.26	70.07	101.66	
GHC15-1	EXPAGHC15-1-355	1864	1869	1866.5	37759	60751	8496	0.97	3.18	80.91	99.16	-113.81
GHC15-1	EXPAGHC15-1-356	1869	1874	1871.5	37759	60751	8491	0.72	3.06	60.06	95.42	-122.65
GHC15-1	EXPAGHC15-1-357	1874	1879	1876.5	37759	60751	8486	0.45	3.65	37.54	113.82	-74.01
GHC15-1	EXPAGHC15-1-358	1879	1884	1881.5	37758	60751	8481	0.52	3.61	43.38	112.57	-72.53
GHC15-1	EXPAGHC15-1-359	1884	1889	1886.5	37758	60751	8476	0.69	4.55	57.56	141.89	-128.69
GHC15-1	EXPAGHC15-1-360	1889	1894	1891.5	37758	60751	8471	0.77	3.62	64.23	112.89	-67.37
GHC15-1	EXPAGHC15-1-361	1894	1899	1896.5	37758	60752	8466	1.01	2.95	84.25	91.99	-81.92
GHC15-1	EXPAGHC15-1-362	1899	1904	1901.5	37758	60752	8461	1.22	4	101.77	124.74	-129.86
GHC15-1	EXPAGHC15-1-363	1904	1909	1906.5	37757	60752	8456	1.12	3.93	93.43	122.55	-89.01
GHC15-1	EXPAGHC15-1-364	1909	1914	1911.5	37757	60752	8451	1.11	3.39	92.59	105.71	-132.58
GHC15-1	EXPAGHC15-1-365	1914	1919	1916.5	37757	60752	8446	1.02	3.72	85.09	116.00	-128.72
GHC15-1	EXPAGHC15-1-366	1919	1924	1921.5	37757	60752	8441	0.73	3.91	60.89	121.93	-148.25
GHC15-1	EXPAGHC15-1-367	1924	1929	1926.5	37756	60752	8436	0.82	3.68	68.40	114.76	-139.53
GHC15-1	EXPAGHC15-1-368	1929	1934	1931.5	37756	60752	8431	1.34	2.64	111.78	82.33	-119.26
GHC15-1	EXPAGHC15-1-369	1934	1939	1936.5	37756	60752	8426	1.39	3.33	115.95	103.84	-121.55
GHC15-1	EXPAGHC15-1-370	1939	1944	1941.5	37756	60752	8421	1.08	3.72	90.09	116.00	-133.20
GHC15-1	EXPAGHC15-1-371	1944	1949	1946.5	37756	60752	8416	1.06	3.22	88.42	100.41	-150.49
GHC15-1	EXPAGHC15-1-372	1949	1954	1951.5	37755	60752	8411	1	3.43	83.42	106.96	-212.13
GHC15-1	EXPAGHC15-1-373	1954	1959	1956.5	37755	60752	8406	1.13	2.6	94.26	81.08	-166.69
GHC15-1	EXPAGHC15-1-374	1959	1964	1961.5	37755	60752	8401	1.19	2.91	99.27	90.74	-186.33
GHC15-1	EXPAGHC15-1-375	1964	1969	1966.5	37755	60752	8397	1.12	2.88	93.43	89.81	-198.80
GHC15-1	EXPAGHC15-1-376	1969	1974	1971.5	37754	60752	8392	1.15	3.52	95.93	109.77	-142.27
GHC15-1	EXPAGHC15-1-377	1974	1979	1976.5	37754	60753	8387	1.28	2.22	106.77	69.23	-144.87
GHC15-1	EXPAGHC15-1-378	1979	1984	1981.5	37754	60753	8382	0.66	5.14	55.06	160.28	-110.78
GHC15-1	EXPAGHC15-1-379	1984	1989	1986.5	37754	60753	8377	0.73	5.34	60.89	166.52	

HOLE NUMBER	SAMPLE NUMBER	Depth from (ft)	Depth to (ft)	Average Depth (ft)	X (ft)	Y (ft)	Z (ft)	LECO Total Carbon (%)	LECO Total Sulfur (%)	Acid Neutralizing Potential (t/kt)	Acid Generating Potential (t/kt)	Net Neutralizing Potential (t/Kt)
GHC15-1	EXPAGHC15-1-380	1989	1994	1991.5	37753	60753	8372	1.09	3.49	90.92	108.83	
GHC15-1	EXPAGHC15-1-381	1994	1999	1996.5	37753	60753	8367	1.13	3.96	94.26	123.49	
GHC15-1	EXPAGHC15-1-382	1999	2004	2001.5	37753	60753	8362	1	4.65	83.42	145.00	-135.51
GHC15-1	EXPAGHC15-1-383	2004	2009	2006.5	37753	60753	8357	0.82	4.39	68.40	136.90	-173.26
GHC15-1	EXPAGHC15-1-384	2009	2014	2011.5	37753	60753	8352	1.03	4.54	85.92	141.57	
GHC15-1	EXPAGHC15-1-385	2014	2019	2016.5	37752	60753	8347	0.55	4.66	45.88	145.32	-161.10
GHC15-1	EXPAGHC15-1-386	2019	2024	2021.5	37752	60753	8342	0.7	4.52	58.39	140.95	-194.45
GHC15-1	EXPAGHC15-1-387	2024	2029	2026.5	37752	60753	8337	0.79	4.94	65.90	154.05	-229.89
GHC15-1	EXPAGHC15-1-388	2029	2034	2031.5	37752	60753	8332	0.7	4.3	58.39	134.09	-107.37
GHC15-1	EXPAGHC15-1-389	2034	2039	2036.5	37751	60753	8327	0.44	3.57	36.70	111.33	-145.38
GHC15-1	EXPAGHC15-1-390	2039	2044	2041.5	37751	60753	8322	0.45	3.26	37.54	101.66	-169.09
GHC15-1	EXPAGHC15-1-391	2044	2049	2046.5	37751	60753	8317	0.37	3.89	30.86	121.30	-88.43
GHC15-1	EXPAGHC15-1-392	2049	2054	2051.5	37751	60753	8312	0.42	2.65	35.04	82.64	-101.85
GHC15-1	EXPAGHC15-1-393	2054	2059	2056.5	37751	60753	8307	0.39	3.08	32.53	96.05	-131.25
GHC15-1	EXPAGHC15-1-394	2059	2064	2061.5	37750	60754	8302	0.42	3.93	35.04	122.55	-137.59
GHC15-1	EXPAGHC15-1-395	2064	2069	2066.5	37750	60754	8297	0.55	3.74	45.88	116.63	-189.78
GHC15-1	EXPAGHC15-1-396	2069	2074	2071.5	37750	60754	8292	0.74	4	61.73	124.74	-172.00
GHC15-1	EXPAGHC15-1-397	2074	2079	2076.5	37750	60754	8287	1.31	3.44	109.28	107.27	-158.70
GHC15-1	EXPAGHC15-1-398	2079	2084	2081.5	37750	60754	8282	0.89	2.81	74.24	87.63	-91.23
GHC15-1	EXPAGHC15-1-399	2084	2089	2086.5	37749	60754	8277	0.95	3.99	79.25	124.42	-85.10
GHC15-1	EXPAGHC15-1-400	2089	2094	2091.5	37749	60754	8272	0.48	4.49	40.04	140.02	-155.17
GHC15-1	EXPAGHC15-1-401	2094	2099	2096.5	37749	60754	8267	0.51	3.09	42.54	96.36	-253.18
GHC15-1	EXPAGHC15-1-402	2099	2104	2101.5	37749	60754	8262	0.53	3.06	44.21	95.42	-172.63
GHC15-1	EXPAGHC15-1-403	2104	2109	2106.5	37748	60754	8257	0.51	3.14	42.54	97.92	-165.67
GHC15-1	EXPAGHC15-1-404	2109	2114	2111.5	37748	60754	8252	0.55	3.83	45.88	119.43	-119.62
GHC15-1	EXPAGHC15-1-405	2114	2119	2116.5	37748	60754	8247	0.75	2.69	62.56	83.88	-150.49
GHC15-1	EXPAGHC15-1-406	2119	2124	2121.5	37748	60754	8242	0.45	2.37	37.54	73.91	-150.91
GHC15-1	EXPAGHC15-1-407	2124	2129	2126.5	37748	60754	8237	0.53	2.78	44.21	86.69	-113.69
GHC15-1	EXPAGHC15-1-408	2129	2134	2131.5	37747	60754	8232	0.33	2.64	27.53	82.33	-163.80
GHC15-1	EXPAGHC15-1-409	2134	2139	2136.5	37747	60755	8227	0.48	2.89	40.04	90.12	-189.46
GHC15-1	EXPAGHC15-1-410	2139	2144	2141.5	37747	60755	8222	0.44	2.41	36.70	75.15	-141.14
GHC15-1	EXPAGHC15-1-411	2144	2149	2146.5	37747	60755	8217	0.49	3.35	40.87	104.47	-108.54
GHC15-1	EXPAGHC15-1-412	2149	2154	2151.5	37747	60755	8212	0.49	3.37	40.87	105.09	-65.04
GHC15-1	EXPAGHC15-1-413	2154	2159	2156.5	37746	60755	8207	0.35	3.16	29.20	98.54	-87.63
GHC15-1	EXPAGHC15-1-414	2159	2164	2161.5	37746	60755	8202	0.54	3.82	45.05	119.12	-100.63
GHC15-1	EXPAGHC15-1-415	2164	2169	2166.5	37746	60755	8197	0.64	4.65	53.39	145.00	-73.68
GHC15-1	EXPAGHC15-1-416	2169	2174	2171.5	37746	60755	8192	0.36	4.92	30.03	153.42	-97.60
GHC15-1	EXPAGHC15-1-417	2174	2179	2176.5	37746	60755	8187	0.46	1.63	38.37	50.83	-139.52
GHC15-1	EXPAGHC15-1-418	2179	2184	2181.5	37745	60755	8182	0.55	2.45	45.88	76.40	-160.76
GHC15-1	EXPAGHC15-1-419	2184	2189	2186.5	37745	60755	8177	0.56	3.46	46.71	107.90	-209.22
GHC15-1	EXPAGHC15-1-420	2189	2194	2191.5	37745	60756	8172	0.84	4.65	70.07	145.00	-172.42
GHC15-1	EXPAGHC15-1-421	2194	2199	2196.5	37745	60756	8167	0.85	3.95	70.90	123.18	-168.05
GHC15-1	EXPAGHC15-1-422	2199	2204	2201.5	37745	60756	8162	0.67	4.32	55.89	134.71	-153.08
GHC15-1	EXPAGHC15-1-423	2204	2209	2206.5	37744	60756	8157	0.93	4.27	77.58	133.15	-133.55
GHC15-1	EXPAGHC15-1-424	2209	2214	2211.5	37744	60756	8152	0.88	4.23	73.41	131.91	-193.64
GHC15-1	EXPAGHC15-1-425	2214	2219	2216.5	37744	60756	8147	0.73	3.53	60.89	110.08	-167.13
GHC15-1	EXPAGHC15-1-426	2219	2224	2221.5	37744	60756	8142	0.71	3.92	59.23	122.24	-188.34
GHC15-1	EXPAGHC15-1-427	2224	2229	2226.5	37744	60756	8137	0.5	3.26	41.71	101.66	-188.65
GHC15-1	EXPAGHC15-1-428	2229	2234	2231.5	37743	60756	8132	0.32	4.07	26.69	126.92	-184.50
GHC15-1	EXPAGHC15-1-429	2234	2239	2236.5	37743	60757	8127	0.31	5.19	25.86	161.84	-171.40
GHC15-1	EXPAGHC15-1-430	2239	2244	2241.5	37743	60757	8122	0.53	8.56	44.21	266.93	-203.31
GHC15-1	EXPAGHC15-1-431	2244	2249	2246.5	37743	60757	8117	0.33	4.62	27.53	144.07	-210.17
GHC15-1	EXPAGHC15-1-432	2249	2254	2251.5	37743	60757	8112	0.42	4.34	35.04	135.34	-207.15
GHC15-1	EXPAGHC15-1-433	2254	2259	2256.5	37742	60757	8107	0.57	6.72	47.55	209.56	-212.45
GHC15-1	EXPAGHC15-1-434	2259	2264	2261.5	37742	60757	8102	0.67	4.62	55.89	144.07	-227.74
GHC15-1	EXPAGHC15-1-435	2264	2269	2266.5	37742	60757	8097	0.63	4.92	52.55	153.42	-209.03
GHC15-1	EXPAGHC15-1-436	2269	2274	2271.5	37742	60757	8092	0.73	3.63	60.89	113.20	-241.88
GHC15-1	EXPAGHC15-1-437	2274	2279	2276.5	37742	60757	8087	0.97	3.11	80.91	96.98	-230.64
GHC15-1	EXPAGHC15-1-438	2279	2284	2281.5	37741	60758	8082	0.63	3.5	52.55	109.14	-241.13
GHC15-1	EXPAGHC15-1-439	2284	2289	2286.5	37741	60758	8077	0.53	4.43	44.21	138.14	-226.66
GHC15-1	EXPAGHC15-1-440	2289	2294	2291.5	37741	60758	8072	0.64	3.68	53.39	114.76	-193.89
GHC15-1	EXPAGHC15-1-441	2294	2299	2296.5	37741	60758	8067	0.63	3.62	52.55	112.89	-222.59
GHC15-1	EXPAGHC15-1-442	2299	2304	2301.5	37741	60758	8062	0.65	3.47	54.22	108.21	-213.86
GHC15-1	EXPAGHC15-1-443	2304	2309	2306.5	37740	60758	8057	0.54	3.43	45.05	106.96	-235.61

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GHC15-1	EXPAGHC15-1-444	2309	2314	2311.5	37740	60758	8052	0.62	2.86	51.72	89.19	-308.64
GHC15-1	EXPAGHC15-1-445	2314	2319	2316.5	37740	60758	8047	0.53	2.37	44.21	73.91	-135.45
GHC15-1	EXPAGHC15-1-446	2319	2324	2321.5	37740	60758	8042	0.44	3.02	36.70	94.18	-201.56
GHC15-1	EXPAGHC15-1-447	2324	2329	2326.5	37739	60759	8037	0.52	3.93	43.38	122.55	-208.98
GHC15-1	EXPAGHC15-1-448	2329	2334	2331.5	37739	60759	8032	0.61	4.84	50.88	150.93	-129.05
GHC15-1	EXPAGHC15-1-449	2334	2339	2336.5	37739	60759	8027	0.65	3.73	54.22	116.32	-170.79
GHC15-1	EXPAGHC15-1-450	2339	2344	2341.5	37739	60759	8022	0.78	3.95	65.07	123.18	-299.72
GHC15-1	EXPAGHC15-1-451	2344	2349	2346.5	37739	60759	8017	0.7	3.54	58.39	110.39	-261.95
GHC15-1	EXPAGHC15-1-452	2349	2354	2351.5	37738	60759	8012	0.68	3.83	56.72	119.43	-235.55
GHC15-1	EXPAGHC15-1-453	2354	2359	2356.5	37738	60759	8007	0.82	3.55	68.40	110.70	-202.76
GHC15-1	EXPAGHC15-1-454	2359	2364	2361.5	37738	60759	8002	0.67	3.12	55.89	97.29	-249.57
GHC15-1	EXPAGHC15-1-455	2364	2369	2366.5	37738	60759	7997	0.97	3.99	80.91	124.42	-161.13
GHC15-1	EXPAGHC15-1-456	2369	2374	2371.5	37738	60759	7992	0.89	3.7	74.24	115.38	-286.81
GHC15-1	EXPAGHC15-1-457	2374	2379	2376.5	37737	60760	7987	0.59	3.03	49.22	94.49	-259.47
GHC15-1	EXPAGHC15-1-458	2379	2384	2381.5	37737	60760	7982	0.65	3.65	54.22	113.82	-219.20
GHC15-1	EXPAGHC15-1-459	2384	2389	2386.5	37737	60760	7977	0.87	3.96	72.57	123.49	-128.70
GHC15-1	EXPAGHC15-1-460	2389	2394	2391.5	37737	60760	7972	0.68	4.25	56.72	132.53	-18.09
GHC15-1	EXPAGHC15-1-461	2394	2399	2396.5	37737	60760	7967	0.75	3.47	62.56	108.21	-144.88
GHC15-1	EXPAGHC15-1-462	2399	2413	2406	37736	60760	7953	3.06	3.92	255.26	122.24	-47.24
GHC15-1	EXPAGHC15-1-463	2413	2420	2416.5	37736	60760	7946	1.06	2.64	88.42	82.33	9.78
GHC15-1	EXPAGHC15-1-464	2420	2425	2422.5	37735	60761	7941	0.81	2.51	67.57	78.27	-45.34
GHC15-1	EXPAGHC15-1-465	2425	2430	2427.5	37735	60761	7936	0.97	2.88	80.91	89.81	-260.53
GHC15-1	EXPAGHC15-1-466	2430	2435	2432.5	37735	60761	7931	0.81	2.53	67.57	78.90	-136.20
GHC15-1	EXPAGHC15-1-467	2435	2440	2437.5	37735	60761	7926	1.18	1.55	98.43	48.33	-158.69
GHC15-1	EXPAGHC15-1-468	2440	2445	2442.5	37735	60761	7921	0.69	1.85	57.56	57.69	-177.01
GHC15-1	EXPAGHC15-1-469	2445	2450	2447.5	37734	60761	7916	0.54	2.06	45.05	64.24	-181.79
GHC15-1	EXPAGHC15-1-470	2450	2455	2452.5	37734	60761	7911	0.37	3.03	30.86	94.49	-167.35
GHC15-1	EXPAGHC15-1-471	2455	2460	2457.5	37734	60761	7906	0.52	4.56	43.38	142.20	-190.74
GHC15-1	EXPAGHC15-1-472	2460	2465	2462.5	37734	60761	7901	0.51	3.62	42.54	112.89	-193.95
GHC15-1	EXPAGHC15-1-473	2465	2470	2467.5	37733	60761	7896	0.7	2.48	58.39	77.34	-45.68
GHC15-1	EXPAGHC15-1-474	2470	2475	2472.5	37733	60762	7891	0.59	2.58	49.22	80.45	7.27
GHC15-1	EXPAGHC15-1-475	2475	2480	2477.5	37733	60762	7886	0.61	1.77	50.88	55.20	-46.29
GHC15-1	EXPAGHC15-1-476	2480	2485	2482.5	37733	60762	7881	0.78	1.73	65.07	53.95	-52.42
GHC15-1	EXPAGHC15-1-477	2485	2490	2487.5	37733	60762	7876	0.86	2.48	71.74	77.34	-29.43
GHC15-1	EXPAGHC15-1-478	2490	2495	2492.5	37732	60762	7871	1.09	2.54	90.92	79.21	-137.16
GHC15-1	EXPAGHC15-1-479	2495	2500	2497.5	37732	60762	7866	1.03	3.17	85.92	98.85	-141.62
GHC15-1	EXPAGHC15-1-480	2500	2505	2502.5	37732	60762	7861	1.52	3.74	126.79	116.63	-256.74
GHC15-1	EXPAGHC15-1-481	2505	2510	2507.5	37732	60762	7856	1.6	4.68	133.47	145.94	-268.80
GHC15-1	EXPAGHC15-1-482	2510	2515	2512.5	37732	60762	7851	0.69	9.63	57.56	300.30	-264.23
GHC15-1	EXPAGHC15-1-483	2515	2520	2517.5	37731	60762	7846	0.75	7.08	62.56	220.78	-210.07
GHC15-1	EXPAGHC15-1-484	2520	2525	2522.5	37731	60763	7841	0.73	9.15	60.89	285.33	-152.78
GHC15-1	EXPAGHC15-1-485	2525	2530	2527.5	37731	60763	7836	0.68	12.7	56.72	396.03	-199.37
GHC15-1	EXPAGHC15-1-486	2530	2535	2532.5	37731	60763	7831	0.79	6.99	65.90	217.97	-204.14
GHC15-1	EXPAGHC15-1-487	2535	2540	2537.5	37731	60763	7826	0.78	7.21	65.07	224.84	-228.26
GHC15-1	EXPAGHC15-1-488	2540	2545	2542.5	37730	60763	7821	0.71	6.88	59.23	214.54	-202.16
GHC15-1	EXPAGHC15-1-489	2545	2550	2547.5	37730	60763	7816	0.48	5.7	40.04	177.75	-204.25
GHC15-1	EXPAGHC15-1-490	2550	2555	2552.5	37730	60763	7811	0.16	6.23	13.35	194.28	-163.71
GHC15-1	EXPAGHC15-1-491	2555	2560	2557.5	37730	60763	7806	0.12	4.66	10.01	145.32	-176.49
GHC15-1	EXPAGHC15-1-492	2560	2565	2562.5	37730	60763	7801	0.17	8.15	14.18	254.15	-164.85
GHC15-1	EXPAGHC15-1-493	2565	2570	2567.5	37729	60763	7796	0.17	3.47	14.18	108.21	-142.17
GHC15-1	EXPAGHC15-1-494	2570	2575	2572.5	37729	60764	7791	0.56	5.73	46.71	178.68	-157.32
GHC15-1	EXPAGHC15-1-495	2575	2580	2577.5	37729	60764	7786	0.94	5.07	78.41	158.10	-177.42
GHC15-1	EXPAGHC15-1-496	2580	2585	2582.5	37729	60764	7781	0.83	5.48	69.24	170.89	-179.17
GHC15-1	EXPAGHC15-1-497	2585	2590	2587.5	37729	60764	7776	0.97	6.24	80.91	194.59	-171.37
GHC15-1	EXPAGHC15-1-498	2590	2595	2592.5	37728	60764	7771	0.77	5.77	64.23	179.93	-164.93
GHC15-1	EXPAGHC15-1-499	2595	2600	2597.5	37728	60764	7766	0.78	8.29	65.07	258.51	-177.94
GHC15-1	EXPAGHC15-1-500	2600	2605	2602.5	37728	60764	7761	0.96	6.16	80.08	192.09	-153.51
GHC15-1	EXPAGHC15-1-501	2605	2610	2607.5	37728	60764	7756	1.2	7.7	100.10	240.12	-180.85
GHC15-1	EXPAGHC15-1-502	2610	2615	2612.5	37728	60764	7751	0.47	9.28	39.21	289.39	-146.86
GHC15-1	EXPAGHC15-1-503	2615	2620	2617.5	37727	60764	7746	0.37	12.1	30.86	377.32	-196.34
GHC15-1	EXPAGHC15-1-504	2620	2625	2622.5	37727	60765	7741	0.41	6.97	34.20	217.35	-239.38
GHC15-1	EXPAGHC15-1-505	2625	2630	2627.5	37727	60765	7736	0.14	9.78	11.68	304.98	-203.82
GHC15-1	EXPAGHC15-1-506	2630	2635	2632.5	37727	60765	7731	0.25	8.79	20.85	274.11	-276.90
GHC15-1	EXPAGHC15-1-507	2635	2640	2637.5	37726	60765	7726	0.52	8.05	43.38	251.03	-187.82

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GHC15-1	EXPAGHC15-1-508	2640	2645	2642.5	37726	60765	7721	0.62	7.09	51.72	221.09	-123.05
GHC15-1	EXPAGHC15-1-509	2645	2650	2647.5	37726	60765	7716	0.56	7.88	46.71	245.73	-100.39
GHC15-1	EXPAGHC15-1-510	2650	2655	2652.5	37726	60765	7711	1.13	6.68	94.26	208.31	-154.66
GHC15-1	EXPAGHC15-1-511	2655	2660	2657.5	37726	60765	7706	0.72	5.06	60.06	157.79	-93.54
GHC15-1	EXPAGHC15-1-512	2660	2665	2662.5	37725	60765	7701	0.5	8.91	41.71	277.85	-138.87
GHC15-1	EXPAGHC15-1-513	2665	2670	2667.5	37725	60766	7696	0.32	8.53	26.69	266.00	-131.70
GHC15-1	EXPAGHC15-1-514	2670	2675	2672.5	37725	60766	7691	0.5	10.3	41.71	321.19	-106.75
GHC15-1	EXPAGHC15-1-515	2675	2680	2677.5	37725	60766	7686	0.29	16	24.19	498.94	-123.90
GHC15-1	EXPAGHC15-1-516	2680	2685	2682.5	37725	60766	7681	0.21	8.51	17.52	265.37	-108.31
GHC15-1	EXPAGHC15-1-517	2685	2690	2687.5	37724	60766	7676	0.53	4.94	44.21	154.05	-108.10
GHC15-1	EXPAGHC15-1-518	2690	2695	2692.5	37724	60766	7671	0.31	3.19	25.86	99.48	-100.40
GHC15-1	EXPAGHC15-1-519	2695	2700	2697.5	37724	60766	7666	0.36	5.29	30.03	164.96	-151.12
GHC15-1	EXPAGHC15-1-520	2700	2705	2702.5	37724	60766	7661	0.22	17.4	18.35	542.60	-81.87
GHC15-1	EXPAGHC15-1-521	2705	2710	2707.5	37723	60766	7656	0.23	17.7	19.19	551.95	-118.05
GHC15-1	EXPAGHC15-1-522	2710	2715	2712.5	37723	60767	7651	0.16	5.48	13.35	170.89	-90.83
GHC15-1	EXPAGHC15-1-523	2715	2720	2717.5	37723	60767	7646	0.31	3.55	25.86	110.70	-103.09
GHC15-1	EXPAGHC15-1-524	2720	2725	2722.5	37723	60767	7641	0.91	6.71	75.91	209.24	-136.25
GHC15-1	EXPAGHC15-1-525	2725	2730	2727.5	37723	60767	7636	1	10.2	83.42	318.07	-98.72
GHC15-1	EXPAGHC15-1-526	2730	2735	2732.5	37722	60767	7631	0.97	6.83	80.91	212.99	-103.27
GHC15-1	EXPAGHC15-1-527	2735	2740	2737.5	37722	60767	7626	0.78	5.7	65.07	177.75	-181.47
GHC15-1	EXPAGHC15-1-528	2740	2745	2742.5	37722	60767	7621	1.07	5.91	89.26	184.30	-182.50
GHC15-1	EXPAGHC15-1-529	2745	2750	2747.5	37722	60767	7616	1.14	5.07	95.10	158.10	-108.79
GHC15-1	EXPAGHC15-1-530	2750	2755	2752.5	37722	60767	7611	1.16	3.72	96.76	116.00	-82.47
GHC15-1	EXPAGHC15-1-531	2755	2760	2757.5	37721	60768	7606	1.1	3.87	91.76	120.68	-84.79
GHC15-1	EXPAGHC15-1-532	2760	2765	2762.5	37721	60768	7601	0.87	6.09	72.57	189.91	-73.77
GHC15-1	EXPAGHC15-1-533	2765	2770	2767.5	37721	60768	7596	0.81	6.03	67.57	188.04	-104.15
GHC15-1	EXPAGHC15-1-534	2770	2775	2772.5	37721	60768	7591	1.17	5.76	97.60	179.62	-78.88
GHC15-1	EXPAGHC15-1-535	2775	2780	2777.5	37721	60768	7586	1.03	5.16	85.92	160.91	-77.43
GHC15-1	EXPAGHC15-1-536	2780	2785	2782.5	37720	60768	7581	0.79	6.07	65.90	189.29	-63.50
GHC15-1	EXPAGHC15-1-537	2785	2790	2787.5	37720	60768	7576	0.93	4.48	77.58	139.70	-53.60
GHC15-1	EXPAGHC15-1-538	2790	2795	2792.5	37720	60768	7571	0.98	3.43	81.75	106.96	-98.31
GHC15-1	EXPAGHC15-1-539	2795	2800	2797.5	37720	60768	7566	0.93	4.6	77.58	143.45	-78.26
GHC15-1	EXPAGHC15-1-540	2800	2805	2802.5	37719	60769	7561	0.93	4.6	77.58	143.45	-81.27
GHC15-1	EXPAGHC15-1-541	2805	2810	2807.5	37719	60769	7556	0.83	4.31	69.24	134.40	-137.20
GHC15-1	EXPAGHC15-1-542	2810	2815	2812.5	37719	60769	7551	0.85	4.98	70.90	155.30	-93.23
GHC15-1	EXPAGHC15-1-543	2815	2820	2817.5	37719	60769	7546	0.84	5.09	70.07	158.73	-93.02
GHC15-1	EXPAGHC15-1-544	2820	2825	2822.5	37719	60769	7541	0.71	5.74	59.23	179.00	-76.81
GHC15-1	EXPAGHC15-1-545	2825	2830	2827.5	37718	60769	7536	1.05	4.24	87.59	132.22	-146.76
GHC15-1	EXPAGHC15-1-546	2830	2835	2832.5	37718	60769	7531	0.77	3.97	64.23	123.80	-91.46
GHC15-1	EXPAGHC15-1-547	2835	2840	2837.5	37718	60769	7526	0.71	4.54	59.23	141.57	-69.53
GHC15-1	EXPAGHC15-1-548	2840	2845	2842.5	37718	60770	7521	0.62	2.84	51.72	88.56	-84.91
GHC15-1	EXPAGHC15-1-549	2845	2850	2847.5	37718	60770	7516	0.32	4.65	26.69	145.00	-99.04
GHC15-1	EXPAGHC15-1-550	2850	2855	2852.5	37718	60770	7511	0.57	6.37	47.55	198.64	-45.61
GHC15-1	EXPAGHC15-1-551	2855	2860	2857.5	37717	60770	7506	0.57	7.03	47.55	219.22	-94.56
GHC15-1	EXPAGHC15-1-552	2860	2865	2862.5	37717	60770	7501	0.85	4.81	70.90	149.99	-43.42
GHC15-1	EXPAGHC15-1-553	2865	2870	2867.5	37717	60770	7496	1.09	4.02	90.92	125.36	-71.40
GHC15-1	EXPAGHC15-1-554	2870	2875	2872.5	37717	60770	7491	1.03	5.19	85.92	161.84	-41.12
GHC15-1	EXPAGHC15-1-555	2875	2880	2877.5	37717	60771	7486	1.1	4.83	91.76	150.62	-19.79
GHC15-1	EXPAGHC15-1-556	2880	2885	2882.5	37716	60771	7481	0.86	5.22	71.74	162.78	-57.67
GHC15-1	EXPAGHC15-1-557	2885	2890	2887.5	37716	60771	7477	0.96	5.06	80.08	157.79	-72.02
GHC15-1	EXPAGHC15-1-558	2890	2895	2892.5	37716	60771	7472	1.17	5.26	97.60	164.03	-95.41
GHC15-1	EXPAGHC15-1-559	2895	2900	2897.5	37716	60771	7467	0.68	9.76	56.72	304.35	-80.45
GHC15-1	EXPAGHC15-1-560	2900	2905	2902.5	37716	60771	7462	0.97	4.35	80.91	135.65	-110.38
GHC15-1	EXPAGHC15-1-561	2905	2910	2907.5	37715	60771	7457	0.47	9.69	39.21	302.17	-172.95
GHC15-1	EXPAGHC15-1-562	2910	2915	2912.5	37715	60772	7452	0.52	12.5	43.38	389.80	-118.90
GHC15-1	EXPAGHC15-1-563	2915	2920	2917.5	37715	60772	7447	0.62	5.76	51.72	179.62	-78.68
GHC15-1	EXPAGHC15-1-564	2920	2925	2922.5	37715	60772	7442	0.45	7.61	37.54	237.31	-93.75
GHC15-1	EXPAGHC15-1-565	2925	2930	2927.5	37715	60772	7437	0.71	7.14	59.23	222.65	-84.80
GHC15-1	EXPAGHC15-1-566	2930	2935	2932.5	37715	60772	7432	0.68	9.3	56.72	290.01	-63.48
GHC15-1	EXPAGHC15-1-567	2935	2940	2937.5	37714	60772	7427	0.53	6.55	44.21	204.25	-72.85
GHC15-1	EXPAGHC15-1-568	2940	2945	2942.5	37714	60772	7422	0.71	6.46	59.23	201.45	-52.16
GHC15-1	EXPAGHC15-1-569	2945	2950	2947.5	37714	60773	7417	0.85	5.34	70.90	166.52	-85.94
GHC15-1	EXPAGHC15-1-570	2950	2955	2952.5	37714	60773	7412	0.83	4.63	69.24	144.38	-165.24
GHC15-1	EXPAGHC15-1-571	2955	2960	2957.5	37714	60773	7407	1.16	4.06	96.76	126.61	-127.41

HOLE NUMBER	SAMPLE NUMBER	Depth from (ft)	Depth to (ft)	Average Depth (ft)	X (ft)	Y (ft)	Z (ft)	LECO Total Carbon (%)	LECO Total Sulfur (%)	Acid Neutralizing Potential (t/kt)	Acid Generating Potential (t/kt)	Net Neutralizing Potential (t/Kt)
GHC15-1	EXPAGHC15-1-572	2960	2965	2962.5	37713	60773	7402	0.8	3.92	66.73	122.24	-103.19
GHC15-1	EXPAGHC15-1-573	2965	2970	2967.5	37713	60773	7397	0.82	4.05	68.40	126.29	-78.24
GHC15-1	EXPAGHC15-1-574	2970	2975	2972.5	37713	60773	7392	0.95	5	79.25	155.92	-92.29
GHC15-1	EXPAGHC15-1-575	2975	2980	2977.5	37713	60773	7387	0.92	4.93	76.74	153.74	-74.49
GHC15-1	EXPAGHC15-1-576	2980	2985	2982.5	37713	60774	7382	1	6.62	83.42	206.44	-63.07
GHC15-1	EXPAGHC15-1-577	2985	2990	2987.5	37713	60774	7377	0.93	4.52	77.58	140.95	-84.80
GHC15-1	EXPAGHC15-1-578	2990	2995	2992.5	37712	60774	7372	0.89	4.12	74.24	128.48	-154.23
GHC15-1	EXPAGHC15-1-579	2995	3000	2997.5	37712	60774	7367	1.1	3.42	91.76	106.65	-183.10
GHC15-1	EXPAGHC15-1-580	3000	3005	3002.5	37712	60774	7362	0.89	4.35	74.24	135.65	-60.79
GHC15-1	EXPAGHC15-1-581	3005	3010	3007.5	37712	60774	7357	1.09	4.66	90.92	145.32	-73.24
GHC15-1	EXPAGHC15-1-582	3010	3015	3012.5	37712	60774	7352	0.95	4.77	79.25	148.75	-75.25
GHC15-1	EXPAGHC15-1-583	3015	3020	3017.5	37711	60774	7347	0.9	5.83	75.08	181.80	-34.61
GHC15-1	EXPAGHC15-1-584	3020	3025	3022.5	37711	60775	7342	0.87	3.37	72.57	105.09	-83.09
GHC15-1	EXPAGHC15-1-585	3025	3030	3027.5	37711	60775	7337	0.9	3.48	75.08	108.52	-104.35
GHC15-1	EXPAGHC15-1-586	3030	3035	3032.5	37711	60775	7332	0.73	6.2	60.89	193.34	-93.40
GHC15-1	EXPAGHC15-1-587	3035	3040	3037.5	37711	60775	7327	0.84	4.05	70.07	126.29	-103.91
GHC15-1	EXPAGHC15-1-588	3040	3045	3042.5	37710	60775	7322	1.12	4.27	93.43	133.15	-82.21
GHC15-1	EXPAGHC15-1-589	3045	3050	3047.5	37710	60775	7317	1.12	3.57	93.43	111.33	-152.25
GHC15-1	EXPAGHC15-1-590	3050	3055	3052.5	37710	60775	7312	0.64	2.13	53.39	66.42	-76.27
GHC15-1	EXPAGHC15-1-591	3055	3060	3057.5	37710	60775	7307	7.07	2.47	589.76	77.02	-68.89
GHC15-1	EXPAGHC15-1-592	3060	3065	3062.5	37710	60776	7302	7.62	6.44	635.64	200.82	-133.22
GHC15-1	EXPAGHC15-1-593	3065	3070	3067.5	37709	60776	7297	8.6	3.48	717.38	108.52	-70.33
GHC15-1	EXPAGHC15-1-594	3070	3075	3072.5	37709	60776	7292	0.58	2.67	48.38	83.26	-80.11
GHC15-1	EXPAGHC15-1-595	3075	3080	3077.5	37709	60776	7287	0.46	2.68	38.37	83.57	-40.48
GHC15-1	EXPAGHC15-1-596	3080	3085	3082.5	37709	60776	7282	0.38	3	31.70	93.55	-53.02
GHC15-1	EXPAGHC15-1-597	3085	3090	3087.5	37709	60776	7277	0.49	2.93	40.87	91.37	-75.64
GHC15-1	EXPAGHC15-1-598	3090	3095	3092.5	37708	60776	7272	1.08	4.43	90.09	138.14	-104.11
GHC15-1	EXPAGHC15-1-599	3095	3100	3097.5	37708	60776	7267	1.74	2.87	145.15	89.50	-72.46
GHC15-1	EXPAGHC15-1-600	3100	3105	3102.5	37708	60777	7262	3.78	2.52	315.32	78.58	-63.61
GHC15-1	EXPAGHC15-1-601	3105	3110	3107.5	37708	60777	7257	1.06	3.2	88.42	99.79	-23.87
GHC15-1	EXPAGHC15-1-602	3110	3115	3112.5	37708	60777	7252	5.9	2.95	492.16	91.99	0.66
GHC15-1	EXPAGHC15-1-603	3115	3120	3117.5	37707	60777	7247	5.34	3.41	445.45	106.34	-39.60
GHC15-1	EXPAGHC15-1-604	3120	3125	3122.5	37707	60777	7242	1.61	4.62	134.30	144.07	-124.21
GHC15-1	EXPAGHC15-1-605	3125	3130	3127.5	37707	60777	7237	2.1	3.04	175.18	94.80	43.04
GHC15-1	EXPAGHC15-1-606	3130	3135	3132.5	37707	60777	7232	2.72	3.82	226.89	119.12	-47.06
GHC15-1	EXPAGHC15-1-607	3135	3140	3137.5	37707	60777	7227	2.7	5.02	225.23	156.54	-16.85
GHC15-1	EXPAGHC15-1-608	3140	3145	3142.5	37706	60778	7222	0.75	2.83	62.56	88.25	-104.47
GHC15-1	EXPAGHC15-1-609	3145	3150	3147.5	37706	60778	7217	0.89	2.21	74.24	68.92	-85.15
GHC15-1	EXPAGHC15-1-610	3150	3155	3152.5	37706	60778	7212	0.44	2.89	36.70	90.12	-73.50
GHC15-1	EXPAGHC15-1-611	3155	3160	3157.5	37706	60778	7207	0.72	3.11	60.06	96.98	-69.53
GHC15-1	EXPAGHC15-1-612	3160	3165	3162.5	37706	60778	7202	1.74	3.1	145.15	96.67	-65.25
GHC15-1	EXPAGHC15-1-613	3165	3170	3167.5	37706	60778	7197	2.75	3.11	229.40	96.98	-75.45
GHC15-1	EXPAGHC15-1-614	3170	3175	3172.5	37705	60778	7192	1.5	4.87	125.13	151.87	-85.86
GHC15-1	EXPAGHC15-1-615	3175	3180	3177.5	37705	60779	7187	2.26	3.84	188.52	119.75	-71.38
GHC15-1	EXPAGHC15-1-616	3180	3185	3182.5	37705	60779	7182	2.81	5.01	234.40	156.23	-78.78
GHC15-1	EXPAGHC15-1-617	3185	3190	3187.5	37705	60779	7177	3.26	4.17	271.94	130.04	-116.95
GHC15-1	EXPAGHC15-1-618	3190	3195	3192.5	37705	60779	7172	1.72	3.32	143.48	103.53	-97.85
GHC15-1	EXPAGHC15-1-619	3195	3200	3197.5	37704	60779	7167	1.73	4.51	144.31	140.64	-82.12
GHC15-1	EXPAGHC15-1-620	3200	3205	3202.5	37704	60779	7162	2.58	3	215.22	93.55	-78.05
GHC15-1	EXPAGHC15-1-621	3205	3210	3207.5	37704	60779	7157	2.56	5.23	213.55	163.09	-118.76
GHC15-1	EXPAGHC15-1-622	3210	3215	3212.5	37704	60780	7152	1.32	6.79	110.11	211.74	-74.20
GHC15-1	EXPAGHC15-1-623	3215	3220	3217.5	37704	60780	7147	1.3	6.86	108.44	213.92	-67.74
GHC15-1	EXPAGHC15-1-624	3220	3225	3222.5	37704	60780	7142	1.84	4.4	153.49	137.21	-31.30
GHC15-1	EXPAGHC15-1-625	3225	3230	3227.5	37703	60780	7137	1.13	7.71	94.26	240.43	-74.30
GHC15-1	EXPAGHC15-1-626	3230	3235	3232.5	37703	60780	7132	1.12	7.31	93.43	227.95	-86.08
GHC15-1	EXPAGHC15-1-627	3235	3240	3237.5	37703	60780	7127	1.59	4.94	132.63	154.05	-103.96
GHC15-1	EXPAGHC15-1-628	3240	3245	3242.5	37703	60780	7122	1.32	3.75	110.11	116.94	-76.06
GHC15-1	EXPAGHC15-1-629	3245	3250	3247.5	37703	60781	7117	0.9	4.89	75.08	152.49	-68.27
GHC15-1	EXPAGHC15-1-630	3250	3255	3252.5	37702	60781	7112	0.99	3.11	82.58	96.98	-67.12
GHC15-1	EXPAGHC15-1-631	3255	3260	3257.5	37702	60781	7107	0.83	7.01	69.24	218.60	-61.51
GHC15-1	EXPAGHC15-1-632	3260	3265	3262.5	37702	60781	7102	1.15	3.77	95.93	117.56	-60.68
GHC15-1	EXPAGHC15-1-633	3265	3270	3267.5	37702	60781	7097	1.13	4.43	94.26	138.14	-59.21
GHC15-1	EXPAGHC15-1-634	3270	3275	3272.5	37702	60781	7092	1.28	3.36	106.77	104.78	-48.59
GHC15-1	EXPAGHC15-1-635	3275	3280	3277.5	37701	60781	7087	1.15	5.6	95.93	174.63	-48.57

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GHC15-1	EXPAGHC15-1-636	3280	3285	3282.5	37701	60782	7082	1.18	3.26	98.43	101.66	-65.11
GHC15-1	EXPAGHC15-1-637	3285	3290	3287.5	37701	60782	7077	1.41	5.67	117.62	176.81	-66.56
GHC15-1	EXPAGHC15-1-638	3290	3295	3292.5	37701	60782	7072	0.72	10.7	60.06	333.67	-66.20
GHC15-1	EXPAGHC15-1-639	3295	3300	3297.5	37701	60782	7067	1.7	5.93	141.81	184.92	-92.71
GHC15-1	EXPAGHC15-1-640	3300	3305	3302.5	37700	60782	7062	1.81	3.41	150.98	106.34	-72.64
GHC15-1	EXPAGHC15-1-641	3305	3310	3307.5	37700	60782	7057	1.28	2.83	106.77	88.25	-79.37
GHC15-1	EXPAGHC15-1-642	3310	3315	3312.5	37700	60782	7052	1.38	3.47	115.12	108.21	-79.70
GHC15-1	EXPAGHC15-1-643	3315	3320	3317.5	37700	60783	7047	1.39	4.5	115.95	140.33	-64.94
GHC15-1	EXPAGHC15-1-644	3320	3325	3322.5	37700	60783	7042	1.23	2.59	102.60	80.77	-59.48
GHC15-1	EXPAGHC15-1-645	3325	3330	3327.5	37699	60783	7037	1.05	7.88	87.59	245.73	-60.75
GHC15-1	EXPAGHC15-1-646	3330	3335	3332.5	37699	60783	7032	1.34	2.97	111.78	92.62	-77.43
GHC15-1	EXPAGHC15-1-647	3335	3340	3337.5	37699	60783	7027	1.26	2.5	105.11	77.96	-84.91
GHC15-1	EXPAGHC15-1-648	3340	3345	3342.5	37699	60783	7022	1.07	1.76	89.26	54.88	-112.79
GHC15-1	EXPAGHC15-1-649	3345	3350	3347.5	37699	60783	7017	1.19	3.5	99.27	109.14	-92.10
GHC15-1	EXPAGHC15-1-650	3350	3355	3352.5	37698	60784	7012	1.15	2.97	95.93	92.62	-88.37
GHC15-1	EXPAGHC15-1-651	3355	3360	3357.5	37698	60784	7007	1.14	3.75	95.10	116.94	-85.39
GHC15-1	EXPAGHC15-1-652	3360	3365	3362.5	37698	60784	7002	1.42	4.37	118.45	136.27	-92.12
GHC15-1	EXPAGHC15-1-653	3365	3370	3367.5	37698	60784	6997	1.21	3.81	100.93	118.81	-90.91
GHC15-1	EXPAGHC15-1-654	3370	3375	3372.5	37698	60784	6992	1.06	7.86	88.42	245.10	-91.01
GHC15-1	EXPAGHC15-1-655	3375	3380	3377.5	37698	60784	6987	1.34	2.62	111.78	81.70	-97.04
GHC15-1	EXPAGHC15-1-656	3380	3385	3382.5	37697	60785	6982	1.22	3.71	101.77	115.69	-92.91
GHC15-1	EXPAGHC15-1-657	3385	3390	3387.5	37697	60785	6977	1.43	3.49	119.29	108.83	-81.94
GHC15-1	EXPAGHC15-1-658	3390	3395	3392.5	37697	60785	6972	1.05	3.12	87.59	97.29	-102.55
GHC15-1	EXPAGHC15-1-659	3395	3400	3397.5	37697	60785	6967	1.29	5.4	107.61	168.39	-105.56
GHC15-1	EXPAGHC15-1-660	3400	3405	3402.5	37697	60785	6962	1.16	3.89	96.76	121.30	-135.31
GHC15-1	EXPAGHC15-1-661	3405	3410	3407.5	37697	60785	6957	1.42	3.35	118.45	104.47	-83.73
GHC15-1	EXPAGHC15-1-662	3410	3415	3412.5	37696	60786	6952	1.18	3.55	98.43	110.70	-89.81
GHC15-1	EXPAGHC15-1-663	3415	3420	3417.5	37696	60786	6947	1.27	6.26	105.94	195.21	-115.47
GHC15-1	EXPAGHC15-1-664	3420	3425	3422.5	37696	60786	6942	1.22	3.62	101.77	112.89	-91.27
GHC15-1	EXPAGHC15-1-665	3425	3430	3427.5	37696	60786	6937	1.08	4.27	90.09	133.15	-120.92
GHC15-1	EXPAGHC15-1-666	3430	3435	3432.5	37696	60786	6932	1.22	3.29	101.77	102.59	-127.88
GHC15-1	EXPAGHC15-1-667	3435	3440	3437.5	37695	60786	6927	1.21	3.88	100.93	120.99	-121.86
GHC15-1	EXPAGHC15-1-668	3440	3445	3442.5	37695	60787	6922	0.95	5.38	79.25	167.77	-141.71
GHC15-1	EXPAGHC15-1-669	3445	3450	3447.5	37695	60787	6917	1	4.54	83.42	141.57	-133.90
GHC15-1	EXPAGHC15-1-670	3450	3455	3452.5	37695	60787	6912	1.08	6.03	90.09	188.04	-145.14
GHC15-1	EXPAGHC15-1-671	3455	3460	3457.5	37695	60787	6907	1.4	5.28	116.78	164.65	-139.93
GHC15-1	EXPAGHC15-1-672	3460	3465	3462.5	37695	60787	6902	0.99	6.67	82.58	208.00	-108.21
GHC15-1	EXPAGHC15-1-673	3465	3470	3467.5	37694	60787	6897	1.23	3.88	102.60	120.99	-105.28
GHC15-1	EXPAGHC15-1-674	3470	3475	3472.5	37694	60788	6892	0.72	3.32	60.06	103.53	-114.96
GHC15-1	EXPAGHC15-1-675	3475	3480	3477.5	37694	60788	6887	0.39	3.81	32.53	118.81	-91.64
GHC15-1	EXPAGHC15-1-676	3480	3485	3482.5	37694	60788	6882	0.4	3.18	33.37	99.16	-75.84
GHC15-1	EXPAGHC15-1-677	3485	3490	3487.5	37694	60788	6877	0.49	3.04	40.87	94.80	-101.83
GHC15-1	EXPAGHC15-1-678	3490	3495	3492.5	37693	60788	6872	0.22	2.95	18.35	91.99	-106.38
GHC15-1	EXPAGHC15-1-679	3495	3500	3497.5	37693	60788	6867	0.26	4.59	21.69	143.13	-93.93
GHC15-1	EXPAGHC15-1-680	3500	3505	3502.5	37693	60788	6862	0.26	3.27	21.69	101.97	-122.29
GHC15-1	EXPAGHC15-1-681	3505	3510	3507.5	37693	60789	6857	0.74	5.54	61.73	172.76	-138.77
GHC15-1	EXPAGHC15-1-682	3510	3515	3512.5	37693	60789	6852	0.99	4.73	82.58	147.50	-124.50
GHC15-1	EXPAGHC15-1-683	3515	3520	3517.5	37693	60789	6847	0.83	5.36	69.24	167.15	-126.85
GHC15-1	EXPAGHC15-1-684	3520	3525	3522.5	37692	60789	6842	0.87	4.95	72.57	154.36	-95.93
GHC15-1	EXPAGHC15-1-685	3525	3530	3527.5	37692	60789	6837	0.9	5.48	75.08	170.89	-100.83
GHC15-1	EXPAGHC15-1-686	3530	3535	3532.5	37692	60789	6832	0.93	3.62	77.58	112.89	-135.49
GHC15-1	EXPAGHC15-1-687	3535	3540	3537.5	37692	60790	6827	0.95	5.29	79.25	164.96	-126.77
GHC15-1	EXPAGHC15-1-688	3540	3545	3542.5	37692	60790	6822	0.82	5.66	68.40	176.50	-113.16
GHC15-1	EXPAGHC15-1-689	3545	3550	3547.5	37691	60790	6817	1.3	4.55	108.44	141.89	-113.89
GHC15-1	EXPAGHC15-1-690	3550	3555	3552.5	37691	60790	6812	1.02	2.97	85.09	92.62	-94.13
GHC15-1	EXPAGHC15-1-691	3555	3560	3557.5	37691	60790	6807	1.01	4.13	84.25	128.79	-129.48
GHC15-1	EXPAGHC15-1-692	3560	3565	3562.5	37691	60790	6802	0.94	3.49	78.41	108.83	-133.44
GHC15-1	EXPAGHC15-1-693	3565	3570	3567.5	37691	60790	6797	0.64	7.33	53.39	228.58	-115.25
GHC15-1	EXPAGHC15-1-694	3570	3575	3572.5	37690	60791	6792	1.2	5.2	100.10	162.16	-128.77
GHC15-1	EXPAGHC15-1-695	3575	3580	3577.5	37690	60791	6787	0.78	3.86	65.07	120.37	-132.08
GHC15-1	EXPAGHC15-1-696	3580	3585	3582.5	37690	60791	6782	0.54	6.97	45.05	217.35	-133.44
GHC15-1	EXPAGHC15-1-697	3585	3590	3587.5	37690	60791	6777	0.74	5.3	61.73	165.27	-156.30
GHC15-1	EXPAGHC15-1-698	3590	3595	3592.5	37690	60791	6772	0.76	4.43	63.40	138.14	-111.51
GHC15-1	EXPAGHC15-1-699	3595	3600	3597.5	37689	60791	6767	0.87	3.81	72.57	118.81	-146.22

HOLE NUMBER	SAMPLE NUMBER	Depth from (ft)	Depth to (ft)	Average Depth (ft)	X (ft)	Y (ft)	Z (ft)	LECO Total Carbon (%)	LECO Total Sulfur (%)	Acid Neutralizing Potential (t/kt)	Acid Generating Potential (t/kt)	Net Neutralizing Potential (t/Kt)
GHC15-1	EXPAGHC15-1-700	3600	3605	3602.5	37689	60791	6762	1.05	4.95	87.59	154.36	-144.46
GHC15-1	EXPAGHC15-1-701	3605	3610	3607.5	37689	60792	6757	1.03	4.51	85.92	140.64	-105.07
GHC15-1	EXPAGHC15-1-702	3610	3615	3612.5	37689	60792	6752	0.72	8.38	60.06	261.32	-160.78
GHC15-1	EXPAGHC15-1-703	3615	3620	3617.5	37689	60792	6747	1.32	5.35	110.11	166.83	-92.70
GHC15-1	EXPAGHC15-1-704	3620	3625	3622.5	37688	60792	6742	1.04	5.77	86.75	179.93	-101.53
GHC15-1	EXPAGHC15-1-705	3625	3630	3627.5	37688	60792	6737	0.88	5.61	73.41	174.94	-101.11
GHC15-1	EXPAGHC15-1-706	3630	3635	3632.5	37688	60792	6732	0.8	5.79	66.73	180.55	-100.81
GHC15-1	EXPAGHC15-1-707	3635	3640	3637.5	37688	60792	6727	0.61	7.5	50.88	233.88	-101.64
GHC15-1	EXPAGHC15-1-708	3640	3645	3642.5	37688	60793	6722	0.94	5.36	78.41	167.15	-97.37
GHC15-1	EXPAGHC15-1-709	3645	3650	3647.5	37687	60793	6717	0.75	6.49	62.56	202.38	-115.56
GHC15-1	EXPAGHC15-1-710	3650	3655	3652.5	37687	60793	6712	0.87	6.17	72.57	192.40	-106.10
GHC15-1	EXPAGHC15-1-711	3655	3660	3657.5	37687	60793	6707	0.65	10.7	54.22	333.67	-111.72
GHC15-1	EXPAGHC15-1-712	3660	3665	3662.5	37687	60793	6702	0.88	5.34	73.41	166.52	-146.44
GHC15-1	EXPAGHC15-1-713	3665	3670	3667.5	37687	60793	6697	0.9	5.18	75.08	161.53	-104.12
GHC15-1	EXPAGHC15-1-714	3670	3675	3672.5	37686	60794	6692	0.99	4.85	82.58	151.24	-69.92
GHC15-1	EXPAGHC15-1-715	3675	3680	3677.5	37686	60794	6687	0.98	3.92	81.75	122.24	-92.16
GHC15-1	EXPAGHC15-1-716	3680	3685	3682.5	37686	60794	6682	0.73	7.68	60.89	239.49	-95.55
GHC15-1	EXPAGHC15-1-717	3685	3690	3687.5	37686	60794	6677	0.92	4.71	76.74	146.88	-87.86
GHC15-1	EXPAGHC15-1-718	3690	3695	3692.5	37686	60794	6672	0.81	5.07	67.57	158.10	-142.98
GHC15-1	EXPAGHC15-1-719	3695	3700	3697.5	37685	60794	6667	0.86	4.33	71.74	135.03	-85.93
GHC15-1	EXPAGHC15-1-720	3700	3705	3702.5	37685	60795	6662	1	4.34	83.42	135.34	-98.49
GHC15-1	EXPAGHC15-1-721	3705	3710	3707.5	37685	60795	6657	0.61	10.1	50.88	314.96	-120.63
GHC15-1	EXPAGHC15-1-722	3710	3715	3712.5	37685	60795	6652	1.16	5.03	96.76	156.85	-101.92
GHC15-1	EXPAGHC15-1-723	3715	3720	3717.5	37685	60795	6647	1.11	4.91	92.59	153.11	-89.75
GHC15-1	EXPAGHC15-1-724	3720	3725	3722.5	37685	60795	6642	0.79	8.65	65.90	269.74	-90.03
GHC15-1	EXPAGHC15-1-725	3725	3730	3727.5	37684	60795	6637	0.96	4.44	80.08	138.46	-93.19
GHC15-1	EXPAGHC15-1-726	3730	3735	3732.5	37684	60796	6632	0.77	8.48	64.23	264.44	-62.33
GHC15-1	EXPAGHC15-1-727	3735	3740	3737.5	37684	60796	6627	1.18	4.24	98.43	132.22	-61.34
GHC15-1	EXPAGHC15-1-728	3740	3745	3742.5	37684	60796	6622	1.06	6.56	88.42	204.57	-81.55
GHC15-1	EXPAGHC15-1-729	3745	3750	3747.5	37684	60796	6617	0.86	5.96	71.74	185.86	-148.45
GHC15-1	EXPAGHC15-1-730	3750	3755	3752.5	37684	60796	6612	1.05	5.63	87.59	175.56	-78.83
GHC15-1	EXPAGHC15-1-731	3755	3760	3757.5	37683	60797	6608	0.86	6.18	71.74	192.72	-114.83
GHC15-1	EXPAGHC15-1-732	3760	3765	3762.5	37683	60797	6603	0.83	4.69	69.24	146.25	-83.14
GHC15-1	EXPAGHC15-1-733	3765	3770	3767.5	37683	60797	6598	0.78	5.51	65.07	171.82	-139.99
GHC15-1	EXPAGHC15-1-734	3770	3775	3772.5	37683	60797	6593	0.78	4.41	65.07	137.52	-111.61
GHC15-1	EXPAGHC15-1-735	3775	3780	3777.5	37683	60797	6588	0.8	5.64	66.73	175.88	-99.44
GHC15-1	EXPAGHC15-1-736	3780	3785	3782.5	37683	60797	6583	0.91	4.46	75.91	139.08	-102.33
GHC15-1	EXPAGHC15-1-737	3785	3790	3787.5	37683	60798	6578	0.63	9.38	52.55	292.50	-96.23
GHC15-1	EXPAGHC15-1-738	3790	3795	3792.5	37682	60798	6573	0.93	7.82	77.58	243.86	-74.19
GHC15-1	EXPAGHC15-1-739	3795	3800	3797.5	37682	60798	6568	1.03	4.22	85.92	131.60	-149.25
GHC15-1	EXPAGHC15-1-740	3800	3805	3802.5	37682	60798	6563	0.99	5.17	82.58	161.22	-106.22
GHC15-1	EXPAGHC15-1-741	3805	3810	3807.5	37682	60798	6558	0.81	6.38	67.57	198.95	-130.43
GHC15-1	EXPAGHC15-1-742	3810	3815	3812.5	37682	60798	6553	0.82	7.18	68.40	223.90	-103.41
GHC15-1	EXPAGHC15-1-743	3815	3820	3817.5	37682	60799	6548	0.91	6.89	75.91	214.86	-103.61
GHC15-1	EXPAGHC15-1-744	3820	3825	3822.5	37681	60799	6543	0.91	6.22	75.91	193.96	-153.48
GHC15-1	EXPAGHC15-1-745	3825	3830	3827.5	37681	60799	6538	0.9	6.89	75.08	214.86	-160.46
GHC15-1	EXPAGHC15-1-746	3830	3835	3832.5	37681	60799	6533	0.69	10.8	57.56	336.79	-98.27
GHC15-1	EXPAGHC15-1-747	3835	3840	3837.5	37681	60799	6528	0.83	5.5	69.24	171.51	-189.68
GHC15-1	EXPAGHC15-1-748	3840	3845	3842.5	37681	60799	6523	1.11	3.93	92.59	122.55	-121.19
GHC15-1	EXPAGHC15-1-749	3845	3850	3847.5	37680	60800	6518	1.17	3.78	97.60	117.87	-156.52
GHC15-1	EXPAGHC15-1-750	3850	3855	3852.5	37680	60800	6513	1.06	4.77	88.42	148.75	-128.25
GHC15-1	EXPAGHC15-1-751	3855	3860	3857.5	37680	60800	6508	0.94	5.61	78.41	174.94	-55.17
GHC15-1	EXPAGHC15-1-752	3860	3865	3862.5	37680	60800	6503	0.82	5.51	68.40	171.82	-61.83
GHC15-1	EXPAGHC15-1-753	3865	3870	3867.5	37680	60800	6498	0.95	4.91	79.25	153.11	-116.71
GHC15-1	EXPAGHC15-1-754	3870	3874	3872	37680	60800	6494	0.96	5.47	80.08	170.58	-131.67

APPENDIX 3.2

GHC15-1 - LABORATORY REPORTS

August 17, 2015

Report to:

Jeffrey Winick
Schlumberger Water Services
1875 Lawrence Street
Suite 500
Denver, CO 80202

Bill to:

Accounts Payable
Adrian Brown Consultants, Inc.
130 W 4th Avenue
Denver, CO 80223

cc: Adrian Brown

Project ID:

ACZ Project ID: L25049

Jeffrey Winick:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on June 22, 2015. This project has been assigned to ACZ's project number, L25049. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L25049. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after September 16, 2015. If the samples are determined to be hazardous, additional charges apply for disposal (typically \$11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.



Scott Habermehl has reviewed
and approved this report.



Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/1700-1900/STATIC

ACZ Sample ID: **L25049-01**

Date Sampled: 06/19/15 00:00

Date Received: 06/22/15

Sample Matrix: Soil

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acid Generation Potential (calc on Sulfur total)	M600/2-78-054 3.2.4		123			t CaCO3/Kt	0.31	3.1	08/17/15 10:56	calc
Acid Neutralization Potential (calc)	M600/2-78-054 1.3		59.0			t CaCO3/Kt	1	5	08/17/15 10:56	calc
Acid-Base Potential (calc on Sulfur total)	M600/2-78-054 1.3		-64.1			t CaCO3/Kt			08/17/15 10:56	calc
Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	1	0.7		*	%	0.1	0.5	08/03/15 16:45	cra
Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	1	0.7		*	%	0.1	0.5	08/03/15 16:45	cra
Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	1		U	*	%	0.1	0.5	08/03/15 16:45	cra
Net Acid Generation Procedure	Single NAG - EGI 2002									
NAG		1	47		*	Kg H2SO4/t	1	1	07/28/15 0:00	brd
pH After Oxidation		1	2.5		*	units	0.1	0.1	07/28/15 0:00	brd
Neutralization Potential as CaCO3	M600/2-78-054 3.2.3	1	5.9		*	%	0.1	0.5	08/11/15 11:21	cra
Sulfur Forms	M600/2-78-054 3.2.4-MOD									
Sulfur HCl Residue		1	3.11		*	%	0.01	0.1	08/03/15 0:00	cra
Sulfur HNO3 Residue		1	0.03	B	*	%	0.01	0.1	08/03/15 0:00	cra
Sulfur Organic Residual		1	0.03	B	*	%	0.01	0.1	08/03/15 0:00	cra
Sulfur Pyritic Sulfide		1	3.08		*	%	0.01	0.1	08/03/15 0:00	cra
Sulfur Sulfate		1	0.83		*	%	0.01	0.1	08/03/15 0:00	cra
Sulfur Total		1	3.94		*	%	0.01	0.1	08/03/15 0:00	cra
Total Sulfur minus Sulfate		1	3.11		*	%	0.01	0.1	08/03/15 0:00	cra

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972				*				07/16/15 9:00	brd
Crush and Pulverize (Ring & Puck)	EPA-600/2-78-054 3.1.3				*				07/28/15 8:00	brd

Arizona license number: AZ0102

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/1900-2100/STATIC

ACZ Sample ID: **L25049-02**

Date Sampled: 06/19/15 00:00

Date Received: 06/22/15

Sample Matrix: Soil

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acid Generation Potential (calc on Sulfur total)	M600/2-78-054 3.2.4		118			t CaCO3/Kt	0.31	3.1	08/17/15 10:56	calc
Acid Neutralization Potential (calc)	M600/2-78-054 1.3		68.0			t CaCO3/Kt	1	5	08/17/15 10:56	calc
Acid-Base Potential (calc on Sulfur total)	M600/2-78-054 1.3		-50.1			t CaCO3/Kt			08/17/15 10:56	calc
Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	1	0.9		*	%	0.1	0.5	08/03/15 22:31	cra
Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	1	0.9		*	%	0.1	0.5	08/03/15 22:31	cra
Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	1		U	*	%	0.1	0.5	08/03/15 22:31	cra
Net Acid Generation Procedure	Single NAG - EGI 2002									
NAG		1	32		*	Kg H2SO4/t	1	1	07/28/15 0:00	brd
pH After Oxidation		1	2.6		*	units	0.1	0.1	07/28/15 0:00	brd
Neutralization Potential as CaCO3	M600/2-78-054 3.2.3	1	6.8		*	%	0.1	0.5	08/11/15 12:02	cra
Sulfur Forms	M600/2-78-054 3.2.4-MOD									
Sulfur HCl Residue		1	2.72		*	%	0.01	0.1	08/04/15 0:00	cra
Sulfur HNO3 Residue		1	0.04	B	*	%	0.01	0.1	08/04/15 0:00	cra
Sulfur Organic Residual		1	0.04	B	*	%	0.01	0.1	08/04/15 0:00	cra
Sulfur Pyritic Sulfide		1	2.68		*	%	0.01	0.1	08/04/15 0:00	cra
Sulfur Sulfate		1	1.06		*	%	0.01	0.1	08/04/15 0:00	cra
Sulfur Total		1	3.78		*	%	0.01	0.1	08/04/15 0:00	cra
Total Sulfur minus Sulfate		1	2.72		*	%	0.01	0.1	08/04/15 0:00	cra

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972				*				07/16/15 9:00	brd
Crush and Pulverize (Ring & Puck)	EPA-600/2-78-054 3.1.3				*				07/28/15 8:03	brd

Arizona license number: AZ0102

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/2100-2300/STATIC

ACZ Sample ID: **L25049-03**

Date Sampled: 06/19/15 00:00

Date Received: 06/22/15

Sample Matrix: Soil

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acid Generation Potential (calc on Sulfur total)	M600/2-78-054 3.2.4		121			t CaCO3/Kt	0.31	3.1	08/17/15 10:56	calc
Acid Neutralization Potential (calc)	M600/2-78-054 1.3		48.0			t CaCO3/Kt	1	5	08/17/15 10:56	calc
Acid-Base Potential (calc on Sulfur total)	M600/2-78-054 1.3		-72.6			t CaCO3/Kt			08/17/15 10:56	calc
Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	1	0.6		*	%	0.1	0.5	08/04/15 1:24	cra
Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	1	0.6		*	%	0.1	0.5	08/04/15 1:24	cra
Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	1		U	*	%	0.1	0.5	08/04/15 1:24	cra
Net Acid Generation Procedure	Single NAG - EGI 2002									
NAG		1	45		*	Kg H2SO4/t	1	1	07/28/15 0:00	brd
pH After Oxidation		1	2.5		*	units	0.1	0.1	07/28/15 0:00	brd
Neutralization Potential as CaCO3	M600/2-78-054 3.2.3	1	4.8		*	%	0.1	0.5	08/11/15 12:16	cra
Sulfur Forms	M600/2-78-054 3.2.4-MOD									
Sulfur HCl Residue		1	2.83		*	%	0.01	0.1	08/04/15 0:00	cra
Sulfur HNO3 Residue		1	0.03	B	*	%	0.01	0.1	08/04/15 0:00	cra
Sulfur Organic Residual		1	0.03	B	*	%	0.01	0.1	08/04/15 0:00	cra
Sulfur Pyritic Sulfide		1	2.80		*	%	0.01	0.1	08/04/15 0:00	cra
Sulfur Sulfate		1	1.03		*	%	0.01	0.1	08/04/15 0:00	cra
Sulfur Total		1	3.86		*	%	0.01	0.1	08/04/15 0:00	cra
Total Sulfur minus Sulfate		1	2.83		*	%	0.01	0.1	08/04/15 0:00	cra

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972				*				07/16/15 9:00	brd
Crush and Pulverize (Ring & Puck)	EPA-600/2-78-054 3.1.3				*				07/28/15 8:06	brd

Arizona license number: AZ0102

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/2300-2500/STATIC

ACZ Sample ID: **L25049-04**

Date Sampled: 06/19/15 00:00

Date Received: 06/22/15

Sample Matrix: Soil

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acid Generation Potential (calc on Sulfur total)	M600/2-78-054 3.2.4		99.4			t CaCO3/Kt	0.31	3.1	08/17/15 10:56	calc
Acid Neutralization Potential (calc)	M600/2-78-054 1.3		65.0			t CaCO3/Kt	1	5	08/17/15 10:56	calc
Acid-Base Potential (calc on Sulfur total)	M600/2-78-054 1.3		-34.4			t CaCO3/Kt			08/17/15 10:56	calc
Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	1	0.8		*	%	0.1	0.5	08/04/15 4:17	cra
Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	1	0.8		*	%	0.1	0.5	08/04/15 4:17	cra
Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	1		U	*	%	0.1	0.5	08/04/15 4:17	cra
Net Acid Generation Procedure	Single NAG - EGI 2002									
NAG		1	22		*	Kg H2SO4/t	1	1	07/28/15 0:00	brd
pH After Oxidation		1	2.7		*	units	0.1	0.1	07/28/15 0:00	brd
Neutralization Potential as CaCO3	M600/2-78-054 3.2.3	1	6.5		*	%	0.1	0.5	08/11/15 12:29	cra
Sulfur Forms	M600/2-78-054 3.2.4-MOD									
Sulfur HCl Residue		1	2.04		*	%	0.01	0.1	08/04/15 0:00	cra
Sulfur HNO3 Residue		1	0.03	B	*	%	0.01	0.1	08/04/15 0:00	cra
Sulfur Organic Residual		1	0.03	B	*	%	0.01	0.1	08/04/15 0:00	cra
Sulfur Pyritic Sulfide		1	2.01		*	%	0.01	0.1	08/04/15 0:00	cra
Sulfur Sulfate		1	1.14		*	%	0.01	0.1	08/04/15 0:00	cra
Sulfur Total		1	3.18		*	%	0.01	0.1	08/04/15 0:00	cra
Total Sulfur minus Sulfate		1	2.04		*	%	0.01	0.1	08/04/15 0:00	cra

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972				*				07/16/15 9:00	brd
Crush and Pulverize (Ring & Puck)	EPA-600/2-78-054 3.1.3				*				07/28/15 8:09	brd

Arizona license number: AZ0102

Report Header Explanations

<i>Batch</i>	A distinct set of samples analyzed at a specific time
<i>Found</i>	Value of the QC Type of interest
<i>Limit</i>	Upper limit for RPD, in %.
<i>Lower</i>	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
<i>MDL</i>	Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #5). Allows for instrument and annual fluctuations.
<i>PCN/SCN</i>	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
<i>PQL</i>	Practical Quantitation Limit. Synonymous with the EPA term "minimum level".
<i>QC</i>	True Value of the Control Sample or the amount added to the Spike
<i>Rec</i>	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
<i>RPD</i>	Relative Percent Difference, calculation used for Duplicate QC Types
<i>Upper</i>	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
<i>Sample</i>	Value of the Sample of interest

QC Sample Types

<i>AS</i>	Analytical Spike (Post Digestion)	<i>LCSWD</i>	Laboratory Control Sample - Water Duplicate
<i>ASD</i>	Analytical Spike (Post Digestion) Duplicate	<i>LFB</i>	Laboratory Fortified Blank
<i>CCB</i>	Continuing Calibration Blank	<i>LFM</i>	Laboratory Fortified Matrix
<i>CCV</i>	Continuing Calibration Verification standard	<i>LFMD</i>	Laboratory Fortified Matrix Duplicate
<i>DUP</i>	Sample Duplicate	<i>LRB</i>	Laboratory Reagent Blank
<i>ICB</i>	Initial Calibration Blank	<i>MS</i>	Matrix Spike
<i>ICV</i>	Initial Calibration Verification standard	<i>MSD</i>	Matrix Spike Duplicate
<i>ICSAB</i>	Inter-element Correction Standard - A plus B solutions	<i>PBS</i>	Prep Blank - Soil
<i>LCSS</i>	Laboratory Control Sample - Soil	<i>PBW</i>	Prep Blank - Water
<i>LCSSD</i>	Laboratory Control Sample - Soil Duplicate	<i>PQV</i>	Practical Quantitation Verification standard
<i>LCSW</i>	Laboratory Control Sample - Water	<i>SDL</i>	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3)	EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste.
(5)	Standard Methods for the Examination of Water and Wastewater.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3)	Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5)	If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click:

<http://www.acz.com/public/extquallist.pdf>

Adrian Brown Consultants, Inc.

ACZ Project ID: **L25049**

Carbon, total (TC)

ASA No.9 29-2.2.4 Combustion/IR

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG387844													
WG387844PBS	PBS	08/03/15 11:00				U	%		-0.3	0.3			
WG387844LCSS	LCSS	08/03/15 13:52	PCN44492	4.19		4.2	%		80	120			
L25049-01DUP	DUP	08/03/15 19:38			.7	.7	%				0	20	RA

Carbon, total inorganic (TIC)

ASA No. 9 29-2.2.4 (calc TC - TOC)

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG387844													
WG387844PBS	PBS	08/03/15 11:00				U	%		-0.3	0.3			
L25049-01DUP	DUP	08/03/15 19:38			.7	.7	%				0	20	RA

Carbon, total organic (TOC)

ASA No.9 29-2.2.4 Combustion/IR

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG387844													
WG387844PBS	PBS	08/03/15 11:00				U	%		-0.3	0.3			
L25049-01DUP	DUP	08/03/15 19:38			U	U	%				0	20	RA

Net Acid Generation

Single NAG - EGI 2002

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG387539													
L25049-01DUP	DUP	07/28/15 11:48			47	46.6	g H ₂ SO ₄ /				1	20	

Neutralization Potential as CaCO₃

M600/2-78-054 3.2.3

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG388076													
WG388076PBS	PBS	08/11/15 10:54				U	%		-0.2	0.2			
WG388076LCSS	LCSS	08/11/15 11:08	PCN47543	4.96		5.05	%	102	80	120			
L25049-01MS	MS	08/11/15 11:35	SI141024-1	1	5.9	6.98	%	108	70	130			
L25049-01DUP	DUP	08/11/15 11:49			5.9	5.83	%				1	20	

Sulfur Organic Residual

M600/2-78-054 3.2.4-MOD

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG387842													
L25049-01DUP	DUP	08/03/15 22:53			.03	.02	%				40	20	RA

Sulfur Pyritic Sulfide

M600/2-78-054 3.2.4-MOD

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG387842													
L25049-01DUP	DUP	08/03/15 22:53			3.08	3.02	%				2	20	

Sulfur Sulfate

M600/2-78-054 3.2.4-MOD

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG387842													
L25049-01DUP	DUP	08/03/15 22:53			.83	.99	%				18	20	

Adrian Brown Consultants, Inc.

ACZ Project ID: **L25049**

Sulfur Total

M600/2-78-054 3.2.4-MOD

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG387842													
WG387842PBS	PBS	08/03/15 11:00				U	%		-0.03	0.03			
WG387842LCSS	LCSS	08/03/15 13:58	PCN44492	4.07		3.98	%	98	80	120			
L25049-01MS	MS	08/03/15 19:55	PCN47988	1.1	3.94	5.03	%	99	80	120			
L25049-01DUP	DUP	08/03/15 22:53			3.94	4.03	%				2	20	

Total Sulfur Minus Sulfate

M600/2-78-054 3.2.4-MOD

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG387842													
L25049-01DUP	DUP	08/03/15 22:53			3.11	3.04	%				2	20	

Adrian Brown Consultants, Inc.

ACZ Project ID: **L25049**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L25049-01	WG387844	Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	Q6	Sample was received above recommended temperature.
			ASA No. 9 29-2.2.4 (calc TC - TOC)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
			ASA No. 9 29-2.2.4 (calc TC - TOC)	ZQ	Analyte was not evaluated in the laboratory control standard. Either the analyte is not included in the scope of the analytical method or a commercial standard containing the analyte is not available.
		Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
			ASA No.9 29-2.2.4 Combustion/IR	ZQ	Analyte was not evaluated in the laboratory control standard. Either the analyte is not included in the scope of the analytical method or a commercial standard containing the analyte is not available.
	WG387842	Sulfur Organic Residual	M600/2-78-054 3.2.4-MOD	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L25049-02	WG387844	Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	Q6	Sample was received above recommended temperature.
			ASA No. 9 29-2.2.4 (calc TC - TOC)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
			ASA No. 9 29-2.2.4 (calc TC - TOC)	ZQ	Analyte was not evaluated in the laboratory control standard. Either the analyte is not included in the scope of the analytical method or a commercial standard containing the analyte is not available.
		Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
			ASA No.9 29-2.2.4 Combustion/IR	ZQ	Analyte was not evaluated in the laboratory control standard. Either the analyte is not included in the scope of the analytical method or a commercial standard containing the analyte is not available.
	WG387842	Sulfur Organic Residual	M600/2-78-054 3.2.4-MOD	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

Adrian Brown Consultants, Inc.

ACZ Project ID: **L25049**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L25049-03	WG387844	Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	Q6	Sample was received above recommended temperature.
			ASA No. 9 29-2.2.4 (calc TC - TOC)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
			ASA No. 9 29-2.2.4 (calc TC - TOC)	ZQ	Analyte was not evaluated in the laboratory control standard. Either the analyte is not included in the scope of the analytical method or a commercial standard containing the analyte is not available.
		Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
			ASA No.9 29-2.2.4 Combustion/IR	ZQ	Analyte was not evaluated in the laboratory control standard. Either the analyte is not included in the scope of the analytical method or a commercial standard containing the analyte is not available.
	WG387842	Sulfur Organic Residual	M600/2-78-054 3.2.4-MOD	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L25049-04	WG387844	Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	Q6	Sample was received above recommended temperature.
			ASA No. 9 29-2.2.4 (calc TC - TOC)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
			ASA No. 9 29-2.2.4 (calc TC - TOC)	ZQ	Analyte was not evaluated in the laboratory control standard. Either the analyte is not included in the scope of the analytical method or a commercial standard containing the analyte is not available.
		Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
			ASA No.9 29-2.2.4 Combustion/IR	ZQ	Analyte was not evaluated in the laboratory control standard. Either the analyte is not included in the scope of the analytical method or a commercial standard containing the analyte is not available.
	WG387842	Sulfur Organic Residual	M600/2-78-054 3.2.4-MOD	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

Adrian Brown Consultants, Inc.ACZ Project ID: **L25049**

Soil Analysis

The following parameters are not offered for certification or are not covered by AZ certificate #AZ0102.

Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR
Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)
Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR
NAG	Single NAG - EGI 2002
Neutralization Potential as CaCO ₃	M600/2-78-054 3.2.3
pH After Oxidation	Single NAG - EGI 2002
Sulfur HCl Residue	M600/2-78-054 3.2.4-MOD
Sulfur HNO ₃ Residue	M600/2-78-054 3.2.4-MOD
Sulfur Organic Residual	M600/2-78-054 3.2.4-MOD
Sulfur Pyritic Sulfide	M600/2-78-054 3.2.4-MOD
Sulfur Sulfate	M600/2-78-054 3.2.4-MOD
Sulfur Total	M600/2-78-054 3.2.4-MOD
Total Sulfur minus Sulfate	M600/2-78-054 3.2.4-MOD

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR
Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)
Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR
NAG	Single NAG - EGI 2002
Neutralization Potential as CaCO ₃	M600/2-78-054 3.2.3
pH After Oxidation	Single NAG - EGI 2002
Sulfur HCl Residue	M600/2-78-054 3.2.4-MOD
Sulfur HNO ₃ Residue	M600/2-78-054 3.2.4-MOD
Sulfur Organic Residual	M600/2-78-054 3.2.4-MOD
Sulfur Pyritic Sulfide	M600/2-78-054 3.2.4-MOD
Sulfur Sulfate	M600/2-78-054 3.2.4-MOD
Sulfur Total	M600/2-78-054 3.2.4-MOD
Total Sulfur minus Sulfate	M600/2-78-054 3.2.4-MOD

Adrian Brown Consultants, Inc.

ACZ Project ID: L25049

Date Received: 06/22/2015 10:00

Received By: ear

Date Printed: 6/22/2015

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?	☐	☐	☒
2) Is the Chain of Custody or other directive shipping papers present?	☒	☐	☐
3) Does this project require special handling procedures such as CLP protocol?	☐	☐	☒
4) Are any samples NRC licensable material?	☐	☐	☒
5) If samples are received past hold time, proceed with requested short hold time analyses?	☒	☐	☐
6) Is the Chain of Custody complete and accurate?	☒	☐	☐
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?	☐	☒	☐

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	☒	☐	☐
9) Are all labels on containers and are they intact and legible?	☒	☐	☐
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	☒	☐	☐
11) For preserved bottle types, was the pH checked and within limits? ¹	☐	☐	☒
12) Is there sufficient sample volume to perform all requested work?	☒	☐	☐
13) Is the custody seal intact on all containers?	☐	☐	☒
14) Are samples that require zero headspace acceptable?	☐	☐	☒
15) Are all sample containers appropriate for analytical requirements?	☒	☐	☐
16) Is there an Hg-1631 trip blank present?	☐	☐	☒
17) Is there a VOA trip blank present?	☐	☐	☒
18) Were all samples received within hold time?	☒	☐	☐

Chain of Custody Related Remarks

The 'Relinquished By' field on the COC was not completed. Left a message for Jeffrey Winick on 6/22/15.

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
-----	-----	-----	-----
NA22006	18.5	23	N/A

Was ice present in the shipment container(s)?

No - Wet or gel ice was not present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

Adrian Brown Consultants, Inc.

ACZ Project ID: L25049

Date Received: 06/22/2015 10:00

Received By: ear

Date Printed: 6/22/2015

¹ The preservation of the following bottle types is not checked at sample receipt: Orange (oil and grease), Purple (total cyanide), Pink (dissolved cyanide), Brown (arsenic speciation), Sterile (fecal coliform), EDTA (sulfite), HCl preserved vial (organics), Na₂S₂O₃ preserved vial (organics), and HG-1631 (total/dissolved mercury by method 1631).

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/1700-2500/KINETIC

ACZ Sample ID: **L25050-01**

Date Sampled: 06/19/15 00:00

Date Received: 06/22/15

Sample Matrix: Soil

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acid Generation Potential (calc on Sulfur total)	M600/2-78-054 3.2.4		104			t CaCO ₃ /Kt	0.31	3.1	08/24/15 14:57	calc
Acid Neutralization Potential (calc)	M600/2-78-054 1.3		57.0			t CaCO ₃ /Kt	1	5	08/24/15 14:57	calc
Acid-Base Potential (calc on Sulfur total)	M600/2-78-054 1.3		-47.1			t CaCO ₃ /Kt			08/24/15 14:57	calc
Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	1	0.8		*	%	0.1	0.5	08/04/15 7:10	cra
Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	1	0.8		*	%	0.1	0.5	08/04/15 7:10	cra
Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	1		U	*	%	0.1	0.5	08/04/15 7:10	cra
Net Acid Generation Procedure	Single NAG - EGI 2002									
NAG		1	29		*	Kg H ₂ SO ₄ /t	1	1	07/28/15 0:00	brd
pH After Oxidation		1	2.6		*	units	0.1	0.1	07/28/15 0:00	brd
Neutralization Potential as CaCO ₃	M600/2-78-054 3.2.3	1	5.7		*	%	0.1	0.5	08/11/15 12:43	cra
Sieve- 63 um (230 mesh)	WG388813		*****							WIP
Sieve- 125 um (120 mesh)	WG388813		*****							WIP
Sieve- 250 um (60 mesh)	WG388813		*****							WIP
Sieve- 500 um (35 mesh)	WG388813		*****							WIP
Sieve- 850 um (20 mesh)	WG388813		*****							WIP
Sieve- 2000 um (2.0 mm)	WG388813		*****							WIP
Sieve- 4000 um (4.0mm)	WG388813		*****							WIP
Sulfur Forms	M600/2-78-054 3.2.4-MOD									
Sulfur HCl Residue		1	2.62		*	%	0.01	0.1	08/04/15 0:00	cra
Sulfur HNO ₃ Residue		1	0.04	B	*	%	0.01	0.1	08/04/15 0:00	cra
Sulfur Organic Residual		1	0.04	B	*	%	0.01	0.1	08/04/15 0:00	cra
Sulfur Pyritic Sulfide		1	2.58		*	%	0.01	0.1	08/04/15 0:00	cra
Sulfur Sulfate		1	0.71		*	%	0.01	0.1	08/04/15 0:00	cra
Sulfur Total		1	3.33		*	%	0.01	0.1	08/04/15 0:00	cra
Total Sulfur minus Sulfate		1	2.62		*	%	0.01	0.1	08/04/15 0:00	cra

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/1700-2500/KINETIC

ACZ Sample ID: **L25050-01**

Date Sampled: 06/19/15 00:00

Date Received: 06/22/15

Sample Matrix: Soil

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972				*				07/16/15 9:00	brd
Crush and Pulverize (Ring & Puck)	EPA-600/2-78-054 3.1.3				*				07/28/15 8:12	brd
Humidity Cell Test	D5744-12									
Grain Size			*****							WIP
Sample Weight			*****							WIP

Arizona license number: AZ0102

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/1700-2500/KINETIC-WEEK 0

ACZ Sample ID: **L25050-02**

Date Sampled: 07/07/15 17:00

Date Received: 06/22/15

Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1	0.07	B	*	mg/L	0.03	0.2	07/09/15 19:56	jjc
Antimony, dissolved	M200.8 ICP-MS	1	0.0006	B	*	mg/L	0.0004	0.002	07/08/15 17:43	mfm
Arsenic, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0002	0.001	07/08/15 17:43	mfm
Barium, dissolved	M200.7 ICP	1	0.134		*	mg/L	0.003	0.02	07/10/15 11:59	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.00005	0.0003	07/08/15 17:43	mfm
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/09/15 19:56	jjc
Boron, dissolved	M200.7 ICP	1	0.04	B	*	mg/L	0.01	0.05	07/10/15 11:59	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/08/15 17:43	mfm
Calcium, dissolved	M200.7 ICP	1	116		*	mg/L	0.1	0.5	07/09/15 19:56	jjc
Chromium, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	07/09/15 19:56	jjc
Cobalt, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	07/09/15 19:56	jjc
Copper, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	07/09/15 19:56	jjc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/09/15 19:56	jjc
Iron, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.05	07/09/15 19:56	jjc
Lead, dissolved	M200.8 ICP-MS	1	0.0002	B	*	mg/L	0.0001	0.0005	07/08/15 17:43	mfm
Lithium, dissolved	M200.7 ICP	1	0.015	B	*	mg/L	0.008	0.04	07/09/15 19:56	jjc
Magnesium, dissolved	M200.7 ICP	1	2.5		*	mg/L	0.2	1	07/09/15 19:56	jjc
Manganese, dissolved	M200.7 ICP	1	0.412		*	mg/L	0.005	0.03	07/09/15 19:56	jjc
Mercury, dissolved	M245.1 CVAA	1		U	*	mg/L	0.0002	0.001	07/15/15 9:08	nco
Molybdenum, dissolved	M200.7 ICP	1	0.02	B	*	mg/L	0.02	0.1	07/09/15 19:56	jjc
Nickel, dissolved	M200.7 ICP	1		U	*	mg/L	0.008	0.04	07/09/15 19:56	jjc
Potassium, dissolved	M200.7 ICP	1	8.4		*	mg/L	0.2	1	07/09/15 19:56	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/09/15 19:56	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0007		*	mg/L	0.0001	0.0003	07/08/15 17:43	mfm
Silver, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.03	07/10/15 11:59	aeb
Sodium, dissolved	M200.7 ICP	1	13.3		*	mg/L	0.2	1	07/09/15 19:56	jjc
Strontium, dissolved	M200.7 ICP	1	4.640		*	mg/L	0.005	0.03	07/09/15 19:56	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/08/15 17:43	mfm
Tin, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/09/15 19:56	jjc
Titanium, dissolved	M200.7 ICP	1	0.006	B	*	mg/L	0.005	0.03	07/09/15 19:56	jjc
Vanadium, dissolved	M200.7 ICP	1		U	*	mg/L	0.005	0.03	07/09/15 19:56	jjc
Zinc, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	07/09/15 19:56	jjc

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/1700-2500/KINETIC-WEEK 0

ACZ Sample ID: **L25050-02**

Date Sampled: 07/07/15 17:00

Date Received: 06/22/15

Sample Matrix: *Leachate*

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity--Humidity Cell Test	SM2510B	1	659		*	umhos/cm	1	10	07/06/15 14:36	cra
End of leach volumes and mass	D5744-12									
Interstitial Weight		1	124			g			07/06/15 0:00	pta
Leachate Volume Added		1	1000			mL			07/06/15 0:00	pta
Leachate Volume Recovered		1	940			g			07/06/15 0:00	pta
Oxidation Reduction Potential (Eh)	D1498-08	1	399		*	mv	1	1	07/06/15 12:12	cra
pH, Humidity Cell Test	M9045D/M9040C									
pH		1	6.5			units	0.1	0.1	07/06/15 0:00	cra
pH measured at		1	22.3			C	0.1	0.1	07/06/15 0:00	cra

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acidity as CaCO ₃	SM2310B - Titration	1		U	*	mg/L	10	20	07/15/15 12:03	enb
Alkalinity as CaCO ₃	SM2320B - Titration									
Bicarbonate as CaCO ₃		1	14.8	B	*	mg/L	2	20	07/08/15 0:00	enb
Carbonate as CaCO ₃		1		U	*	mg/L	2	20	07/08/15 0:00	enb
Hydroxide as CaCO ₃		1		U	*	mg/L	2	20	07/08/15 0:00	enb
Total Alkalinity		1	14.8	B	*	mg/L	2	20	07/08/15 0:00	enb
Sulfate	D516-02/-07 - Turbidimetric	20	291		*	mg/L	20	100	07/08/15 15:09	mss2

Arizona license number: **AZ0102**

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/1700-2500/KINETIC-WEEK 1

ACZ Sample ID: **L25050-03**

Date Sampled: 07/14/15 17:00

Date Received: 06/22/15

Sample Matrix: Leachate

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U	*	mg/L	0.03	0.2	07/15/15 15:45	aeb
Antimony, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0004	0.002	07/16/15 20:24	mfm
Arsenic, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0002	0.001	07/16/15 20:24	mfm
Barium, dissolved	M200.7 ICP	1	0.094		*	mg/L	0.003	0.02	07/15/15 15:45	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.00005	0.0003	07/16/15 20:24	mfm
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/15/15 15:45	aeb
Boron, dissolved	M200.7 ICP	1	0.03	B	*	mg/L	0.01	0.05	07/15/15 15:45	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/16/15 20:24	mfm
Calcium, dissolved	M200.7 ICP	1	85.4		*	mg/L	0.1	0.5	07/15/15 15:45	aeb
Chromium, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	07/15/15 15:45	aeb
Cobalt, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	07/16/15 17:02	aeb
Copper, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	07/15/15 15:45	aeb
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/15/15 15:45	aeb
Iron, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.05	07/15/15 15:45	aeb
Lead, dissolved	M200.8 ICP-MS	1	0.0006		*	mg/L	0.0001	0.0005	07/16/15 20:24	mfm
Lithium, dissolved	M200.7 ICP	1	0.008	B	*	mg/L	0.008	0.04	07/15/15 15:45	aeb
Magnesium, dissolved	M200.7 ICP	1	1.5		*	mg/L	0.2	1	07/15/15 15:45	aeb
Manganese, dissolved	M200.7 ICP	1	0.237		*	mg/L	0.005	0.03	07/15/15 15:45	aeb
Mercury, dissolved	M245.1 CVAA	1		U	*	mg/L	0.0002	0.001	07/21/15 16:20	nco
Molybdenum, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.1	07/15/15 15:45	aeb
Nickel, dissolved	M200.7 ICP	1		U	*	mg/L	0.008	0.04	07/15/15 15:45	aeb
Potassium, dissolved	M200.7 ICP	1	4.3		*	mg/L	0.2	1	07/15/15 15:45	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/15/15 15:45	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0006		*	mg/L	0.0001	0.0003	07/16/15 20:24	mfm
Silver, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.03	07/15/15 15:45	aeb
Sodium, dissolved	M200.7 ICP	1	6.3		*	mg/L	0.2	1	07/15/15 15:45	aeb
Strontium, dissolved	M200.7 ICP	1	3.390		*	mg/L	0.005	0.03	07/15/15 15:45	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/16/15 20:24	mfm
Tin, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/15/15 15:45	aeb
Titanium, dissolved	M200.7 ICP	1		U	*	mg/L	0.005	0.03	07/15/15 15:45	aeb
Vanadium, dissolved	M200.7 ICP	1		U	*	mg/L	0.005	0.03	07/15/15 15:45	aeb
Zinc, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	07/15/15 15:45	aeb

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/1700-2500/KINETIC-WEEK 1

ACZ Sample ID: **L25050-03**

Date Sampled: 07/14/15 17:00

Date Received: 06/22/15

Sample Matrix: Leachate

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity--Humidity Cell Test	SM2510B	1	494		*	umhos/cm	1	10	07/13/15 14:05	pta
End of leach volumes and mass	D5744-12									
Interstitial Weight		1	85			g			07/14/15 0:00	arc
Leachate Volume Added		1	1000			mL			07/14/15 0:00	arc
Leachate Volume Recovered		1	918			g			07/14/15 0:00	arc
Oxidation Reduction Potential (Eh)	D1498-08	1	369		*	mv	1	1	07/13/15 14:30	pta
pH, Humidity Cell Test	M9045D/M9040C									
pH		1	6.2			units	0.1	0.1	07/13/15 0:00	pta
pH measured at		1	22.3			C	0.1	0.1	07/13/15 0:00	pta

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acidity as CaCO ₃	SM2310B - Titration	1		U	*	mg/L	10	20	07/24/15 12:58	enb
Alkalinity as CaCO ₃	SM2320B - Titration									
Bicarbonate as CaCO ₃		1	6.3	B	*	mg/L	2	20	07/15/15 0:00	abd
Carbonate as CaCO ₃		1		U	*	mg/L	2	20	07/15/15 0:00	abd
Hydroxide as CaCO ₃		1		U	*	mg/L	2	20	07/15/15 0:00	abd
Total Alkalinity		1	6.3	B	*	mg/L	2	20	07/15/15 0:00	abd
Sulfate	D516-02/-07 - Turbidimetric	20	220		*	mg/L	20	100	07/15/15 13:35	bsu

Arizona license number: **AZ0102**

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/1700-2500/KINETIC-WEEK 2

ACZ Sample ID: **L25050-04**

Date Sampled: 07/21/15 17:00

Date Received: 06/22/15

Sample Matrix: Leachate

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0002	0.001	07/22/15 11:42	mfm
Cadmium, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/22/15 11:42	mfm
Copper, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	07/22/15 21:10	jjc
Iron, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.05	07/22/15 21:10	jjc
Lead, dissolved	M200.8 ICP-MS	1	0.0006		*	mg/L	0.0001	0.0005	07/23/15 18:14	mfm
Zinc, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	07/22/15 21:10	jjc

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity--Humidity Cell Test			*****							NEED
End of leach volumes and mass	D5744-12									
Interstitial Weight		1	83			g			07/21/15 0:00	arc
Leachate Volume Added		1	1000			mL			07/21/15 0:00	arc
Leachate Volume Recovered		1	978			g			07/21/15 0:00	arc
Oxidation Reduction Potential (Eh)			*****							NEED
pH, Humidity Cell Test	M9045D/M9040C									
pH			*****							NEED
pH measured at			*****							NEED

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acidity as CaCO ₃	SM2310B - Titration	1		U	*	mg/L	10	20	07/24/15 13:12	enb
Alkalinity as CaCO ₃	SM2320B - Titration									
Bicarbonate as CaCO ₃		1	6.2	B	*	mg/L	2	20	07/22/15 0:00	abd
Carbonate as CaCO ₃		1		U	*	mg/L	2	20	07/22/15 0:00	abd
Hydroxide as CaCO ₃		1		U	*	mg/L	2	20	07/22/15 0:00	abd
Total Alkalinity		1	6.2	B	*	mg/L	2	20	07/22/15 0:00	abd
Sulfate	D516-02/-07 - Turbidimetric	5	198		*	mg/L	5	25	07/22/15 12:26	bsu

Arizona license number: **AZ0102**

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/1700-2500/KINETIC-WEEK 3

ACZ Sample ID: **L25050-05**

Date Sampled: 07/28/15 17:00

Date Received: 06/22/15

Sample Matrix: Leachate

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0002	0.001	07/29/15 21:06	mfm
Cadmium, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/29/15 21:06	mfm
Copper, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	07/29/15 12:15	aeb
Iron, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.05	07/29/15 12:15	aeb
Lead, dissolved	M200.8 ICP-MS	1	0.0006		*	mg/L	0.0001	0.0005	07/29/15 21:06	mfm
Zinc, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	07/29/15 12:15	aeb

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity--Humidity Cell Test			*****							NEED
End of leach volumes and mass	D5744-12									
Interstitial Weight		1	76			g			07/28/15 0:00	arc
Leachate Volume Added		1	1000			mL			07/28/15 0:00	arc
Leachate Volume Recovered		1	918			g			07/28/15 0:00	arc
Oxidation Reduction Potential (Eh)			*****							NEED
pH, Humidity Cell Test	M9045D/M9040C									
pH			*****							NEED
pH measured at			*****							NEED

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acidity as CaCO ₃	SM2310B - Titration	1		U	*	mg/L	10	20	08/05/15 12:43	apk
Alkalinity as CaCO ₃	SM2320B - Titration									
Bicarbonate as CaCO ₃		1	4.7	B	*	mg/L	2	20	07/29/15 0:00	abd
Carbonate as CaCO ₃		1		U	*	mg/L	2	20	07/29/15 0:00	abd
Hydroxide as CaCO ₃		1		U	*	mg/L	2	20	07/29/15 0:00	abd
Total Alkalinity		1	4.7	B	*	mg/L	2	20	07/29/15 0:00	abd
Sulfate	D516-02/-07 - Turbidimetric	5	160		*	mg/L	5	25	07/29/15 13:46	bsu

Arizona license number: **AZ0102**

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/1700-2500/KINETIC-WEEK 4

ACZ Sample ID: **L25050-06**

Date Sampled: 08/04/15 17:00

Date Received: 06/22/15

Sample Matrix: Leachate

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0002	0.001	08/05/15 15:33	mfm
Cadmium, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	08/05/15 15:33	mfm
Copper, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	08/05/15 15:43	jjc
Iron, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.05	08/05/15 15:43	jjc
Lead, dissolved	M200.8 ICP-MS	1	0.0006		*	mg/L	0.0001	0.0005	08/05/15 15:33	mfm
Zinc, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	08/05/15 15:43	jjc

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity--Humidity Cell Test	SM2510B	1	353		*	umhos/cm	1	10	08/03/15 13:43	arc
End of leach volumes and mass	D5744-12									
Interstitial Weight		1	75			g			08/04/15 0:00	arc
Leachate Volume Added		1	1000			mL			08/04/15 0:00	arc
Leachate Volume Recovered		1	922			g			08/04/15 0:00	arc
Oxidation Reduction Potential (Eh)	D1498-08	1	471		*	mv	1	1	08/03/15 14:36	arc
pH, Humidity Cell Test	M9045D/M9040C									
pH		1	6.1			units	0.1	0.1	08/03/15 0:00	arc
pH measured at		1	21.7			C	0.1	0.1	08/03/15 0:00	arc

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acidity as CaCO ₃	SM2310B - Titration	1		U	*	mg/L	10	20	08/05/15 13:00	apk
Alkalinity as CaCO ₃	SM2320B - Titration									
Bicarbonate as CaCO ₃		1	4.2	B	*	mg/L	2	20	08/05/15 0:00	abd
Carbonate as CaCO ₃		1		U	*	mg/L	2	20	08/05/15 0:00	abd
Hydroxide as CaCO ₃		1		U	*	mg/L	2	20	08/05/15 0:00	abd
Total Alkalinity		1	4.2	B	*	mg/L	2	20	08/05/15 0:00	abd
Sulfate	D516-02/-07 - Turbidimetric	5	150		*	mg/L	5	25	08/06/15 12:55	bsu

Arizona license number: **AZ0102**

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/1700-2500/KINETIC-WEEK 5

ACZ Sample ID: **L25050-07**

Date Sampled: 08/11/15 17:00

Date Received: 06/22/15

Sample Matrix: Leachate

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0002	0.001	08/12/15 18:29	mfm
Cadmium, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	08/12/15 18:29	mfm
Copper, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	08/12/15 20:06	aeb
Iron, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.05	08/13/15 14:59	aeb
Lead, dissolved	M200.8 ICP-MS	1	0.0005		*	mg/L	0.0001	0.0005	08/12/15 18:29	mfm
Zinc, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	08/12/15 20:06	aeb

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity--Humidity Cell Test	SM2510B	1	335		*	umhos/cm	1	10	08/10/15 13:43	arc
End of leach volumes and mass	D5744-12									
Interstitial Weight		1	72			g			08/11/15 0:00	arc
Leachate Volume Added		1	1000			mL			08/11/15 0:00	arc
Leachate Volume Recovered		1	922			g			08/11/15 0:00	arc
Oxidation Reduction Potential (Eh)	D1498-08	1	465		*	mv	1	1	08/10/15 14:36	arc
pH, Humidity Cell Test	M9045D/M9040C									
pH		1	6.4			units	0.1	0.1	08/10/15 0:00	arc
pH measured at		1	21.1			C	0.1	0.1	08/10/15 0:00	arc

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acidity as CaCO ₃	SM2310B - Titration	1		U	*	mg/L	10	20	08/19/15 12:23	tms
Alkalinity as CaCO ₃	SM2320B - Titration									
Bicarbonate as CaCO ₃		1	4.2	B	*	mg/L	2	20	08/14/15 0:00	abd
Carbonate as CaCO ₃		1		U	*	mg/L	2	20	08/14/15 0:00	abd
Hydroxide as CaCO ₃		1		U	*	mg/L	2	20	08/14/15 0:00	abd
Total Alkalinity		1	4.2	B	*	mg/L	2	20	08/14/15 0:00	abd
Sulfate	D516-02/-07 - Turbidimetric	5	148		*	mg/L	5	25	08/12/15 12:12	bsu

Arizona license number: **AZ0102**

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/1700-2500/KINETIC-WEEK 6

ACZ Sample ID: **L25050-08**

Date Sampled: 08/18/15 17:00

Date Received: 06/22/15

Sample Matrix: Leachate

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved			*****							NEED
Antimony, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0004	0.002	08/19/15 11:47	mfm
Arsenic, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0002	0.001	08/19/15 11:47	mfm
Barium, dissolved			*****							NEED
Beryllium, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.00005	0.0003	08/19/15 11:47	mfm
Bismuth, dissolved			*****							NEED
Boron, dissolved			*****							NEED
Cadmium, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	08/19/15 11:47	mfm
Calcium, dissolved			*****							NEED
Chromium, dissolved			*****							NEED
Cobalt, dissolved			*****							NEED
Copper, dissolved			*****							NEED
Gallium, dissolved			*****							NEED
Iron, dissolved			*****							NEED
Lead, dissolved	M200.8 ICP-MS	1	0.0011		*	mg/L	0.0001	0.0005	08/21/15 12:39	msh
Lithium, dissolved			*****							NEED
Magnesium, dissolved			*****							NEED
Manganese, dissolved			*****							NEED
Mercury, dissolved	WG389063		*****							WIP
Molybdenum, dissolved			*****							NEED
Nickel, dissolved			*****							NEED
Potassium, dissolved			*****							NEED
Scandium, dissolved			*****							NEED
Selenium, dissolved	M200.8 ICP-MS	1	0.0003		*	mg/L	0.0001	0.0003	08/19/15 11:47	mfm
Silver, dissolved			*****							NEED
Sodium, dissolved			*****							NEED
Strontium, dissolved			*****							NEED
Thallium, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	08/19/15 11:47	mfm
Tin, dissolved			*****							NEED
Titanium, dissolved			*****							NEED
Vanadium, dissolved			*****							NEED
Zinc, dissolved			*****							NEED

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/1700-2500/KINETIC-WEEK 6

ACZ Sample ID: **L25050-08**

Date Sampled: 08/18/15 17:00

Date Received: 06/22/15

Sample Matrix: Leachate

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity--Humidity Cell Test	SM2510B	1	352		*	umhos/cm	1	10	08/17/15 13:43	arc
End of leach volumes and mass	D5744-12									
Interstitial Weight		1	71			g			08/18/15 0:00	arc
Leachate Volume Added		1	1000			mL			08/18/15 0:00	arc
Leachate Volume Recovered		1	924			g			08/18/15 0:00	arc
Oxidation Reduction Potential (Eh)	D1498-08	1	463		*	mv	1	1	08/17/15 14:36	arc
pH, Humidity Cell Test	M9045D/M9040C									
pH		1	6.4			units	0.1	0.1	08/17/15 0:00	arc
pH measured at		1	21.2			C	0.1	0.1	08/17/15 0:00	arc

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acidity as CaCO ₃			*****							NEED
Alkalinity as CaCO ₃	SM2320B - Titration									
Bicarbonate as CaCO ₃		1	4.5	B	*	mg/L	2	20	08/19/15 0:00	abd
Carbonate as CaCO ₃		1		U	*	mg/L	2	20	08/19/15 0:00	abd
Hydroxide as CaCO ₃		1		U	*	mg/L	2	20	08/19/15 0:00	abd
Total Alkalinity		1	4.5	B	*	mg/L	2	20	08/19/15 0:00	abd
Sulfate	D516-02/-07 - Turbidimetric	5	151		*	mg/L	5	25	08/20/15 12:03	bsu

Arizona license number: **AZ0102**

Report Header Explanations

<i>Batch</i>	A distinct set of samples analyzed at a specific time
<i>Found</i>	Value of the QC Type of interest
<i>Limit</i>	Upper limit for RPD, in %.
<i>Lower</i>	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
<i>MDL</i>	Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #5). Allows for instrument and annual fluctuations.
<i>PCN/SCN</i>	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
<i>PQL</i>	Practical Quantitation Limit. Synonymous with the EPA term "minimum level".
<i>QC</i>	True Value of the Control Sample or the amount added to the Spike
<i>Rec</i>	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
<i>RPD</i>	Relative Percent Difference, calculation used for Duplicate QC Types
<i>Upper</i>	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
<i>Sample</i>	Value of the Sample of interest

QC Sample Types

<i>AS</i>	Analytical Spike (Post Digestion)	<i>LCSWD</i>	Laboratory Control Sample - Water Duplicate
<i>ASD</i>	Analytical Spike (Post Digestion) Duplicate	<i>LFB</i>	Laboratory Fortified Blank
<i>CCB</i>	Continuing Calibration Blank	<i>LFM</i>	Laboratory Fortified Matrix
<i>CCV</i>	Continuing Calibration Verification standard	<i>LFMD</i>	Laboratory Fortified Matrix Duplicate
<i>DUP</i>	Sample Duplicate	<i>LRB</i>	Laboratory Reagent Blank
<i>ICB</i>	Initial Calibration Blank	<i>MS</i>	Matrix Spike
<i>ICV</i>	Initial Calibration Verification standard	<i>MSD</i>	Matrix Spike Duplicate
<i>ICSAB</i>	Inter-element Correction Standard - A plus B solutions	<i>PBS</i>	Prep Blank - Soil
<i>LCSS</i>	Laboratory Control Sample - Soil	<i>PBW</i>	Prep Blank - Water
<i>LCSSD</i>	Laboratory Control Sample - Soil Duplicate	<i>PQV</i>	Practical Quantitation Verification standard
<i>LCSW</i>	Laboratory Control Sample - Water	<i>SDL</i>	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3)	EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste.
(5)	Standard Methods for the Examination of Water and Wastewater.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3)	Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5)	If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click:

<http://www.acz.com/public/extquallist.pdf>

Adrian Brown Consultants, Inc.

ACZ Project ID: L25050

Date Received: 06/22/2015 10:00

Received By: ear

Date Printed: 6/22/2015

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?	☐	☐	☒
2) Is the Chain of Custody or other directive shipping papers present?	☒	☐	☐
3) Does this project require special handling procedures such as CLP protocol?	☐	☐	☒
4) Are any samples NRC licensable material?	☐	☐	☒
5) If samples are received past hold time, proceed with requested short hold time analyses?	☒	☐	☐
6) Is the Chain of Custody complete and accurate?	☒	☐	☐
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?	☐	☒	☐

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	☒	☐	☐
9) Are all labels on containers and are they intact and legible?	☒	☐	☐
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	☒	☐	☐
11) For preserved bottle types, was the pH checked and within limits? ¹	☐	☐	☒
12) Is there sufficient sample volume to perform all requested work?	☒	☐	☐
13) Is the custody seal intact on all containers?	☐	☐	☒
14) Are samples that require zero headspace acceptable?	☐	☐	☒
15) Are all sample containers appropriate for analytical requirements?	☒	☐	☐
16) Is there an Hg-1631 trip blank present?	☐	☐	☒
17) Is there a VOA trip blank present?	☐	☐	☒
18) Were all samples received within hold time?	☒	☐	☐

Chain of Custody Related Remarks

The 'Relinquished By' field on the COC was not completed. Left a message for Jeffrey Winick on 6/22/15.

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
-----	-----	-----	-----
NA22006	18.5	23	N/A

Was ice present in the shipment container(s)?

No - Wet or gel ice was not present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

Adrian Brown Consultants, Inc.

ACZ Project ID: L25050

Date Received: 06/22/2015 10:00

Received By: ear

Date Printed: 6/22/2015

¹ The preservation of the following bottle types is not checked at sample receipt: Orange (oil and grease), Purple (total cyanide), Pink (dissolved cyanide), Brown (arsenic speciation), Sterile (fecal coliform), EDTA (sulfite), HCl preserved vial (organics), Na₂S₂O₃ preserved vial (organics), and HG-1631 (total/dissolved mercury by method 1631).

Preliminary

Report to:

Name: JEFFREY WINICK		Address: 1875 LAWRENCE STREET, SUITE 500
Company: SCHLUMBERGER WATER SERV.		DENVER, CO 80215
E-mail: JWINICK@SLB.COM		Telephone: +1.303.244.8224

Copy of Report to:

Name: ADRIAN BROWN	E-mail: abrown@abch2o.com
Company: ADRIAN BROWN CONSULTANTS	Telephone: (303) 698-9080

Invoice to:

Name: ADRIAN BROWN		Address: 130 W 4th Ave
Company: ADRIAN BROWN CONSULTANTS		Denver CO USA 80223
E-mail: lbrown@abch2o.com		Telephone: (303) 698-9080

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses?

YES
NO

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO"

is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified.

Are samples for CO DW Compliance Monitoring?

YES
NO

If yes, please include state forms. Results will be reported to PQL.

PROJECT INFORMATION

ANALYSES REQUESTED (*attach list or use quote number*) .

[illegible]

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify) _____

REMARKS

Please contact Jeff Winick at 303.244.8224 for further instructions

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:

DATE:TIME

RECEIVED BY:

DATE:TIME

August 17, 2015

Report to:

Jeffrey Winick
Schlumberger Water Services
1875 Lawrence Street
Suite 500
Denver, CO 80202

Bill to:

Accounts Payable
Adrian Brown Consultants, Inc.
130 W 4th Avenue
Denver, CO 80223

cc: Adrian Brown

Project ID:

ACZ Project ID: L25101

Jeffrey Winick:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on June 24, 2015. This project has been assigned to ACZ's project number, L25101. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L25101. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after September 16, 2015. If the samples are determined to be hazardous, additional charges apply for disposal (typically \$11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.



Scott Habermehl has reviewed
and approved this report.



Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC-15-1/100-300/STATIC C

ACZ Sample ID: **L25101-01**

Date Sampled: 06/15/15 00:00

Date Received: 06/24/15

Sample Matrix: Soil

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acid Generation Potential (calc on Sulfur total)	M600/2-78-054 3.2.4		55.6			t CaCO3/Kt	0.31	3.1	08/17/15 11:05	calc
Acid Neutralization Potential (calc)	M600/2-78-054 1.3		0.0			t CaCO3/Kt	1	5	08/17/15 11:05	calc
Acid-Base Potential (calc on Sulfur total)	M600/2-78-054 1.3		-55.6			t CaCO3/Kt			08/17/15 11:05	calc
Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	1		U	*	%	0.1	0.5	08/04/15 10:03	cra
Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	1		U	*	%	0.1	0.5	08/04/15 10:03	cra
Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	1		U	*	%	0.1	0.5	08/04/15 10:03	cra
Net Acid Generation Procedure	Single NAG - EGI 2002									
NAG		1	16		*	Kg H2SO4/t	1	1	07/29/15 0:00	brd
pH After Oxidation		1	2.9		*	units	0.1	0.1	07/29/15 0:00	brd
Neutralization Potential as CaCO3	M600/2-78-054 3.2.3	1		U	*	%	0.1	0.5	08/11/15 12:57	cra
Sulfur Forms	M600/2-78-054 3.2.4-MOD									
Sulfur HCl Residue		1	1.63		*	%	0.01	0.1	08/04/15 0:00	cra
Sulfur HNO3 Residue		1	0.74		*	%	0.01	0.1	08/04/15 0:00	cra
Sulfur Organic Residual		1	0.74		*	%	0.01	0.1	08/04/15 0:00	cra
Sulfur Pyritic Sulfide		1	0.89		*	%	0.01	0.1	08/04/15 0:00	cra
Sulfur Sulfate		1	0.15		*	%	0.01	0.1	08/04/15 0:00	cra
Sulfur Total		1	1.78		*	%	0.01	0.1	08/04/15 0:00	cra
Total Sulfur minus Sulfate		1	1.63		*	%	0.01	0.1	08/04/15 0:00	cra

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972				*				07/16/15 9:00	brd
Crush and Pulverize (Ring & Puck)	EPA-600/2-78-054 3.1.3				*				07/28/15 8:15	brd

Arizona license number: AZ0102

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC-15-1/300-500/STATIC C

ACZ Sample ID: **L25101-02**

Date Sampled: 06/15/15 00:00

Date Received: 06/24/15

Sample Matrix: Soil

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acid Generation Potential (calc on Sulfur total)	M600/2-78-054 3.2.4		29.1			t CaCO3/Kt	0.31	3.1	08/17/15 11:05	calc
Acid Neutralization Potential (calc)	M600/2-78-054 1.3		0.0			t CaCO3/Kt	1	5	08/17/15 11:05	calc
Acid-Base Potential (calc on Sulfur total)	M600/2-78-054 1.3		-29.1			t CaCO3/Kt			08/17/15 11:05	calc
Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	1		U	*	%	0.1	0.5	08/04/15 12:56	cra
Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	1		U	*	%	0.1	0.5	08/04/15 12:56	cra
Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	1		U	*	%	0.1	0.5	08/04/15 12:56	cra
Net Acid Generation Procedure	Single NAG - EGI 2002									
NAG		1	12		*	Kg H2SO4/t	1	1	07/29/15 0:00	brd
pH After Oxidation		1	2.9		*	units	0.1	0.1	07/29/15 0:00	brd
Neutralization Potential as CaCO3	M600/2-78-054 3.2.3	1		U	*	%	0.1	0.5	08/11/15 13:24	cra
Sulfur Forms	M600/2-78-054 3.2.4-MOD									
Sulfur HCl Residue		1	0.78		*	%	0.01	0.1	08/04/15 0:00	cra
Sulfur HNO3 Residue		1	0.28		*	%	0.01	0.1	08/04/15 0:00	cra
Sulfur Organic Residual		1	0.28		*	%	0.01	0.1	08/04/15 0:00	cra
Sulfur Pyritic Sulfide		1	0.50		*	%	0.01	0.1	08/04/15 0:00	cra
Sulfur Sulfate		1	0.15		*	%	0.01	0.1	08/04/15 0:00	cra
Sulfur Total		1	0.93		*	%	0.01	0.1	08/04/15 0:00	cra
Total Sulfur minus Sulfate		1	0.78		*	%	0.01	0.1	08/04/15 0:00	cra

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972				*				07/16/15 9:00	brd
Crush and Pulverize (Ring & Puck)	EPA-600/2-78-054 3.1.3				*				07/28/15 8:18	brd

Arizona license number: AZ0102

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC-15-1/500-700/STATIC C

ACZ Sample ID: **L25101-03**

Date Sampled: 06/15/15 00:00

Date Received: 06/24/15

Sample Matrix: Soil

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acid Generation Potential (calc on Sulfur total)	M600/2-78-054 3.2.4		23.4			t CaCO3/Kt	0.31	3.1	08/17/15 11:05	calc
Acid Neutralization Potential (calc)	M600/2-78-054 1.3		0.0			t CaCO3/Kt	1	5	08/17/15 11:05	calc
Acid-Base Potential (calc on Sulfur total)	M600/2-78-054 1.3		-23.4			t CaCO3/Kt			08/17/15 11:05	calc
Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	1		U	*	%	0.1	0.5	08/04/15 15:49	cra
Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	1		U	*	%	0.1	0.5	08/04/15 15:49	cra
Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	1		U	*	%	0.1	0.5	08/04/15 15:49	cra
Net Acid Generation Procedure	Single NAG - EGI 2002									
NAG		1	13		*	Kg H2SO4/t	1	1	07/29/15 0:00	brd
pH After Oxidation		1	3		*	units	0.1	0.1	07/29/15 0:00	brd
Neutralization Potential as CaCO3	M600/2-78-054 3.2.3	1		U	*	%	0.1	0.5	08/11/15 13:38	cra
Sulfur Forms	M600/2-78-054 3.2.4-MOD									
Sulfur HCl Residue		1	0.60		*	%	0.01	0.1	08/04/15 0:00	cra
Sulfur HNO3 Residue		1	0.16		*	%	0.01	0.1	08/04/15 0:00	cra
Sulfur Organic Residual		1	0.16		*	%	0.01	0.1	08/04/15 0:00	cra
Sulfur Pyritic Sulfide		1	0.44		*	%	0.01	0.1	08/04/15 0:00	cra
Sulfur Sulfate		1	0.15		*	%	0.01	0.1	08/04/15 0:00	cra
Sulfur Total		1	0.75		*	%	0.01	0.1	08/04/15 0:00	cra
Total Sulfur minus Sulfate		1	0.60		*	%	0.01	0.1	08/04/15 0:00	cra

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972				*				07/16/15 9:00	brd
Crush and Pulverize (Ring & Puck)	EPA-600/2-78-054 3.1.3				*				07/28/15 8:22	brd

Arizona license number: AZ0102

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC-15-1/700-900/STATIC C

ACZ Sample ID: **L25101-04**

Date Sampled: 06/15/15 00:00

Date Received: 06/24/15

Sample Matrix: Soil

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acid Generation Potential (calc on Sulfur total)	M600/2-78-054 3.2.4		70.0			t CaCO3/Kt	0.31	3.1	08/17/15 11:06	calc
Acid Neutralization Potential (calc)	M600/2-78-054 1.3		0.0			t CaCO3/Kt	1	5	08/17/15 11:06	calc
Acid-Base Potential (calc on Sulfur total)	M600/2-78-054 1.3		-70.0			t CaCO3/Kt			08/17/15 11:06	calc
Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	1		U	*	%	0.1	0.5	08/04/15 18:42	cra
Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	1		U	*	%	0.1	0.5	08/04/15 18:42	cra
Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	1		U	*	%	0.1	0.5	08/04/15 18:42	cra
Net Acid Generation Procedure	Single NAG - EGI 2002									
NAG		1	56		*	Kg H2SO4/t	1	1	07/29/15 0:00	brd
pH After Oxidation		1	2.6		*	units	0.1	0.1	07/29/15 0:00	brd
Neutralization Potential as CaCO3	M600/2-78-054 3.2.3	1		U	*	%	0.1	0.5	08/11/15 13:51	cra
Sulfur Forms	M600/2-78-054 3.2.4-MOD									
Sulfur HCl Residue		1	2.04		*	%	0.01	0.1	08/04/15 0:00	cra
Sulfur HNO3 Residue		1	0.12		*	%	0.01	0.1	08/04/15 0:00	cra
Sulfur Organic Residual		1	0.12		*	%	0.01	0.1	08/04/15 0:00	cra
Sulfur Pyritic Sulfide		1	1.92		*	%	0.01	0.1	08/04/15 0:00	cra
Sulfur Sulfate		1	0.20		*	%	0.01	0.1	08/04/15 0:00	cra
Sulfur Total		1	2.24		*	%	0.01	0.1	08/04/15 0:00	cra
Total Sulfur minus Sulfate		1	2.04		*	%	0.01	0.1	08/04/15 0:00	cra

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972				*				07/16/15 9:00	brd
Crush and Pulverize (Ring & Puck)	EPA-600/2-78-054 3.1.3				*				07/28/15 8:25	brd

Arizona license number: AZ0102

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC-15-1/900-1100/STATIC C

ACZ Sample ID: **L25101-05**

Date Sampled: 06/15/15 00:00

Date Received: 06/24/15

Sample Matrix: Soil

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acid Generation Potential (calc on Sulfur total)	M600/2-78-054 3.2.4		104			t CaCO3/Kt	0.31	3.1	08/17/15 11:06	calc
Acid Neutralization Potential (calc)	M600/2-78-054 1.3		6.0			t CaCO3/Kt	1	5	08/17/15 11:06	calc
Acid-Base Potential (calc on Sulfur total)	M600/2-78-054 1.3		-97.8			t CaCO3/Kt			08/17/15 11:06	calc
Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	1		U	*	%	0.1	0.5	08/04/15 21:35	cra
Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	1		U	*	%	0.1	0.5	08/04/15 21:35	cra
Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	1		U	*	%	0.1	0.5	08/04/15 21:35	cra
Net Acid Generation Procedure	Single NAG - EGI 2002									
NAG		1	87		*	Kg H2SO4/t	1	1	07/29/15 0:00	brd
pH After Oxidation		1	2.3		*	units	0.1	0.1	07/29/15 0:00	brd
Neutralization Potential as CaCO3	M600/2-78-054 3.2.3	1	0.6		*	%	0.1	0.5	08/11/15 14:05	cra
Sulfur Forms	M600/2-78-054 3.2.4-MOD									
Sulfur HCl Residue		1	3.09		*	%	0.01	0.1	08/05/15 0:00	cra
Sulfur HNO3 Residue		1	0.04	B	*	%	0.01	0.1	08/05/15 0:00	cra
Sulfur Organic Residual		1	0.04	B	*	%	0.01	0.1	08/05/15 0:00	cra
Sulfur Pyritic Sulfide		1	3.05		*	%	0.01	0.1	08/05/15 0:00	cra
Sulfur Sulfate		1	0.23		*	%	0.01	0.1	08/05/15 0:00	cra
Sulfur Total		1	3.32		*	%	0.01	0.1	08/05/15 0:00	cra
Total Sulfur minus Sulfate		1	3.09		*	%	0.01	0.1	08/05/15 0:00	cra

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972				*				07/16/15 9:00	brd
Crush and Pulverize (Ring & Puck)	EPA-600/2-78-054 3.1.3				*				07/28/15 8:28	brd

Arizona license number: AZ0102

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC-15-1/1100-1300/STATIC C

ACZ Sample ID: **L25101-06**

Date Sampled: 06/15/15 00:00

Date Received: 06/24/15

Sample Matrix: Soil

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acid Generation Potential (calc on Sulfur total)	M600/2-78-054 3.2.4		124			t CaCO3/Kt	0.31	3.1	08/17/15 11:06	calc
Acid Neutralization Potential (calc)	M600/2-78-054 1.3		11.0			t CaCO3/Kt	1	5	08/17/15 11:06	calc
Acid-Base Potential (calc on Sulfur total)	M600/2-78-054 1.3		-113			t CaCO3/Kt			08/17/15 11:06	calc
Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	1		U	*	%	0.1	0.5	08/05/15 0:28	cra
Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	1		U	*	%	0.1	0.5	08/05/15 0:28	cra
Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	1		U	*	%	0.1	0.5	08/05/15 0:28	cra
Net Acid Generation Procedure	Single NAG - EGI 2002									
NAG		1	78		*	Kg H2SO4/t	1	1	07/29/15 0:00	brd
pH After Oxidation		1	2.3		*	units	0.1	0.1	07/29/15 0:00	brd
Neutralization Potential as CaCO3	M600/2-78-054 3.2.3	1	1.1		*	%	0.1	0.5	08/11/15 14:19	cra
Sulfur Forms	M600/2-78-054 3.2.4-MOD									
Sulfur HCl Residue		1	3.56		*	%	0.01	0.1	08/05/15 0:00	cra
Sulfur HNO3 Residue		1	0.05	B	*	%	0.01	0.1	08/05/15 0:00	cra
Sulfur Organic Residual		1	0.05	B	*	%	0.01	0.1	08/05/15 0:00	cra
Sulfur Pyritic Sulfide		1	3.51		*	%	0.01	0.1	08/05/15 0:00	cra
Sulfur Sulfate		1	0.42		*	%	0.01	0.1	08/05/15 0:00	cra
Sulfur Total		1	3.98		*	%	0.01	0.1	08/05/15 0:00	cra
Total Sulfur minus Sulfate		1	3.56		*	%	0.01	0.1	08/05/15 0:00	cra

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972				*				07/16/15 9:00	brd
Crush and Pulverize (Ring & Puck)	EPA-600/2-78-054 3.1.3				*				07/28/15 8:31	brd

Arizona license number: AZ0102

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC-15-1/1300-1500/STATIC C

ACZ Sample ID: **L25101-07**

Date Sampled: 06/15/15 00:00

Date Received: 06/24/15

Sample Matrix: Soil

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acid Generation Potential (calc on Sulfur total)	M600/2-78-054 3.2.4		124			t CaCO3/Kt	0.31	3.1	08/17/15 11:06	calc
Acid Neutralization Potential (calc)	M600/2-78-054 1.3		12.0			t CaCO3/Kt	1	5	08/17/15 11:06	calc
Acid-Base Potential (calc on Sulfur total)	M600/2-78-054 1.3		-112			t CaCO3/Kt			08/17/15 11:06	calc
Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	1		U	*	%	0.1	0.5	08/05/15 3:21	cra
Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	1		U	*	%	0.1	0.5	08/05/15 3:21	cra
Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	1		U	*	%	0.1	0.5	08/05/15 3:21	cra
Net Acid Generation Procedure	Single NAG - EGI 2002									
NAG		1	79		*	Kg H2SO4/t	1	1	07/29/15 0:00	brd
pH After Oxidation		1	2.3		*	units	0.1	0.1	07/29/15 0:00	brd
Neutralization Potential as CaCO3	M600/2-78-054 3.2.3	1	1.2		*	%	0.1	0.5	08/11/15 14:32	cra
Sulfur Forms	M600/2-78-054 3.2.4-MOD									
Sulfur HCl Residue		1	3.39		*	%	0.01	0.1	08/05/15 0:00	cra
Sulfur HNO3 Residue		1	0.04	B	*	%	0.01	0.1	08/05/15 0:00	cra
Sulfur Organic Residual		1	0.04	B	*	%	0.01	0.1	08/05/15 0:00	cra
Sulfur Pyritic Sulfide		1	3.35		*	%	0.01	0.1	08/05/15 0:00	cra
Sulfur Sulfate		1	0.57		*	%	0.01	0.1	08/05/15 0:00	cra
Sulfur Total		1	3.96		*	%	0.01	0.1	08/05/15 0:00	cra
Total Sulfur minus Sulfate		1	3.39		*	%	0.01	0.1	08/05/15 0:00	cra

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972				*				07/16/15 9:00	brd
Crush and Pulverize (Ring & Puck)	EPA-600/2-78-054 3.1.3				*				07/28/15 8:34	brd

Arizona license number: AZ0102

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC-15-1/1500-1700/STATIC C

ACZ Sample ID: **L25101-08**

Date Sampled: 06/15/15 00:00

Date Received: 06/24/15

Sample Matrix: Soil

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acid Generation Potential (calc on Sulfur total)	M600/2-78-054 3.2.4		139			t CaCO3/Kt	0.31	3.1	08/17/15 11:06	calc
Acid Neutralization Potential (calc)	M600/2-78-054 1.3		33.0			t CaCO3/Kt	1	5	08/17/15 11:06	calc
Acid-Base Potential (calc on Sulfur total)	M600/2-78-054 1.3		-106			t CaCO3/Kt			08/17/15 11:06	calc
Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	1	0.3	B	*	%	0.1	0.5	08/05/15 6:14	cra
Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	1	0.3	B	*	%	0.1	0.5	08/05/15 6:14	cra
Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	1		U	*	%	0.1	0.5	08/05/15 6:14	cra
Net Acid Generation Procedure	Single NAG - EGI 2002									
NAG		1	79		*	Kg H2SO4/t	1	1	07/29/15 0:00	brd
pH After Oxidation		1	2.3		*	units	0.1	0.1	07/29/15 0:00	brd
Neutralization Potential as CaCO3	M600/2-78-054 3.2.3	1	3.3		*	%	0.1	0.5	08/11/15 14:46	cra
Sulfur Forms	M600/2-78-054 3.2.4-MOD									
Sulfur HCl Residue		1	3.87		*	%	0.01	0.1	08/05/15 0:00	cra
Sulfur HNO3 Residue		1	0.03	B	*	%	0.01	0.1	08/05/15 0:00	cra
Sulfur Organic Residual		1	0.03	B	*	%	0.01	0.1	08/05/15 0:00	cra
Sulfur Pyritic Sulfide		1	3.84		*	%	0.01	0.1	08/05/15 0:00	cra
Sulfur Sulfate		1	0.58		*	%	0.01	0.1	08/05/15 0:00	cra
Sulfur Total		1	4.45		*	%	0.01	0.1	08/05/15 0:00	cra
Total Sulfur minus Sulfate		1	3.87		*	%	0.01	0.1	08/05/15 0:00	cra

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972				*				07/16/15 9:00	brd
Crush and Pulverize (Ring & Puck)	EPA-600/2-78-054 3.1.3				*				07/28/15 8:37	brd

Arizona license number: AZ0102



Report Header Explanations

<i>Batch</i>	A distinct set of samples analyzed at a specific time
<i>Found</i>	Value of the QC Type of interest
<i>Limit</i>	Upper limit for RPD, in %.
<i>Lower</i>	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
<i>MDL</i>	Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #5). Allows for instrument and annual fluctuations.
<i>PCN/SCN</i>	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
<i>PQL</i>	Practical Quantitation Limit. Synonymous with the EPA term "minimum level".
<i>QC</i>	True Value of the Control Sample or the amount added to the Spike
<i>Rec</i>	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
<i>RPD</i>	Relative Percent Difference, calculation used for Duplicate QC Types
<i>Upper</i>	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
<i>Sample</i>	Value of the Sample of interest

QC Sample Types

<i>AS</i>	Analytical Spike (Post Digestion)	<i>LCSWD</i>	Laboratory Control Sample - Water Duplicate
<i>ASD</i>	Analytical Spike (Post Digestion) Duplicate	<i>LFB</i>	Laboratory Fortified Blank
<i>CCB</i>	Continuing Calibration Blank	<i>LFM</i>	Laboratory Fortified Matrix
<i>CCV</i>	Continuing Calibration Verification standard	<i>LFMD</i>	Laboratory Fortified Matrix Duplicate
<i>DUP</i>	Sample Duplicate	<i>LRB</i>	Laboratory Reagent Blank
<i>ICB</i>	Initial Calibration Blank	<i>MS</i>	Matrix Spike
<i>ICV</i>	Initial Calibration Verification standard	<i>MSD</i>	Matrix Spike Duplicate
<i>ICSAB</i>	Inter-element Correction Standard - A plus B solutions	<i>PBS</i>	Prep Blank - Soil
<i>LCSS</i>	Laboratory Control Sample - Soil	<i>PBW</i>	Prep Blank - Water
<i>LCSSD</i>	Laboratory Control Sample - Soil Duplicate	<i>PQV</i>	Practical Quantitation Verification standard
<i>LCSW</i>	Laboratory Control Sample - Water	<i>SDL</i>	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3)	EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste.
(5)	Standard Methods for the Examination of Water and Wastewater.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3)	Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5)	If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click:

<http://www.acz.com/public/extquallist.pdf>

Adrian Brown Consultants, Inc.

ACZ Project ID: **L25101**

Carbon, total (TC) ASA No.9 29-2.2.4 Combustion/IR

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG387844													
WG387844PBS	PBS	08/03/15 11:00				U	%		-0.3	0.3			
WG387844LCSS	LCSS	08/03/15 13:52	PCN44492	4.19		4.2	%		80	120			
L25049-01DUP	DUP	08/03/15 19:38			.7	.7	%				0	20	RA

Carbon, total inorganic (TIC) ASA No. 9 29-2.2.4 (calc TC - TOC)

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG387844													
WG387844PBS	PBS	08/03/15 11:00				U	%		-0.3	0.3			
L25049-01DUP	DUP	08/03/15 19:38			.7	.7	%				0	20	RA

Carbon, total organic (TOC) ASA No.9 29-2.2.4 Combustion/IR

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG387844													
WG387844PBS	PBS	08/03/15 11:00				U	%		-0.3	0.3			
L25049-01DUP	DUP	08/03/15 19:38			U	U	%				0	20	RA

Net Acid Generation Single NAG - EGI 2002

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG387539													
L25049-01DUP	DUP	07/28/15 11:48			47	46.6	g H ₂ SO ₄ /				1	20	

Neutralization Potential as CaCO₃ M600/2-78-054 3.2.3

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG388076													
WG388076PBS	PBS	08/11/15 10:54				U	%		-0.2	0.2			
WG388076LCSS	LCSS	08/11/15 11:08	PCN47543	4.96		5.05	%	102	80	120			
L25049-01MS	MS	08/11/15 11:35	SI141024-1	1	5.9	6.98	%	108	70	130			
L25049-01DUP	DUP	08/11/15 11:49			5.9	5.83	%				1	20	

Sulfur Organic Residual M600/2-78-054 3.2.4-MOD

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG387842													
L25049-01DUP	DUP	08/03/15 22:53			.03	.02	%				40	20	RA

Sulfur Pyritic Sulfide M600/2-78-054 3.2.4-MOD

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG387842													
L25049-01DUP	DUP	08/03/15 22:53			3.08	3.02	%				2	20	

Sulfur Sulfate M600/2-78-054 3.2.4-MOD

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG387842													
L25049-01DUP	DUP	08/03/15 22:53			.83	.99	%				18	20	

Adrian Brown Consultants, Inc.

ACZ Project ID: **L25101**

Sulfur Total

M600/2-78-054 3.2.4-MOD

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG387842													
WG387842PBS	PBS	08/03/15 11:00				U	%		-0.03	0.03			
WG387842LCSS	LCSS	08/03/15 13:58	PCN44492	4.07		3.98	%	98	80	120			
L25049-01MS	MS	08/03/15 19:55	PCN47988	1.1	3.94	5.03	%	99	80	120			
L25049-01DUP	DUP	08/03/15 22:53			3.94	4.03	%				2	20	

Total Sulfur Minus Sulfate

M600/2-78-054 3.2.4-MOD

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG387842													
L25049-01DUP	DUP	08/03/15 22:53			3.11	3.04	%				2	20	

Adrian Brown Consultants, Inc.

ACZ Project ID: **L25101**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L25101-01	WG387844	Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	Q6	Sample was received above recommended temperature.
			ASA No. 9 29-2.2.4 (calc TC - TOC)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
			ASA No. 9 29-2.2.4 (calc TC - TOC)	ZQ	Analyte was not evaluated in the laboratory control standard. Either the analyte is not included in the scope of the analytical method or a commercial standard containing the analyte is not available.
		Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
			ASA No.9 29-2.2.4 Combustion/IR	ZQ	Analyte was not evaluated in the laboratory control standard. Either the analyte is not included in the scope of the analytical method or a commercial standard containing the analyte is not available.
	WG387842	Sulfur Organic Residual	M600/2-78-054 3.2.4-MOD	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	L25101-02	WG387844	Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	Q6
ASA No.9 29-2.2.4 Combustion/IR				RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
Carbon, total inorganic (TIC)			ASA No. 9 29-2.2.4 (calc TC - TOC)	Q6	Sample was received above recommended temperature.
			ASA No. 9 29-2.2.4 (calc TC - TOC)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
			ASA No. 9 29-2.2.4 (calc TC - TOC)	ZQ	Analyte was not evaluated in the laboratory control standard. Either the analyte is not included in the scope of the analytical method or a commercial standard containing the analyte is not available.
Carbon, total organic (TOC)			ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
			ASA No.9 29-2.2.4 Combustion/IR	ZQ	Analyte was not evaluated in the laboratory control standard. Either the analyte is not included in the scope of the analytical method or a commercial standard containing the analyte is not available.
WG387842		Sulfur Organic Residual	M600/2-78-054 3.2.4-MOD	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

Adrian Brown Consultants, Inc.

ACZ Project ID: **L25101**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L25101-03	WG387844	Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	Q6	Sample was received above recommended temperature.
			ASA No. 9 29-2.2.4 (calc TC - TOC)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
			ASA No. 9 29-2.2.4 (calc TC - TOC)	ZQ	Analyte was not evaluated in the laboratory control standard. Either the analyte is not included in the scope of the analytical method or a commercial standard containing the analyte is not available.
		Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
			ASA No.9 29-2.2.4 Combustion/IR	ZQ	Analyte was not evaluated in the laboratory control standard. Either the analyte is not included in the scope of the analytical method or a commercial standard containing the analyte is not available.
	WG387842	Sulfur Organic Residual	M600/2-78-054 3.2.4-MOD	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L25101-04	WG387844	Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	Q6	Sample was received above recommended temperature.
			ASA No. 9 29-2.2.4 (calc TC - TOC)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
			ASA No. 9 29-2.2.4 (calc TC - TOC)	ZQ	Analyte was not evaluated in the laboratory control standard. Either the analyte is not included in the scope of the analytical method or a commercial standard containing the analyte is not available.
		Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
			ASA No.9 29-2.2.4 Combustion/IR	ZQ	Analyte was not evaluated in the laboratory control standard. Either the analyte is not included in the scope of the analytical method or a commercial standard containing the analyte is not available.
	WG387842	Sulfur Organic Residual	M600/2-78-054 3.2.4-MOD	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

Adrian Brown Consultants, Inc.

ACZ Project ID: **L25101**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L25101-05	WG387844	Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	Q6	Sample was received above recommended temperature.
			ASA No. 9 29-2.2.4 (calc TC - TOC)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
			ASA No. 9 29-2.2.4 (calc TC - TOC)	ZQ	Analyte was not evaluated in the laboratory control standard. Either the analyte is not included in the scope of the analytical method or a commercial standard containing the analyte is not available.
		Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
			ASA No.9 29-2.2.4 Combustion/IR	ZQ	Analyte was not evaluated in the laboratory control standard. Either the analyte is not included in the scope of the analytical method or a commercial standard containing the analyte is not available.
		Sulfur Organic Residual	M600/2-78-054 3.2.4-MOD	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L25101-06	WG387844	Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	Q6	Sample was received above recommended temperature.
			ASA No. 9 29-2.2.4 (calc TC - TOC)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
			ASA No. 9 29-2.2.4 (calc TC - TOC)	ZQ	Analyte was not evaluated in the laboratory control standard. Either the analyte is not included in the scope of the analytical method or a commercial standard containing the analyte is not available.
		Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
			ASA No.9 29-2.2.4 Combustion/IR	ZQ	Analyte was not evaluated in the laboratory control standard. Either the analyte is not included in the scope of the analytical method or a commercial standard containing the analyte is not available.
		Sulfur Organic Residual	M600/2-78-054 3.2.4-MOD	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

Adrian Brown Consultants, Inc.

ACZ Project ID: **L25101**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L25101-07	WG387844	Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	Q6	Sample was received above recommended temperature.
			ASA No. 9 29-2.2.4 (calc TC - TOC)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
			ASA No. 9 29-2.2.4 (calc TC - TOC)	ZQ	Analyte was not evaluated in the laboratory control standard. Either the analyte is not included in the scope of the analytical method or a commercial standard containing the analyte is not available.
		Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
			ASA No.9 29-2.2.4 Combustion/IR	ZQ	Analyte was not evaluated in the laboratory control standard. Either the analyte is not included in the scope of the analytical method or a commercial standard containing the analyte is not available.
	WG387842	Sulfur Organic Residual	M600/2-78-054 3.2.4-MOD	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	L25101-08	WG387844	Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	Q6
ASA No.9 29-2.2.4 Combustion/IR				RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
Carbon, total inorganic (TIC)			ASA No. 9 29-2.2.4 (calc TC - TOC)	Q6	Sample was received above recommended temperature.
			ASA No. 9 29-2.2.4 (calc TC - TOC)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
			ASA No. 9 29-2.2.4 (calc TC - TOC)	ZQ	Analyte was not evaluated in the laboratory control standard. Either the analyte is not included in the scope of the analytical method or a commercial standard containing the analyte is not available.
Carbon, total organic (TOC)			ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
			ASA No.9 29-2.2.4 Combustion/IR	ZQ	Analyte was not evaluated in the laboratory control standard. Either the analyte is not included in the scope of the analytical method or a commercial standard containing the analyte is not available.
WG387842		Sulfur Organic Residual	M600/2-78-054 3.2.4-MOD	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

Adrian Brown Consultants, Inc.ACZ Project ID: **L25101**

Soil Analysis

The following parameters are not offered for certification or are not covered by AZ certificate #AZ0102.

Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR
Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)
Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR
NAG	Single NAG - EGI 2002
Neutralization Potential as CaCO ₃	M600/2-78-054 3.2.3
pH After Oxidation	Single NAG - EGI 2002
Sulfur HCl Residue	M600/2-78-054 3.2.4-MOD
Sulfur HNO ₃ Residue	M600/2-78-054 3.2.4-MOD
Sulfur Organic Residual	M600/2-78-054 3.2.4-MOD
Sulfur Pyritic Sulfide	M600/2-78-054 3.2.4-MOD
Sulfur Sulfate	M600/2-78-054 3.2.4-MOD
Sulfur Total	M600/2-78-054 3.2.4-MOD
Total Sulfur minus Sulfate	M600/2-78-054 3.2.4-MOD

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR
Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)
Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR
NAG	Single NAG - EGI 2002
Neutralization Potential as CaCO ₃	M600/2-78-054 3.2.3
pH After Oxidation	Single NAG - EGI 2002
Sulfur HCl Residue	M600/2-78-054 3.2.4-MOD
Sulfur HNO ₃ Residue	M600/2-78-054 3.2.4-MOD
Sulfur Organic Residual	M600/2-78-054 3.2.4-MOD
Sulfur Pyritic Sulfide	M600/2-78-054 3.2.4-MOD
Sulfur Sulfate	M600/2-78-054 3.2.4-MOD
Sulfur Total	M600/2-78-054 3.2.4-MOD
Total Sulfur minus Sulfate	M600/2-78-054 3.2.4-MOD

Adrian Brown Consultants, Inc.

ACZ Project ID: L25101

Date Received: 06/24/2015 09:48

Received By: ear

Date Printed: 6/24/2015

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?	☐	☐	☒
2) Is the Chain of Custody or other directive shipping papers present?	☒	☐	☐
3) Does this project require special handling procedures such as CLP protocol?	☐	☐	☒
4) Are any samples NRC licensable material?	☐	☐	☒
5) If samples are received past hold time, proceed with requested short hold time analyses?	☒	☐	☐
6) Is the Chain of Custody complete and accurate?	☒	☐	☐
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?	☐	☒	☐

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	☒	☐	☐
9) Are all labels on containers and are they intact and legible?	☒	☐	☐
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	☒	☐	☐
11) For preserved bottle types, was the pH checked and within limits? ¹	☐	☐	☒
12) Is there sufficient sample volume to perform all requested work?	☒	☐	☐
13) Is the custody seal intact on all containers?	☐	☐	☒
14) Are samples that require zero headspace acceptable?	☐	☐	☒
15) Are all sample containers appropriate for analytical requirements?	☒	☐	☐
16) Is there an Hg-1631 trip blank present?	☐	☐	☒
17) Is there a VOA trip blank present?	☐	☐	☒
18) Were all samples received within hold time?	☒	☐	☐

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
NA22020	20.4	18	N/A

Was ice present in the shipment container(s)?

No - Wet or gel ice was not present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

Adrian Brown Consultants, Inc.

ACZ Project ID: L25101

Date Received: 06/24/2015 09:48

Received By: ear

Date Printed: 6/24/2015

¹ The preservation of the following bottle types is not checked at sample receipt: Orange (oil and grease), Purple (total cyanide), Pink (dissolved cyanide), Brown (arsenic speciation), Sterile (fecal coliform), EDTA (sulfite), HCl preserved vial (organics), Na₂S₂O₃ preserved vial (organics), and HG-1631 (total/dissolved mercury by method 1631).



Laboratories, Inc.

C25101

CHAIN of CUSTODY

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Report to:

Name: JEFFREY WINICK
Company: SCHLUMBERGER WATER SERV.
E-mail: JWINICK@SLB.COM

Address: 1875 LAWRENCE STREET, SUITE 500
DENVER, CO 80215
Telephone: +1.303.244.8224

Copy of Report to:

Name: ADRIAN BROWN
Company: ADRIAN BROWN CONSULTANTS

E-mail: abrown@abch2o.com
Telephone: (303) 698-9080

Invoice to:

Name: ADRIAN BROWN
Company: ADRIAN BROWN CONSULTANTS
E-mail: lbrown@abch2o.com

Address: 130 W 4th Ave
Denver CO USA 80223
Telephone: (303) 698-9080

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses?

YES ☐
NO ☐

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified.

Are samples for CO DW Compliance Monitoring?

YES ☐
NO ☒

If yes, please include state forms. Results will be reported to PQL.

PROJECT INFORMATION

ANALYSES REQUESTED (attach list or use quote number)

Quote #: CO HYDROGEOCHEMICAL STUDY

Project/PO #:

Reporting state for compliance testing:

Sampler's Name: ALS Minerals/Jose Gonzalez

Are any samples NRC licensable material? Yes No

SAMPLE IDENTIFICATION	DATE: TIME	Matrix	# of Containers	LO - HYDROGEOCHEM	LO - HYDROGEOCHEM - PRE-1400															
1. GHC-15-1/100-300/Static C	15-June-15	rock	1(kg)	X																
2. GHC-15-1/300-500/Static C	15-June-15	rock	1(kg)	X																
3. GHC-15-1/500-700/Static C	15-June-15	rock	1(kg)	X																
4. GHC-15-1/700-900/Static C	15-June-15	rock	1(kg)	X																
5. GHC15-1/100-900/Kinetic C	15-June-15	rock	8(kg)		X															
6. GHC15-1/900-1100/Static C	15-June-15	rock	1(kg)	X																
7. GHC15-1/1100-1300/Static C	15-June-15	rock	1(kg)	X																
8. GHC15-1/1300-1500/Static C	15-June-15	rock	1(kg)	X																
GHC15-1/1500-1700/Static C	15-June-15	rock	1(kg)	X																
GHC15-1/900-1700/Kinetic C	15-June-15	rock	8(kg)		X															

Matrix SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

Please contact Jeff Winick at 303.244.8224 for further instructions

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:

DATE: TIME

RECEIVED BY:

DATE: TIME

Mike [Signature] 6-23-15 *APL* 6-24-15 0940

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/100-900/KINETIC C

ACZ Sample ID: **L25102-01**

Date Sampled: 06/15/15 00:00

Date Received: 06/24/15

Sample Matrix: Soil

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acid Generation Potential (calc on Sulfur total)	M600/2-78-054 3.2.4		36.3			t CaCO3/Kt	0.31	3.1	10/13/15 0:00	calc
Acid Neutralization Potential (calc)	M600/2-78-054 1.3		3.0			t CaCO3/Kt	1	5	10/13/15 0:00	calc
Acid-Base Potential (calc on Sulfur total)	M600/2-78-054 1.3		-33.3			t CaCO3/Kt			10/13/15 0:00	calc
Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	1		U	*	%	0.1	0.5	08/05/15 9:06	cra
Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	1		U	*	%	0.1	0.5	08/05/15 9:06	cra
Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	1		U	*	%	0.1	0.5	08/05/15 9:06	cra
Net Acid Generation Procedure	Single NAG - EGI 2002									
NAG		1	22		*	Kg H2SO4/t	1	1	07/30/15 0:00	brd
pH After Oxidation		1	2.7		*	units	0.1	0.1	07/30/15 0:00	brd
Neutralization Potential as CaCO3	M600/2-78-054 3.2.3	1	0.3	B	*	%	0.1	0.5	08/10/15 11:07	cra
Sieve- 63 um (230 mesh)	ASA No.9, 15-4.2.2	1	2.2		*	% Passing	0.1	0.5	08/19/15 8:00	brd
Sieve- 125 um (120 mesh)	ASA No.9, 15-4.2.2	1	5.8		*	% Passing	0.1	0.5	08/19/15 8:00	brd
Sieve- 250 um (60 mesh)	ASA No.9, 15-4.2.2	1	10.6		*	% Passing	0.1	0.5	08/19/15 8:00	brd
Sieve- 500 um (35 mesh)	ASA No.9, 15-4.2.2	1	17.7		*	% Passing	0.1	0.5	08/19/15 8:00	brd
Sieve- 850 um (20 mesh)	ASA No.9, 15-4.2.2	1	24.1		*	% Passing	0.1	0.5	08/19/15 8:00	brd
Sieve- 2000 um (2.0 mm)	ASA No.9, 15-4.2.2	1	35.5		*	% Passing	0.1	0.5	08/19/15 8:00	brd
Sieve- 4000 um (4.0mm)	ASA No.9, 15-4.2.2	1	47.4		*	% Passing	0.1	0.5	08/19/15 8:00	brd
Sulfur Forms	M600/2-78-054 3.2.4-MOD									
Sulfur HCl Residue		1	1.02		*	%	0.01	0.1	08/05/15 0:00	cra
Sulfur HNO3 Residue		1	0.26		*	%	0.01	0.1	08/05/15 0:00	cra
Sulfur Organic Residual		1	0.26		*	%	0.01	0.1	08/05/15 0:00	cra
Sulfur Pyritic Sulfide		1	0.76		*	%	0.01	0.1	08/05/15 0:00	cra
Sulfur Sulfate		1	0.14		*	%	0.01	0.1	08/05/15 0:00	cra
Sulfur Total		1	1.16		*	%	0.01	0.1	08/05/15 0:00	cra
Total Sulfur minus Sulfate		1	1.02		*	%	0.01	0.1	08/05/15 0:00	cra

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/100-900/KINETIC C

ACZ Sample ID: **L25102-01**

Date Sampled: 06/15/15 00:00

Date Received: 06/24/15

Sample Matrix: Soil

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972				*				07/16/15 9:00	brd
Crush and Pulverize (Ring & Puck)	EPA-600/2-78-054 3.1.3				*				07/28/15 8:40	brd
Humidity Cell Test	D5744-12									
Grain Size			*****							WIP
Sample Weight			*****							WIP

Arizona license number: AZ0102

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/100-900/KINETIC C-WEEK 0

ACZ Sample ID: **L25102-02**

Date Sampled: 07/07/15 17:00

Date Received: 06/24/15

Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1	0.67		*	mg/L	0.03	0.2	07/09/15 20:15	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0004	0.002	07/08/15 17:52	mfm
Arsenic, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0002	0.001	07/08/15 17:52	mfm
Barium, dissolved	M200.7 ICP	1	0.088		*	mg/L	0.003	0.02	07/10/15 12:09	aeb
Beryllium, dissolved	M200.8 ICP-MS	1	0.00026	B	*	mg/L	0.00005	0.0003	07/08/15 17:52	mfm
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/09/15 20:15	jjc
Boron, dissolved	M200.7 ICP	1	0.03	B	*	mg/L	0.01	0.05	07/10/15 12:09	aeb
Cadmium, dissolved	M200.8 ICP-MS	1	0.0107		*	mg/L	0.0001	0.0005	07/08/15 17:52	mfm
Calcium, dissolved	M200.7 ICP	1	3.6		*	mg/L	0.1	0.5	07/09/15 20:15	jjc
Chromium, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	07/09/15 20:15	jjc
Cobalt, dissolved	M200.7 ICP	1	0.10		*	mg/L	0.01	0.05	07/09/15 20:15	jjc
Copper, dissolved	M200.7 ICP	1	0.58		*	mg/L	0.01	0.05	07/09/15 20:15	jjc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/09/15 20:15	jjc
Iron, dissolved	M200.7 ICP	1	0.05		*	mg/L	0.02	0.05	07/09/15 20:15	jjc
Lead, dissolved	M200.8 ICP-MS	1	0.0026		*	mg/L	0.0001	0.0005	07/08/15 17:52	mfm
Lithium, dissolved	M200.7 ICP	1	0.016	B	*	mg/L	0.008	0.04	07/09/15 20:15	jjc
Magnesium, dissolved	M200.7 ICP	1	0.8	B	*	mg/L	0.2	1	07/09/15 20:15	jjc
Manganese, dissolved	M200.7 ICP	1	0.382		*	mg/L	0.005	0.03	07/09/15 20:15	jjc
Mercury, dissolved	M245.1 CVAA	1		U	*	mg/L	0.0002	0.001	07/15/15 9:10	nco
Molybdenum, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.1	07/09/15 20:15	jjc
Nickel, dissolved	M200.7 ICP	1	0.019	B	*	mg/L	0.008	0.04	07/09/15 20:15	jjc
Potassium, dissolved	M200.7 ICP	1	8.4		*	mg/L	0.2	1	07/09/15 20:15	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/09/15 20:15	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0013		*	mg/L	0.0001	0.0003	07/08/15 17:52	mfm
Silver, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.03	07/10/15 12:09	aeb
Sodium, dissolved	M200.7 ICP	1	4		*	mg/L	0.2	1	07/09/15 20:15	jjc
Strontium, dissolved	M200.7 ICP	1	0.262		*	mg/L	0.005	0.03	07/09/15 20:15	jjc
Thallium, dissolved	M200.8 ICP-MS	1	0.0003	B	*	mg/L	0.0001	0.0005	07/08/15 17:52	mfm
Tin, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/09/15 20:15	jjc
Titanium, dissolved	M200.7 ICP	1		U	*	mg/L	0.005	0.03	07/09/15 20:15	jjc
Vanadium, dissolved	M200.7 ICP	1		U	*	mg/L	0.005	0.03	07/09/15 20:15	jjc
Zinc, dissolved	M200.7 ICP	1	0.41		*	mg/L	0.01	0.05	07/09/15 20:15	jjc

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/100-900/KINETIC C-WEEK 0

ACZ Sample ID: **L25102-02**

Date Sampled: 07/07/15 17:00

Date Received: 06/24/15

Sample Matrix: Leachate

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity--Humidity Cell Test	SM2510B	1	118		*	umhos/cm	1	10	07/06/15 15:24	cra
End of leach volumes and mass	D5744-12									
Interstitial Weight		1	168			g			07/06/15 0:00	pta
Leachate Volume Added		1	1000			mL			07/06/15 0:00	pta
Leachate Volume Recovered		1	904			g			07/06/15 0:00	pta
Oxidation Reduction Potential (Eh)	D1498-08	1	422		*	mv	1	1	07/06/15 12:44	cra
pH, Humidity Cell Test	M9045D/M9040C									
pH		1	4.5			units	0.1	0.1	07/06/15 0:00	cra
pH measured at		1	22.4			C	0.1	0.1	07/06/15 0:00	cra

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acidity as CaCO3	SM2310B - Titration	1	12	B	*	mg/L	10	20	07/15/15 12:17	enb
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1		U	*	mg/L	2	20	07/08/15 0:00	enb
Carbonate as CaCO3		1		U	*	mg/L	2	20	07/08/15 0:00	enb
Hydroxide as CaCO3		1		U	*	mg/L	2	20	07/08/15 0:00	enb
Total Alkalinity		1		U	*	mg/L	2	20	07/08/15 0:00	enb
Sulfate	D516-02/-07 - Turbidimetric	1	32.0		*	mg/L	1	5	07/08/15 14:24	mss2

Arizona license number: **AZ0102**

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/100-900/KINETIC C-WEEK 1

ACZ Sample ID: **L25102-03**

Date Sampled: 07/14/15 17:00

Date Received: 06/24/15

Sample Matrix: Leachate

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1	0.64		*	mg/L	0.03	0.2	07/15/15 15:49	aeb
Antimony, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0004	0.002	07/17/15 15:13	mfm
Arsenic, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0002	0.001	07/17/15 15:13	mfm
Barium, dissolved	M200.7 ICP	1	0.061		*	mg/L	0.003	0.02	07/15/15 15:49	aeb
Beryllium, dissolved	M200.8 ICP-MS	1	0.00012	B	*	mg/L	0.00005	0.0003	07/20/15 21:44	msh
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/15/15 15:49	aeb
Boron, dissolved	M200.7 ICP	1	0.02	B	*	mg/L	0.01	0.05	07/15/15 15:49	aeb
Cadmium, dissolved	M200.8 ICP-MS	1	0.0142		*	mg/L	0.0001	0.0005	07/17/15 15:13	mfm
Calcium, dissolved	M200.7 ICP	1	2.9		*	mg/L	0.1	0.5	07/15/15 15:49	aeb
Chromium, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	07/15/15 15:49	aeb
Cobalt, dissolved	M200.7 ICP	1	0.11		*	mg/L	0.01	0.05	07/16/15 17:05	aeb
Copper, dissolved	M200.7 ICP	1	0.62		*	mg/L	0.01	0.05	07/15/15 15:49	aeb
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/15/15 15:49	aeb
Iron, dissolved	M200.7 ICP	1	0.05		*	mg/L	0.02	0.05	07/15/15 15:49	aeb
Lead, dissolved	M200.8 ICP-MS	1	0.0106		*	mg/L	0.0001	0.0005	07/17/15 15:13	mfm
Lithium, dissolved	M200.7 ICP	1	0.011	B	*	mg/L	0.008	0.04	07/15/15 15:49	aeb
Magnesium, dissolved	M200.7 ICP	1	0.7	B	*	mg/L	0.2	1	07/15/15 15:49	aeb
Manganese, dissolved	M200.7 ICP	1	0.340		*	mg/L	0.005	0.03	07/15/15 15:49	aeb
Mercury, dissolved	M245.1 CVAA	1		U	*	mg/L	0.0002	0.001	07/21/15 16:22	nco
Molybdenum, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.1	07/15/15 15:49	aeb
Nickel, dissolved	M200.7 ICP	1	0.027	B	*	mg/L	0.008	0.04	07/15/15 15:49	aeb
Potassium, dissolved	M200.7 ICP	1	5.3		*	mg/L	0.2	1	07/15/15 15:49	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/15/15 15:49	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0011		*	mg/L	0.0001	0.0003	07/20/15 21:44	msh
Silver, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.03	07/15/15 15:49	aeb
Sodium, dissolved	M200.7 ICP	1	2.5		*	mg/L	0.2	1	07/15/15 15:49	aeb
Strontium, dissolved	M200.7 ICP	1	0.199		*	mg/L	0.005	0.03	07/15/15 15:49	aeb
Thallium, dissolved	M200.8 ICP-MS	1	0.0002	B	*	mg/L	0.0001	0.0005	07/17/15 15:13	mfm
Tin, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/15/15 15:49	aeb
Titanium, dissolved	M200.7 ICP	1		U	*	mg/L	0.005	0.03	07/15/15 15:49	aeb
Vanadium, dissolved	M200.7 ICP	1		U	*	mg/L	0.005	0.03	07/15/15 15:49	aeb
Zinc, dissolved	M200.7 ICP	1	0.53		*	mg/L	0.01	0.05	07/15/15 15:49	aeb

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/100-900/KINETIC C-WEEK 1

ACZ Sample ID: **L25102-03**

Date Sampled: 07/14/15 17:00

Date Received: 06/24/15

Sample Matrix: Leachate

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity--Humidity Cell Test	SM2510B	1	98.3		*	umhos/cm	1	10	07/13/15 14:49	pta
End of leach volumes and mass	D5744-12									
Interstitial Weight		1	116			g			07/14/15 0:00	arc
Leachate Volume Added		1	1000			mL			07/14/15 0:00	arc
Leachate Volume Recovered		1	902			g			07/14/15 0:00	arc
Oxidation Reduction Potential (Eh)	D1498-08	1	388		*	mv	1	1	07/13/15 15:00	pta
pH, Humidity Cell Test	M9045D/M9040C									
pH		1	4.3			units	0.1	0.1	07/13/15 0:00	pta
pH measured at		1	22.3			C	0.1	0.1	07/13/15 0:00	pta

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acidity as CaCO ₃	SM2310B - Titration	1		U	*	mg/L	10	20	07/24/15 13:26	enb
Alkalinity as CaCO ₃	SM2320B - Titration									
Bicarbonate as CaCO ₃		1		U	*	mg/L	2	20	07/15/15 0:00	abd
Carbonate as CaCO ₃		1		U	*	mg/L	2	20	07/15/15 0:00	abd
Hydroxide as CaCO ₃		1		U	*	mg/L	2	20	07/15/15 0:00	abd
Total Alkalinity		1		U	*	mg/L	2	20	07/15/15 0:00	abd
Sulfate	D516-02/-07 - Turbidimetric	1	26.6		*	mg/L	1	5	07/15/15 13:04	bsu

Arizona license number: **AZ0102**

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/100-900/KINETIC C-WEEK 2

ACZ Sample ID: **L25102-04**

Date Sampled: 07/21/15 17:00

Date Received: 06/24/15

Sample Matrix: Leachate

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0002	0.001	07/22/15 11:51	mfm
Cadmium, dissolved	M200.8 ICP-MS	1	0.0093		*	mg/L	0.0001	0.0005	07/22/15 11:51	mfm
Copper, dissolved	M200.7 ICP	1	0.36		*	mg/L	0.01	0.05	07/22/15 21:13	jjc
Iron, dissolved	M200.7 ICP	1	0.03	B	*	mg/L	0.02	0.05	07/22/15 21:13	jjc
Lead, dissolved	M200.8 ICP-MS	1	0.0092		*	mg/L	0.0001	0.0005	07/22/15 11:51	mfm
Zinc, dissolved	M200.7 ICP	1	0.38		*	mg/L	0.01	0.05	07/22/15 21:13	jjc

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity--Humidity Cell Test	SM2510B	1	61.5		*	umhos/cm	1	10	07/20/15 14:32	arc
End of leach volumes and mass	D5744-12									
Interstitial Weight		1	118			g			07/21/15 0:00	arc
Leachate Volume Added		1	1000			mL			07/21/15 0:00	arc
Leachate Volume Recovered		1	984			g			07/21/15 0:00	arc
Oxidation Reduction Potential (Eh)	D1498-08	1	383		*	mv	1	1	07/20/15 15:12	arc
pH, Humidity Cell Test	M9045D/M9040C									
pH		1	4.5			units	0.1	0.1	07/20/15 0:00	arc
pH measured at		1	22.0			C	0.1	0.1	07/20/15 0:00	arc

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acidity as CaCO ₃	SM2310B - Titration	1		U	*	mg/L	10	20	07/24/15 13:40	enb
Alkalinity as CaCO ₃	SM2320B - Titration									
Bicarbonate as CaCO ₃		1		U	*	mg/L	2	20	07/22/15 0:00	abd
Carbonate as CaCO ₃		1		U	*	mg/L	2	20	07/22/15 0:00	abd
Hydroxide as CaCO ₃		1		U	*	mg/L	2	20	07/22/15 0:00	abd
Total Alkalinity		1		U	*	mg/L	2	20	07/22/15 0:00	abd
Sulfate	D516-02/-07 - Turbidimetric	1	16.9		*	mg/L	1	5	07/22/15 12:20	bsu

Arizona license number: **AZ0102**

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/100-900/KINETIC C-WEEK 3

ACZ Sample ID: **L25102-05**

Date Sampled: 07/28/15 17:00

Date Received: 06/24/15

Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0002	0.001	07/29/15 21:09	mfm
Cadmium, dissolved	M200.8 ICP-MS	1	0.0071		*	mg/L	0.0001	0.0005	07/29/15 21:09	mfm
Copper, dissolved	M200.7 ICP	1	0.29		*	mg/L	0.01	0.05	07/29/15 12:19	aeb
Iron, dissolved	M200.7 ICP	1	0.03	B	*	mg/L	0.02	0.05	07/29/15 12:19	aeb
Lead, dissolved	M200.8 ICP-MS	1	0.0089		*	mg/L	0.0001	0.0005	07/29/15 21:09	mfm
Zinc, dissolved	M200.7 ICP	1	0.29		*	mg/L	0.01	0.05	07/29/15 12:19	aeb

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity--Humidity Cell Test	SM2510B	1	49.8		*	umhos/cm	1	10	07/27/15 13:43	arc
End of leach volumes and mass	D5744-12									
Interstitial Weight		1	110			g			07/28/15 0:00	arc
Leachate Volume Added		1	1000			mL			07/28/15 0:00	arc
Leachate Volume Recovered		1	889			g			07/28/15 0:00	arc
Oxidation Reduction Potential (Eh)	D1498-08	1	493		*	mv	1	1	07/27/15 15:04	arc
pH, Humidity Cell Test	M9045D/M9040C									
pH		1	4.4			units	0.1	0.1	07/27/15 0:00	arc
pH measured at		1	20.7			C	0.1	0.1	07/27/15 0:00	arc

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acidity as CaCO ₃	SM2310B - Titration	1		U	*	mg/L	10	20	08/05/15 13:18	apk
Alkalinity as CaCO ₃	SM2320B - Titration									
Bicarbonate as CaCO ₃		1		U	*	mg/L	2	20	07/29/15 0:00	abd
Carbonate as CaCO ₃		1		U	*	mg/L	2	20	07/29/15 0:00	abd
Hydroxide as CaCO ₃		1		U	*	mg/L	2	20	07/29/15 0:00	abd
Total Alkalinity		1		U	*	mg/L	2	20	07/29/15 0:00	abd
Sulfate	D516-02/-07 - Turbidimetric	1	13.4		*	mg/L	1	5	07/29/15 13:40	bsu

Arizona license number: **AZ0102**

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/100-900/KINETIC C-WEEK 4

ACZ Sample ID: **L25102-06**

Date Sampled: 08/04/15 17:00

Date Received: 06/24/15

Sample Matrix: Leachate

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0002	0.001	08/05/15 15:36	mfm
Cadmium, dissolved	M200.8 ICP-MS	1	0.0068		*	mg/L	0.0001	0.0005	08/05/15 15:36	mfm
Copper, dissolved	M200.7 ICP	1	0.28		*	mg/L	0.01	0.05	08/05/15 15:46	jjc
Iron, dissolved	M200.7 ICP	1	0.02	B	*	mg/L	0.02	0.05	08/05/15 15:46	jjc
Lead, dissolved	M200.8 ICP-MS	1	0.0088		*	mg/L	0.0001	0.0005	08/05/15 15:36	mfm
Zinc, dissolved	M200.7 ICP	1	0.26		*	mg/L	0.01	0.05	08/05/15 15:46	jjc

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity--Humidity Cell Test	SM2510B	1	45.9		*	umhos/cm	1	10	08/03/15 14:32	arc
End of leach volumes and mass	D5744-12									
Interstitial Weight		1	109			g			08/04/15 0:00	arc
Leachate Volume Added		1	1000			mL			08/04/15 0:00	arc
Leachate Volume Recovered		1	889			g			08/04/15 0:00	arc
Oxidation Reduction Potential (Eh)	D1498-08	1	475		*	mv	1	1	08/03/15 15:12	arc
pH, Humidity Cell Test	M9045D/M9040C									
pH		1	4.5			units	0.1	0.1	08/03/15 0:00	arc
pH measured at		1	21.7			C	0.1	0.1	08/03/15 0:00	arc

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acidity as CaCO ₃	SM2310B - Titration	1		U	*	mg/L	10	20	08/05/15 13:35	apk
Alkalinity as CaCO ₃	SM2320B - Titration									
Bicarbonate as CaCO ₃		1		U	*	mg/L	2	20	08/05/15 0:00	abd
Carbonate as CaCO ₃		1		U	*	mg/L	2	20	08/05/15 0:00	abd
Hydroxide as CaCO ₃		1		U	*	mg/L	2	20	08/05/15 0:00	abd
Total Alkalinity		1		U	*	mg/L	2	20	08/05/15 0:00	abd
Sulfate	D516-02/-07 - Turbidimetric	1	11.3		*	mg/L	1	5	08/06/15 12:49	bsu

Arizona license number: **AZ0102**

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/100-900/KINETIC C-WEEK 5

ACZ Sample ID: **L25102-07**

Date Sampled: 08/11/15 17:00

Date Received: 06/24/15

Sample Matrix: Leachate

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0002	0.001	08/12/15 18:38	mfm
Cadmium, dissolved	M200.8 ICP-MS	1	0.0066		*	mg/L	0.0001	0.0005	08/17/15 21:38	msh
Copper, dissolved	M200.7 ICP	1	0.28		*	mg/L	0.01	0.05	08/12/15 20:21	aeb
Iron, dissolved	M200.7 ICP	1	0.03	B	*	mg/L	0.02	0.05	08/13/15 15:14	aeb
Lead, dissolved	M200.8 ICP-MS	1	0.0094		*	mg/L	0.0001	0.0005	08/13/15 18:58	mfm
Zinc, dissolved	M200.7 ICP	1	0.26		*	mg/L	0.01	0.05	08/12/15 20:21	aeb

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity--Humidity Cell Test	SM2510B	1	44.4		*	umhos/cm	1	10	08/10/15 14:32	arc
End of leach volumes and mass	D5744-12									
Interstitial Weight		1	111			g			08/11/15 0:00	arc
Leachate Volume Added		1	1000			mL			08/11/15 0:00	arc
Leachate Volume Recovered		1	888			g			08/11/15 0:00	arc
Oxidation Reduction Potential (Eh)	D1498-08	1	486		*	mv	1	1	08/10/15 15:12	arc
pH, Humidity Cell Test	M9045D/M9040C									
pH		1	4.4			units	0.1	0.1	08/10/15 0:00	arc
pH measured at		1	21.0			C	0.1	0.1	08/10/15 0:00	arc

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acidity as CaCO ₃	SM2310B - Titration	1		U	*	mg/L	10	20	08/20/15 10:48	enb
Alkalinity as CaCO ₃	SM2320B - Titration									
Bicarbonate as CaCO ₃		1		U	*	mg/L	2	20	08/14/15 0:00	abd
Carbonate as CaCO ₃		1		U	*	mg/L	2	20	08/14/15 0:00	abd
Hydroxide as CaCO ₃		1		U	*	mg/L	2	20	08/14/15 0:00	abd
Total Alkalinity		1		U	*	mg/L	2	20	08/14/15 0:00	abd
Sulfate	D516-02/-07 - Turbidimetric	1	10.9		*	mg/L	1	5	08/12/15 12:06	bsu

Arizona license number: **AZ0102**

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/100-900/KINETIC C-WEEK 6

ACZ Sample ID: **L25102-08**

Date Sampled: 08/18/15 17:00

Date Received: 06/24/15

Sample Matrix: Leachate

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1	0.21		*	mg/L	0.03	0.2	08/26/15 16:42	aeb
Antimony, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0004	0.002	08/19/15 11:56	mfm
Arsenic, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0002	0.001	08/19/15 11:56	mfm
Barium, dissolved	M200.7 ICP	1	0.077		*	mg/L	0.003	0.02	08/26/15 16:42	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.00005	0.0003	08/21/15 12:41	msh
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/26/15 16:42	aeb
Boron, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	08/26/15 16:42	aeb
Cadmium, dissolved	M200.8 ICP-MS	1	0.0063		*	mg/L	0.0001	0.0005	08/21/15 12:41	msh
Calcium, dissolved	M200.7 ICP	1	1.3		*	mg/L	0.1	0.5	08/26/15 16:42	aeb
Chromium, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	08/26/15 16:42	aeb
Cobalt, dissolved	M200.7 ICP	1	0.05		*	mg/L	0.01	0.05	08/27/15 17:47	aeb
Copper, dissolved	M200.7 ICP	1	0.30		*	mg/L	0.01	0.05	08/26/15 16:42	aeb
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/26/15 16:42	aeb
Iron, dissolved	M200.7 ICP	1	0.03	B	*	mg/L	0.02	0.05	08/26/15 16:42	aeb
Lead, dissolved	M200.8 ICP-MS	1	0.0092		*	mg/L	0.0001	0.0005	08/21/15 12:41	msh
Lithium, dissolved	M200.7 ICP	1		U	*	mg/L	0.008	0.04	08/26/15 16:42	aeb
Magnesium, dissolved	M200.7 ICP	1	0.3	B	*	mg/L	0.2	1	08/26/15 16:42	aeb
Manganese, dissolved	M200.7 ICP	1	0.116		*	mg/L	0.005	0.03	08/26/15 16:42	aeb
Mercury, dissolved	M245.1 CVAA	1		U	*	mg/L	0.0002	0.001	08/24/15 12:32	mfm
Molybdenum, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.1	08/26/15 16:42	aeb
Nickel, dissolved	M200.7 ICP	1	0.010	B	*	mg/L	0.008	0.04	08/26/15 16:42	aeb
Potassium, dissolved	M200.7 ICP	1	1.8		*	mg/L	0.2	1	08/26/15 16:42	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/26/15 16:42	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0005		*	mg/L	0.0001	0.0003	08/19/15 11:56	mfm
Silver, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.03	08/27/15 17:47	aeb
Sodium, dissolved	M200.7 ICP	1	0.4	B	*	mg/L	0.2	1	08/26/15 16:42	aeb
Strontium, dissolved	M200.7 ICP	1	0.102		*	mg/L	0.005	0.03	08/26/15 16:42	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	08/19/15 11:56	mfm
Tin, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/26/15 16:42	aeb
Titanium, dissolved	M200.7 ICP	1		U	*	mg/L	0.005	0.03	08/26/15 16:42	aeb
Vanadium, dissolved	M200.7 ICP	1		U	*	mg/L	0.005	0.03	08/26/15 16:42	aeb
Zinc, dissolved	M200.7 ICP	1	0.27		*	mg/L	0.01	0.05	08/26/15 16:42	aeb

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/100-900/KINETIC C-WEEK 6

ACZ Sample ID: **L25102-08**

Date Sampled: 08/18/15 17:00

Date Received: 06/24/15

Sample Matrix: Leachate

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity--Humidity Cell Test	SM2510B	1	44.1		*	umhos/cm	1	10	08/17/15 14:32	arc
End of leach volumes and mass	D5744-12									
Interstitial Weight		1	109			g			08/18/15 0:00	arc
Leachate Volume Added		1	1000			mL			08/18/15 0:00	arc
Leachate Volume Recovered		1	888			g			08/18/15 0:00	arc
Oxidation Reduction Potential (Eh)	D1498-08	1	473		*	mv	1	1	08/17/15 15:12	arc
pH, Humidity Cell Test	M9045D/M9040C									
pH		1	4.4			units	0.1	0.1	08/17/15 0:00	arc
pH measured at		1	21.3			C	0.1	0.1	08/17/15 0:00	arc

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acidity as CaCO ₃	SM2310B - Titration	1		U	*	mg/L	10	20	08/27/15 14:17	tms
Alkalinity as CaCO ₃	SM2320B - Titration									
Bicarbonate as CaCO ₃		1		U	*	mg/L	2	20	08/19/15 0:00	abd
Carbonate as CaCO ₃		1		U	*	mg/L	2	20	08/19/15 0:00	abd
Hydroxide as CaCO ₃		1		U	*	mg/L	2	20	08/19/15 0:00	abd
Total Alkalinity		1		U	*	mg/L	2	20	08/19/15 0:00	abd
Sulfate	D516-02/-07 - Turbidimetric	1	10.2		*	mg/L	1	5	08/20/15 11:57	bsu

Arizona license number: **AZ0102**

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/100-900/KINETIC C-WEEK 7

ACZ Sample ID: **L25102-09**

Date Sampled: 08/25/15 17:00

Date Received: 06/24/15

Sample Matrix: Leachate

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0002	0.001	08/26/15 17:44	mfm
Cadmium, dissolved	M200.8 ICP-MS	1	0.0066		*	mg/L	0.0001	0.0005	08/26/15 17:44	mfm
Copper, dissolved	M200.7 ICP	1	0.29		*	mg/L	0.01	0.05	08/26/15 19:05	jjc
Iron, dissolved	M200.7 ICP	1	0.03	B	*	mg/L	0.02	0.05	08/26/15 19:05	jjc
Lead, dissolved	M200.8 ICP-MS	1	0.0100		*	mg/L	0.0001	0.0005	08/26/15 17:44	mfm
Zinc, dissolved	M200.7 ICP	1	0.25		*	mg/L	0.01	0.05	08/26/15 19:05	jjc

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity--Humidity Cell Test	SM2510B	1	41.4		*	umhos/cm	1	10	08/24/15 14:00	arc
End of leach volumes and mass	D5744-12									
Interstitial Weight		1	109			g			08/25/15 0:00	arc
Leachate Volume Added		1	1000			mL			08/25/15 0:00	arc
Leachate Volume Recovered		1	890			g			08/25/15 0:00	arc
Oxidation Reduction Potential (Eh)	D1498-08	1	418		*	mv	1	1	08/24/15 14:45	arc
pH, Humidity Cell Test	M9045D/M9040C									
pH		1	4.4			units	0.1	0.1	08/24/15 0:00	arc
pH measured at		1	21.0			C	0.1	0.1	08/24/15 0:00	arc

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acidity as CaCO ₃	SM2310B - Titration	1	12	B	*	mg/L	10	20	09/07/15 10:46	sck
Alkalinity as CaCO ₃	SM2320B - Titration									
Bicarbonate as CaCO ₃		1		U	*	mg/L	2	20	09/02/15 0:00	tms
Carbonate as CaCO ₃		1		U	*	mg/L	2	20	09/02/15 0:00	tms
Hydroxide as CaCO ₃		1		U	*	mg/L	2	20	09/02/15 0:00	tms
Total Alkalinity		1		U	*	mg/L	2	20	09/02/15 0:00	tms
Sulfate	D516-02/-07 - Turbidimetric	1	8.9			mg/L	1	5	08/27/15 13:32	mss2

Arizona license number: **AZ0102**

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/100-900/KINETIC C-WEEK 8

ACZ Sample ID: **L25102-10**

Date Sampled: 09/01/15 17:00

Date Received: 06/24/15

Sample Matrix: Leachate

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0002	0.001	09/04/15 17:29	msh
Cadmium, dissolved	M200.8 ICP-MS	1	0.0064		*	mg/L	0.0001	0.0005	09/04/15 17:29	msh
Copper, dissolved	M200.7 ICP	1	0.30		*	mg/L	0.01	0.05	09/04/15 22:38	aeb
Iron, dissolved	M200.7 ICP	1	0.05		*	mg/L	0.02	0.05	09/04/15 22:38	aeb
Lead, dissolved	M200.8 ICP-MS	1	0.0112		*	mg/L	0.0001	0.0005	09/04/15 17:29	msh
Zinc, dissolved	M200.7 ICP	1	0.24		*	mg/L	0.01	0.05	09/04/15 22:38	aeb

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity--Humidity Cell Test	SM2510B	1	34.3		*	umhos/cm	1	10	09/01/15 14:00	arc
End of leach volumes and mass	D5744-12									
Interstitial Weight		1	111			g			08/31/15 0:00	arc
Leachate Volume Added		1	1000			mL			08/31/15 0:00	arc
Leachate Volume Recovered		1	886			g			08/31/15 0:00	arc
Oxidation Reduction Potential (Eh)	D1498-08	1	407		*	mv	1	1	09/01/15 14:45	arc
pH, Humidity Cell Test	M9045D/M9040C									
pH		1	4.3			units	0.1	0.1	09/01/15 0:00	arc
pH measured at		1	19.9			C	0.1	0.1	09/01/15 0:00	arc

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acidity as CaCO ₃	SM2310B - Titration	1	10	B	*	mg/L	10	20	09/10/15 12:05	tms
Alkalinity as CaCO ₃	SM2320B - Titration									
Bicarbonate as CaCO ₃		1		U	*	mg/L	2	20	09/10/15 0:00	enb
Carbonate as CaCO ₃		1		U	*	mg/L	2	20	09/10/15 0:00	enb
Hydroxide as CaCO ₃		1		U	*	mg/L	2	20	09/10/15 0:00	enb
Total Alkalinity		1		U	*	mg/L	2	20	09/10/15 0:00	enb
Sulfate	D516-02/-07 - Turbidimetric	1	9.6		*	mg/L	1	5	09/03/15 11:22	bsu

Arizona license number: **AZ0102**

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/100-900/KINETIC C-WEEK 9

ACZ Sample ID: **L25102-11**

Date Sampled: 09/08/15 17:00

Date Received: 06/24/15

Sample Matrix: Leachate

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0002	0.001	09/11/15 12:40	mfm
Cadmium, dissolved	M200.8 ICP-MS	1	0.0062		*	mg/L	0.0001	0.0005	09/11/15 12:40	mfm
Copper, dissolved	M200.7 ICP	1	0.29		*	mg/L	0.01	0.05	09/15/15 11:14	aeb
Iron, dissolved	M200.7 ICP	1	0.05		*	mg/L	0.02	0.05	09/15/15 11:14	aeb
Lead, dissolved	M200.8 ICP-MS	1	0.0112		*	mg/L	0.0001	0.0005	09/11/15 12:40	mfm
Zinc, dissolved	M200.7 ICP	1	0.25		*	mg/L	0.01	0.05	09/15/15 11:14	aeb

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity--Humidity Cell Test	SM2510B	1	40.9		*	umhos/cm	1	10	09/07/15 14:00	arc
End of leach volumes and mass	D5744-12									
Interstitial Weight		1	111			g			09/08/15 0:00	arc
Leachate Volume Added		1	1000			mL			09/08/15 0:00	arc
Leachate Volume Recovered		1	885			g			09/08/15 0:00	arc
Oxidation Reduction Potential (Eh)	D1498-08	1	529		*	mv	1	1	09/07/15 14:45	arc
pH, Humidity Cell Test	M9045D/M9040C									
pH		1	4.3			units	0.1	0.1	09/07/15 0:00	arc
pH measured at		1	20.9			C	0.1	0.1	09/07/15 0:00	arc

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acidity as CaCO ₃	SM2310B - Titration	1		U	*	mg/L	10	20	09/16/15 13:57	enb
Alkalinity as CaCO ₃	SM2320B - Titration									
Bicarbonate as CaCO ₃		1		U	*	mg/L	2	20	09/10/15 0:00	enb
Carbonate as CaCO ₃		1		U	*	mg/L	2	20	09/10/15 0:00	enb
Hydroxide as CaCO ₃		1		U	*	mg/L	2	20	09/10/15 0:00	enb
Total Alkalinity		1		U	*	mg/L	2	20	09/10/15 0:00	enb
Sulfate	D516-02/-07 - Turbidimetric	1	8.5			mg/L	1	5	09/10/15 12:53	mss2

Arizona license number: **AZ0102**

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/100-900/KINETIC C-WEEK10

ACZ Sample ID: **L25102-12**

Date Sampled: 09/15/15 17:00

Date Received: 06/24/15

Sample Matrix: Leachate

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0002	0.001	09/17/15 18:34	mfm
Cadmium, dissolved	M200.8 ICP-MS	1	0.0059		*	mg/L	0.0001	0.0005	09/18/15 21:22	mfm
Copper, dissolved	M200.7 ICP	1	0.28		*	mg/L	0.01	0.05	09/18/15 21:38	aeb
Iron, dissolved	M200.7 ICP	1	0.05		*	mg/L	0.02	0.05	09/18/15 21:38	aeb
Lead, dissolved	M200.8 ICP-MS	1	0.0108		*	mg/L	0.0001	0.0005	09/18/15 21:22	mfm
Zinc, dissolved	M200.7 ICP	1	0.22		*	mg/L	0.01	0.05	09/18/15 21:38	aeb

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity--Humidity Cell Test	SM2510B	1	39.6		*	umhos/cm	1	10	09/14/15 14:00	arc
End of leach volumes and mass	D5744-12									
Interstitial Weight		1	115			g			09/15/15 0:00	arc
Leachate Volume Added		1	1000			mL			09/15/15 0:00	arc
Leachate Volume Recovered		1	880			g			09/15/15 0:00	arc
Oxidation Reduction Potential (Eh)	D1498-08	1	335		*	mv	1	1	09/14/15 14:36	arc
pH, Humidity Cell Test	M9045D/M9040C									
pH		1	4.4			units	0.1	0.1	09/14/15 0:00	arc
pH measured at		1	20.4			C	0.1	0.1	09/14/15 0:00	arc

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acidity as CaCO ₃	SM2310B - Titration	1		U	*	mg/L	10	20	09/25/15 12:40	sck
Alkalinity as CaCO ₃	SM2320B - Titration									
Bicarbonate as CaCO ₃		1		U	*	mg/L	2	20	09/23/15 0:00	enb
Carbonate as CaCO ₃		1		U	*	mg/L	2	20	09/23/15 0:00	enb
Hydroxide as CaCO ₃		1		U	*	mg/L	2	20	09/23/15 0:00	enb
Total Alkalinity		1		U	*	mg/L	2	20	09/23/15 0:00	enb
Sulfate	D516-02/-07 - Turbidimetric	1	8.1			mg/L	1	5	09/17/15 11:19	mss2

Arizona license number: **AZ0102**

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/100-900/KINETIC C-WEEK11

ACZ Sample ID: **L25102-13**

Date Sampled: 09/22/15 17:00

Date Received: 06/24/15

Sample Matrix: Leachate

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0002	0.001	09/23/15 12:50	mfm
Cadmium, dissolved	M200.8 ICP-MS	1	0.0056		*	mg/L	0.0001	0.0005	09/23/15 12:50	mfm
Copper, dissolved	M200.7 ICP	1	0.26		*	mg/L	0.01	0.05	09/25/15 17:02	aeb
Iron, dissolved	M200.7 ICP	1	0.08		*	mg/L	0.02	0.05	09/25/15 17:02	aeb
Lead, dissolved	M200.8 ICP-MS	1	0.0104		*	mg/L	0.0001	0.0005	09/23/15 12:50	mfm
Zinc, dissolved	M200.7 ICP	1	0.22		*	mg/L	0.01	0.05	09/25/15 17:02	aeb

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity--Humidity Cell Test	SM2510B	1	38.5		*	umhos/cm	1	10	09/21/15 14:00	arc
End of leach volumes and mass	D5744-12									
Interstitial Weight		1	109			g			09/21/15 0:00	arc
Leachate Volume Added		1	1000			mL			09/21/15 0:00	arc
Leachate Volume Recovered		1	888			g			09/21/15 0:00	arc
Oxidation Reduction Potential (Eh)	D1498-08	1	244		*	mv	1	1	09/21/15 14:36	arc
pH, Humidity Cell Test	M9045D/M9040C									
pH		1	4.3			units	0.1	0.1	09/21/15 0:00	arc
pH measured at		1	20.4			C	0.1	0.1	09/21/15 0:00	arc

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acidity as CaCO ₃	SM2310B - Titration	1		U	*	mg/L	10	20	09/29/15 13:56	enb
Alkalinity as CaCO ₃	SM2320B - Titration									
Bicarbonate as CaCO ₃		1		U	*	mg/L	2	20	09/28/15 0:00	enb
Carbonate as CaCO ₃		1		U	*	mg/L	2	20	09/28/15 0:00	enb
Hydroxide as CaCO ₃		1		U	*	mg/L	2	20	09/28/15 0:00	enb
Total Alkalinity		1		U	*	mg/L	2	20	09/28/15 0:00	enb
Sulfate	D516-02/-07 - Turbidimetric	1	7.7			mg/L	1	5	09/28/15 11:30	mss2

Arizona license number: **AZ0102**

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/100-900/KINETIC C-WEEK12

ACZ Sample ID: **L25102-14**

Date Sampled: 09/29/15 17:00

Date Received: 06/24/15

Sample Matrix: Leachate

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1	0.20		*	mg/L	0.03	0.2	10/02/15 23:46	aeb
Antimony, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0004	0.002	10/02/15 18:36	mfm
Arsenic, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0002	0.001	10/01/15 15:22	mfm
Barium, dissolved	M200.7 ICP	1	0.089		*	mg/L	0.003	0.02	10/02/15 23:46	aeb
Beryllium, dissolved	M200.8 ICP-MS	1	0.00009	B	*	mg/L	0.00005	0.0003	10/01/15 15:22	mfm
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	10/02/15 23:46	aeb
Boron, dissolved	M200.7 ICP	1	0.01	B	*	mg/L	0.01	0.05	10/02/15 23:46	aeb
Cadmium, dissolved	M200.8 ICP-MS	1	0.0057		*	mg/L	0.0001	0.0005	10/01/15 15:22	mfm
Calcium, dissolved	M200.7 ICP	1	0.8		*	mg/L	0.1	0.5	10/02/15 23:46	aeb
Chromium, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	10/02/15 23:46	aeb
Cobalt, dissolved	M200.7 ICP	1	0.04	B	*	mg/L	0.01	0.05	10/03/15 21:37	aeb
Copper, dissolved	M200.7 ICP	1	0.27		*	mg/L	0.01	0.05	10/02/15 23:46	aeb
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	10/02/15 23:46	aeb
Iron, dissolved	M200.7 ICP	1	0.07		*	mg/L	0.02	0.05	10/02/15 23:46	aeb
Lead, dissolved	M200.8 ICP-MS	1	0.0110		*	mg/L	0.0001	0.0005	10/01/15 15:22	mfm
Lithium, dissolved	M200.7 ICP	1		U	*	mg/L	0.008	0.04	10/02/15 23:46	aeb
Magnesium, dissolved	M200.7 ICP	1	0.2	B	*	mg/L	0.2	1	10/02/15 23:46	aeb
Manganese, dissolved	M200.7 ICP	1	0.077		*	mg/L	0.005	0.03	10/02/15 23:46	aeb
Mercury, dissolved	M245.1 CVAA	1		U	*	mg/L	0.0002	0.001	10/02/15 13:46	pta
Molybdenum, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.1	10/02/15 23:46	aeb
Nickel, dissolved	M200.7 ICP	1	0.009	B	*	mg/L	0.008	0.04	10/02/15 23:46	aeb
Potassium, dissolved	M200.7 ICP	1	1.2		*	mg/L	0.2	1	10/02/15 23:46	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	10/02/15 23:46	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0004		*	mg/L	0.0001	0.0003	10/01/15 15:22	mfm
Silver, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.03	10/02/15 23:46	aeb
Sodium, dissolved	M200.7 ICP	1	0.2	B	*	mg/L	0.2	1	10/02/15 23:46	aeb
Strontium, dissolved	M200.7 ICP	1	0.090		*	mg/L	0.005	0.03	10/02/15 23:46	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	10/01/15 15:22	mfm
Tin, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	10/02/15 23:46	aeb
Titanium, dissolved	M200.7 ICP	1		U	*	mg/L	0.005	0.03	10/02/15 23:46	aeb
Vanadium, dissolved	M200.7 ICP	1		U	*	mg/L	0.005	0.03	10/02/15 23:46	aeb
Zinc, dissolved	M200.7 ICP	1	0.22		*	mg/L	0.01	0.05	10/02/15 23:46	aeb

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/100-900/KINETIC C-WEEK12

ACZ Sample ID: **L25102-14**

Date Sampled: 09/29/15 17:00

Date Received: 06/24/15

Sample Matrix: Leachate

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity--Humidity Cell Test	SM2510B	1	35.7		*	umhos/cm	1	10	09/28/15 14:00	arc
End of leach volumes and mass	D5744-12									
Interstitial Weight		1	110			g			09/28/15 0:00	arc
Leachate Volume Added		1	1000			mL			09/28/15 0:00	arc
Leachate Volume Recovered		1	887			g			09/28/15 0:00	arc
Oxidation Reduction Potential (Eh)	D1498-08	1	485		*	mv	1	1	09/28/15 14:36	arc
pH, Humidity Cell Test	M9045D/M9040C									
pH		1	4.4			units	0.1	0.1	09/28/15 0:00	arc
pH measured at		1	19.6			C	0.1	0.1	09/28/15 0:00	arc

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acidity as CaCO ₃	SM2310B - Titration	1		U	*	mg/L	10	20	09/30/15 11:05	sck
Alkalinity as CaCO ₃	SM2320B - Titration									
Bicarbonate as CaCO ₃		1		U	*	mg/L	2	20	10/05/15 0:00	enb
Carbonate as CaCO ₃		1		U	*	mg/L	2	20	10/05/15 0:00	enb
Hydroxide as CaCO ₃		1		U	*	mg/L	2	20	10/05/15 0:00	enb
Total Alkalinity		1		U	*	mg/L	2	20	10/05/15 0:00	enb
Sulfate	D516-02/-07 - Turbidimetric	1	7.1		*	mg/L	1	5	10/02/15 9:43	mss2

Arizona license number: **AZ0102**

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/100-900/KINETIC C-WEEK13

ACZ Sample ID: **L25102-15**

Date Sampled: 10/06/15 17:00

Date Received: 06/24/15

Sample Matrix: Leachate

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0002	0.001	10/07/15 21:21	mfm
Cadmium, dissolved	M200.8 ICP-MS	1	0.0058		*	mg/L	0.0001	0.0005	10/07/15 21:21	mfm
Copper, dissolved	M200.7 ICP	1	0.29		*	mg/L	0.01	0.05	10/09/15 21:14	jjc
Iron, dissolved	M200.7 ICP	1	0.08		*	mg/L	0.02	0.05	10/09/15 21:14	jjc
Lead, dissolved	M200.8 ICP-MS	1	0.0105		*	mg/L	0.0001	0.0005	10/07/15 21:21	mfm
Zinc, dissolved	WG392121	1	***0.21***		*	mg/L	0.01	0.05	10/10/15 16:02	AREV

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity--Humidity Cell Test	SM2510B	1	36.0		*	umhos/cm	1	10	10/05/15 14:00	arc
End of leach volumes and mass	D5744-12									
Interstitial Weight		1	109			g			10/06/15 0:00	arc
Leachate Volume Added		1	1000			mL			10/06/15 0:00	arc
Leachate Volume Recovered		1	889			g			10/06/15 0:00	arc
Oxidation Reduction Potential (Eh)	D1498-08	1	403		*	mv	1	1	10/05/15 14:36	arc
pH, Humidity Cell Test	M9045D/M9040C									
pH		1	4.3			units	0.1	0.1	10/05/15 0:00	arc
pH measured at		1	20.3			C	0.1	0.1	10/05/15 0:00	arc

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acidity as CaCO ₃			*****							NEED
Alkalinity as CaCO ₃	SM2320B - Titration									
Bicarbonate as CaCO ₃		1		U	*	mg/L	2	20	10/07/15 0:00	enb
Carbonate as CaCO ₃		1		U	*	mg/L	2	20	10/07/15 0:00	enb
Hydroxide as CaCO ₃		1		U	*	mg/L	2	20	10/07/15 0:00	enb
Total Alkalinity		1		U	*	mg/L	2	20	10/07/15 0:00	enb
Sulfate	WG391926	1	***7.4***			mg/L	1	5	10/07/15 15:01	AREV

Arizona license number: **AZ0102**



Report Header Explanations

<i>Batch</i>	A distinct set of samples analyzed at a specific time
<i>Found</i>	Value of the QC Type of interest
<i>Limit</i>	Upper limit for RPD, in %.
<i>Lower</i>	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
<i>MDL</i>	Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #5). Allows for instrument and annual fluctuations.
<i>PCN/SCN</i>	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
<i>PQL</i>	Practical Quantitation Limit. Synonymous with the EPA term "minimum level".
<i>QC</i>	True Value of the Control Sample or the amount added to the Spike
<i>Rec</i>	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
<i>RPD</i>	Relative Percent Difference, calculation used for Duplicate QC Types
<i>Upper</i>	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
<i>Sample</i>	Value of the Sample of interest

QC Sample Types

<i>AS</i>	Analytical Spike (Post Digestion)	<i>LCSWD</i>	Laboratory Control Sample - Water Duplicate
<i>ASD</i>	Analytical Spike (Post Digestion) Duplicate	<i>LFB</i>	Laboratory Fortified Blank
<i>CCB</i>	Continuing Calibration Blank	<i>LFM</i>	Laboratory Fortified Matrix
<i>CCV</i>	Continuing Calibration Verification standard	<i>LFMD</i>	Laboratory Fortified Matrix Duplicate
<i>DUP</i>	Sample Duplicate	<i>LRB</i>	Laboratory Reagent Blank
<i>ICB</i>	Initial Calibration Blank	<i>MS</i>	Matrix Spike
<i>ICV</i>	Initial Calibration Verification standard	<i>MSD</i>	Matrix Spike Duplicate
<i>ICSAB</i>	Inter-element Correction Standard - A plus B solutions	<i>PBS</i>	Prep Blank - Soil
<i>LCSS</i>	Laboratory Control Sample - Soil	<i>PBW</i>	Prep Blank - Water
<i>LCSSD</i>	Laboratory Control Sample - Soil Duplicate	<i>PQV</i>	Practical Quantitation Verification standard
<i>LCSW</i>	Laboratory Control Sample - Water	<i>SDL</i>	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3)	EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste.
(5)	Standard Methods for the Examination of Water and Wastewater.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3)	Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5)	If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click:

<http://www.acz.com/public/extquallist.pdf>

Adrian Brown Consultants, Inc.

ACZ Project ID: L25102

Date Received: 06/24/2015 09:47

Received By: ear

Date Printed: 6/24/2015

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?	☐	☐	☒
2) Is the Chain of Custody or other directive shipping papers present?	☒	☐	☐
3) Does this project require special handling procedures such as CLP protocol?	☐	☐	☒
4) Are any samples NRC licensable material?	☐	☐	☒
5) If samples are received past hold time, proceed with requested short hold time analyses?	☒	☐	☐
6) Is the Chain of Custody complete and accurate?	☒	☐	☐
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?	☐	☒	☐

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	☒	☐	☐
9) Are all labels on containers and are they intact and legible?	☒	☐	☐
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	☒	☐	☐
11) For preserved bottle types, was the pH checked and within limits? ¹	☐	☐	☒
12) Is there sufficient sample volume to perform all requested work?	☒	☐	☐
13) Is the custody seal intact on all containers?	☐	☐	☒
14) Are samples that require zero headspace acceptable?	☐	☐	☒
15) Are all sample containers appropriate for analytical requirements?	☒	☐	☐
16) Is there an Hg-1631 trip blank present?	☐	☐	☒
17) Is there a VOA trip blank present?	☐	☐	☒
18) Were all samples received within hold time?	☒	☐	☐

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
NA22019	19.9	19	N/A

Was ice present in the shipment container(s)?

No - Wet or gel ice was not present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

Adrian Brown Consultants, Inc.

ACZ Project ID: L25102

Date Received: 06/24/2015 09:47

Received By: ear

Date Printed: 6/24/2015

¹ The preservation of the following bottle types is not checked at sample receipt: Orange (oil and grease), Purple (total cyanide), Pink (dissolved cyanide), Brown (arsenic speciation), Sterile (fecal coliform), EDTA (sulfite), HCl preserved vial (organics), Na₂S₂O₃ preserved vial (organics), and HG-1631 (total/dissolved mercury by method 1631).

Preliminary



Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: JEFFREY WINICK

Company: SCHLUMBERGER WATER SERV.

E-mail: JWINICK@SLB.COM

Address: 1875 LAWRENCE STREET, SUITE 500

DENVER, CO 80215

Telephone: +1.303.244.8224

Copy of Report to:

Name: ADRIAN BROWN

Company: ADRIAN BROWN CONSULTANTS

E-mail: abrown@abch2o.com

Telephone: (303) 698-9080

Invoice to:

Name: ADRIAN BROWN

Company: ADRIAN BROWN CONSULTANTS

E-mail: lbrown@abch2o.com

Address: 130 W 4th Ave

Denver CO USA 80223

Telephone: (303) 698-9080

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses?

YES

NO

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO"

is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified.

Are samples for CO DW Compliance Monitoring?

YES

NO

If yes, please include state forms. Results will be reported to PQL.

PROJECT INFORMATION

ANALYSES REQUESTED (attach list or use quote number)

Quote #: CO HYDROGEOCHEMICAL STUDY

Project/PO #:

Reporting state for compliance testing:

Sampler's Name: ALS Minerals/Jose Gonzalez

Are any samples NRC licensable material? Yes No

SAMPLE IDENTIFICATION

DATE: TIME

Matrix

of Containers

LO - HYDROGEOCHEM

LO - HYDROGEOCHEM
- PRE-425

GHC-15-1/100-300/Static C+

15-June-15

rock

1(kg)

X

GHC-15-1/300-500/Static C+

15-June-15

rock

1(kg)

X

GHC-15-1/500-700/Static C+

15-June-15

rock

1(kg)

X

GHC-15-1/700-900/Static C+

15-June-15

rock

1(kg)

X

GHC15-1/100-900/Kinetic C+

15-June-15

rock

8(kg)

X

GHC15-1/900-1100/Static C+

15-June-15

rock

1(kg)

X

GHC15-1/1100-1300/Static C

15-June-15:

rock

1(kg)

X

GHC15-1/1300-1500/Static C

15-June-15:

rock

1(kg)

X

GHC15-1/1500-1700/Static C

15-June-15:

rock

1(kg)

X

GHC15-1/900-1700/Kinetic C

15-June-15:

rock

8(kg)

X

Matrix

SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

Please contact Jeff Winick at 303.244.8224 for further instructions

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:

DATE: TIME

RECEIVED BY:

DATE: TIME

6-23-15

HPL

6/25/15 0840

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/900-1700/KINETIC C

ACZ Sample ID: **L25103-01**

Date Sampled: 06/15/15 00:00

Date Received: 06/24/15

Sample Matrix: Soil

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acid Generation Potential (calc on Sulfur total)	M600/2-78-054 3.2.4		113			t CaCO3/Kt	0.31	3.1	10/13/15 0:00	calc
Acid Neutralization Potential (calc)	M600/2-78-054 1.3		11.0			t CaCO3/Kt	1	5	10/13/15 0:00	calc
Acid-Base Potential (calc on Sulfur total)	M600/2-78-054 1.3		-102			t CaCO3/Kt			10/13/15 0:00	calc
Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	1		U	*	%	0.1	0.5	08/05/15 11:59	cra
Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	1		U	*	%	0.1	0.5	08/05/15 11:59	cra
Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	1		U	*	%	0.1	0.5	08/05/15 11:59	cra
Net Acid Generation Procedure	Single NAG - EGI 2002									
NAG		1	62		*	Kg H2SO4/t	1	1	07/30/15 0:00	brd
pH After Oxidation		1	2.3		*	units	0.1	0.1	07/30/15 0:00	brd
Neutralization Potential as CaCO3	M600/2-78-054 3.2.3	1	1.1		*	%	0.1	0.5	08/10/15 12:10	cra
Sieve- 63 um (230 mesh)	ASA No.9, 15-4.2.2	1	4.3		*	% Passing	0.1	0.5	08/19/15 8:00	brd
Sieve- 125 um (120 mesh)	ASA No.9, 15-4.2.2	1	8		*	% Passing	0.1	0.5	08/19/15 8:00	brd
Sieve- 250 um (60 mesh)	ASA No.9, 15-4.2.2	1	13.5		*	% Passing	0.1	0.5	08/19/15 8:00	brd
Sieve- 500 um (35 mesh)	ASA No.9, 15-4.2.2	1	21.1		*	% Passing	0.1	0.5	08/19/15 8:00	brd
Sieve- 850 um (20 mesh)	ASA No.9, 15-4.2.2	1	27.5		*	% Passing	0.1	0.5	08/19/15 8:00	brd
Sieve- 2000 um (2.0 mm)	ASA No.9, 15-4.2.2	1	40.3		*	% Passing	0.1	0.5	08/19/15 8:00	brd
Sieve- 4000 um (4.0mm)	ASA No.9, 15-4.2.2	1	55.3		*	% Passing	0.1	0.5	08/19/15 8:00	brd
Sulfur Forms	M600/2-78-054 3.2.4-MOD									
Sulfur HCl Residue		1	3.31		*	%	0.01	0.1	08/05/15 0:00	cra
Sulfur HNO3 Residue		1	0.08	B	*	%	0.01	0.1	08/05/15 0:00	cra
Sulfur Organic Residual		1	0.08	B	*	%	0.01	0.1	08/05/15 0:00	cra
Sulfur Pyritic Sulfide		1	3.23		*	%	0.01	0.1	08/05/15 0:00	cra
Sulfur Sulfate		1	0.30		*	%	0.01	0.1	08/05/15 0:00	cra
Sulfur Total		1	3.61		*	%	0.01	0.1	08/05/15 0:00	cra
Total Sulfur minus Sulfate		1	3.31		*	%	0.01	0.1	08/05/15 0:00	cra

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/900-1700/KINETIC C

ACZ Sample ID: **L25103-01**

Date Sampled: 06/15/15 00:00

Date Received: 06/24/15

Sample Matrix: Soil

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972				*				07/16/15 9:00	brd
Crush and Pulverize (Ring & Puck)	EPA-600/2-78-054 3.1.3				*				07/28/15 8:44	brd
Humidity Cell Test	D5744-12									
Grain Size			*****							WIP
Sample Weight			*****							WIP

Arizona license number: AZ0102

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/900-1700/KINETIC C-WEEK 0

ACZ Sample ID: **L25103-02**

Date Sampled: 07/07/15 17:00

Date Received: 06/24/15

Sample Matrix: Leachate

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1	0.22		*	mg/L	0.03	0.2	07/09/15 20:18	jjc
Antimony, dissolved	M200.8 ICP-MS	1	0.0010	B	*	mg/L	0.0004	0.002	07/08/15 17:55	mfm
Arsenic, dissolved	M200.8 ICP-MS	1	0.0005	B	*	mg/L	0.0002	0.001	07/08/15 17:55	mfm
Barium, dissolved	M200.7 ICP	1	0.253		*	mg/L	0.003	0.02	07/10/15 12:12	aeb
Beryllium, dissolved	M200.8 ICP-MS	1	0.00013	B	*	mg/L	0.00005	0.0003	07/08/15 17:55	mfm
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/09/15 20:18	jjc
Boron, dissolved	M200.7 ICP	1	0.04	B	*	mg/L	0.01	0.05	07/10/15 12:12	aeb
Cadmium, dissolved	M200.8 ICP-MS	1	0.0025		*	mg/L	0.0001	0.0005	07/08/15 17:55	mfm
Calcium, dissolved	M200.7 ICP	1	10.4		*	mg/L	0.1	0.5	07/09/15 20:18	jjc
Chromium, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	07/09/15 20:18	jjc
Cobalt, dissolved	M200.7 ICP	1	0.04	B	*	mg/L	0.01	0.05	07/09/15 20:18	jjc
Copper, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	07/09/15 20:18	jjc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/09/15 20:18	jjc
Iron, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.05	07/09/15 20:18	jjc
Lead, dissolved	M200.8 ICP-MS	1	0.0021		*	mg/L	0.0001	0.0005	07/08/15 17:55	mfm
Lithium, dissolved	M200.7 ICP	1	0.013	B	*	mg/L	0.008	0.04	07/09/15 20:18	jjc
Magnesium, dissolved	M200.7 ICP	1	1.2		*	mg/L	0.2	1	07/09/15 20:18	jjc
Manganese, dissolved	M200.7 ICP	1	0.269		*	mg/L	0.005	0.03	07/09/15 20:18	jjc
Mercury, dissolved	M245.1 CVAA	1		U	*	mg/L	0.0002	0.001	07/15/15 9:12	nco
Molybdenum, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.1	07/09/15 20:18	jjc
Nickel, dissolved	M200.7 ICP	1		U	*	mg/L	0.008	0.04	07/09/15 20:18	jjc
Potassium, dissolved	M200.7 ICP	1	4.9		*	mg/L	0.2	1	07/09/15 20:18	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/09/15 20:18	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0022		*	mg/L	0.0001	0.0003	07/08/15 17:55	mfm
Silver, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.03	07/10/15 12:12	aeb
Sodium, dissolved	M200.7 ICP	1	9.3		*	mg/L	0.2	1	07/09/15 20:18	jjc
Strontium, dissolved	M200.7 ICP	1	6.920		*	mg/L	0.005	0.03	07/09/15 20:18	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/08/15 17:55	mfm
Tin, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/09/15 20:18	jjc
Titanium, dissolved	M200.7 ICP	1		U	*	mg/L	0.005	0.03	07/09/15 20:18	jjc
Vanadium, dissolved	M200.7 ICP	1	0.005	B	*	mg/L	0.005	0.03	07/09/15 20:18	jjc
Zinc, dissolved	M200.7 ICP	1	0.24		*	mg/L	0.01	0.05	07/09/15 20:18	jjc

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/900-1700/KINETIC C-WEEK 0

ACZ Sample ID: **L25103-02**

Date Sampled: 07/07/15 17:00

Date Received: 06/24/15

Sample Matrix: Leachate

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity--Humidity Cell Test	SM2510B	1	155		*	umhos/cm	1	10	07/06/15 16:12	cra
End of leach volumes and mass	D5744-12									
Interstitial Weight		1	155			g			07/06/15 0:00	pta
Leachate Volume Added		1	1000			mL			07/06/15 0:00	pta
Leachate Volume Recovered		1	895			g			07/06/15 0:00	pta
Oxidation Reduction Potential (Eh)	D1498-08	1	439		*	mv	1	1	07/06/15 13:16	cra
pH, Humidity Cell Test	M9045D/M9040C									
pH		1	6.0			units	0.1	0.1	07/06/15 0:00	cra
pH measured at		1	22.2			C	0.1	0.1	07/06/15 0:00	cra

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acidity as CaCO ₃	SM2310B - Titration	1		U	*	mg/L	10	20	07/15/15 12:30	enb
Alkalinity as CaCO ₃	SM2320B - Titration									
Bicarbonate as CaCO ₃		1	6.0	B	*	mg/L	2	20	07/08/15 0:00	enb
Carbonate as CaCO ₃		1		U	*	mg/L	2	20	07/08/15 0:00	enb
Hydroxide as CaCO ₃		1		U	*	mg/L	2	20	07/08/15 0:00	enb
Total Alkalinity		1	6.0	B	*	mg/L	2	20	07/08/15 0:00	enb
Sulfate	D516-02/-07 - Turbidimetric	5	38.2		*	mg/L	5	25	07/08/15 14:31	mss2

Arizona license number: **AZ0102**

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/900-1700/KINETIC C-WEEK 1

ACZ Sample ID: **L25103-03**

Date Sampled: 07/14/15 17:00

Date Received: 06/24/15

Sample Matrix: Leachate

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1	0.35		*	mg/L	0.03	0.2	07/15/15 15:52	aeb
Antimony, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0004	0.002	07/17/15 15:16	mfm
Arsenic, dissolved	M200.8 ICP-MS	1	0.0002	B	*	mg/L	0.0002	0.001	07/17/15 15:16	mfm
Barium, dissolved	M200.7 ICP	1	0.119		*	mg/L	0.003	0.02	07/15/15 15:52	aeb
Beryllium, dissolved	M200.8 ICP-MS	1	0.00016	B	*	mg/L	0.00005	0.0003	07/20/15 21:47	msh
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/15/15 15:52	aeb
Boron, dissolved	M200.7 ICP	1	0.03	B	*	mg/L	0.01	0.05	07/15/15 15:52	aeb
Cadmium, dissolved	M200.8 ICP-MS	1	0.0022		*	mg/L	0.0001	0.0005	07/17/15 15:16	mfm
Calcium, dissolved	M200.7 ICP	1	8.7		*	mg/L	0.1	0.5	07/15/15 15:52	aeb
Chromium, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	07/15/15 15:52	aeb
Cobalt, dissolved	M200.7 ICP	1	0.03	B	*	mg/L	0.01	0.05	07/16/15 17:08	aeb
Copper, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	07/15/15 15:52	aeb
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/15/15 15:52	aeb
Iron, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.05	07/15/15 15:52	aeb
Lead, dissolved	M200.8 ICP-MS	1	0.0077		*	mg/L	0.0001	0.0005	07/17/15 15:16	mfm
Lithium, dissolved	M200.7 ICP	1	0.009	B	*	mg/L	0.008	0.04	07/15/15 15:52	aeb
Magnesium, dissolved	M200.7 ICP	1	1		*	mg/L	0.2	1	07/15/15 15:52	aeb
Manganese, dissolved	M200.7 ICP	1	0.391		*	mg/L	0.005	0.03	07/15/15 15:52	aeb
Mercury, dissolved	M245.1 CVAA	1		U	*	mg/L	0.0002	0.001	07/21/15 16:24	nco
Molybdenum, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.1	07/15/15 15:52	aeb
Nickel, dissolved	M200.7 ICP	1	0.008	B	*	mg/L	0.008	0.04	07/15/15 15:52	aeb
Potassium, dissolved	M200.7 ICP	1	2.8		*	mg/L	0.2	1	07/15/15 15:52	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/15/15 15:52	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0020		*	mg/L	0.0001	0.0003	07/20/15 21:47	msh
Silver, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.03	07/15/15 15:52	aeb
Sodium, dissolved	M200.7 ICP	1	5.5		*	mg/L	0.2	1	07/15/15 15:52	aeb
Strontium, dissolved	M200.7 ICP	1	4.800		*	mg/L	0.005	0.03	07/15/15 15:52	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/17/15 15:16	mfm
Tin, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/15/15 15:52	aeb
Titanium, dissolved	M200.7 ICP	1		U	*	mg/L	0.005	0.03	07/15/15 15:52	aeb
Vanadium, dissolved	M200.7 ICP	1		U	*	mg/L	0.005	0.03	07/15/15 15:52	aeb
Zinc, dissolved	M200.7 ICP	1	0.25		*	mg/L	0.01	0.05	07/15/15 15:52	aeb

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/900-1700/KINETIC C-WEEK 1

ACZ Sample ID: **L25103-03**

Date Sampled: 07/14/15 17:00

Date Received: 06/24/15

Sample Matrix: Leachate

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity--Humidity Cell Test	SM2510B	1	118		*	umhos/cm	1	10	07/13/15 15:32	pta
End of leach volumes and mass	D5744-12									
Interstitial Weight		1	101			g			07/14/15 0:00	arc
Leachate Volume Added		1	1000			mL			07/14/15 0:00	arc
Leachate Volume Recovered		1	902			g			07/14/15 0:00	arc
Oxidation Reduction Potential (Eh)	D1498-08	1	408		*	mv	1	1	07/13/15 15:30	pta
pH, Humidity Cell Test	M9045D/M9040C									
pH		1	5.5			units	0.1	0.1	07/13/15 0:00	pta
pH measured at		1	22.2			C	0.1	0.1	07/13/15 0:00	pta

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acidity as CaCO ₃	SM2310B - Titration	1		U	*	mg/L	10	20	07/24/15 13:54	enb
Alkalinity as CaCO ₃	SM2320B - Titration									
Bicarbonate as CaCO ₃		1		U	*	mg/L	2	20	07/15/15 0:00	abd
Carbonate as CaCO ₃		1		U	*	mg/L	2	20	07/15/15 0:00	abd
Hydroxide as CaCO ₃		1		U	*	mg/L	2	20	07/15/15 0:00	abd
Total Alkalinity		1		U	*	mg/L	2	20	07/15/15 0:00	abd
Sulfate	D516-02/-07 - Turbidimetric	1	38.5		*	mg/L	1	5	07/15/15 13:04	bsu

Arizona license number: **AZ0102**

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/900-1700/KINETIC C-WEEK 2

ACZ Sample ID: **L25103-04**

Date Sampled: 07/21/15 17:00

Date Received: 06/24/15

Sample Matrix: Leachate

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0002	0.001	07/22/15 11:54	mfm
Cadmium, dissolved	M200.8 ICP-MS	1	0.0016		*	mg/L	0.0001	0.0005	07/23/15 18:17	mfm
Copper, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	07/22/15 21:16	jjc
Iron, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.05	07/22/15 21:16	jjc
Lead, dissolved	M200.8 ICP-MS	1	0.0064		*	mg/L	0.0001	0.0005	07/23/15 18:17	mfm
Zinc, dissolved	M200.7 ICP	1	0.23		*	mg/L	0.01	0.05	07/22/15 21:16	jjc

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity--Humidity Cell Test	SM2510B	1	82.1		*	umhos/cm	1	10	07/20/15 15:21	arc
End of leach volumes and mass	D5744-12									
Interstitial Weight		1	109			g			07/21/15 0:00	arc
Leachate Volume Added		1	1000			mL			07/21/15 0:00	arc
Leachate Volume Recovered		1	989			g			07/21/15 0:00	arc
Oxidation Reduction Potential (Eh)	D1498-08	1	393		*	mv	1	1	07/20/15 15:48	arc
pH, Humidity Cell Test	M9045D/M9040C									
pH		1	5.4			units	0.1	0.1	07/20/15 0:00	arc
pH measured at		1	22.3			C	0.1	0.1	07/20/15 0:00	arc

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acidity as CaCO ₃	SM2310B - Titration	1		U	*	mg/L	10	20	07/24/15 14:08	enb
Alkalinity as CaCO ₃	SM2320B - Titration									
Bicarbonate as CaCO ₃		1		U	*	mg/L	2	20	07/22/15 0:00	abd
Carbonate as CaCO ₃		1		U	*	mg/L	2	20	07/22/15 0:00	abd
Hydroxide as CaCO ₃		1		U	*	mg/L	2	20	07/22/15 0:00	abd
Total Alkalinity		1		U	*	mg/L	2	20	07/22/15 0:00	abd
Sulfate	D516-02/-07 - Turbidimetric	1	25.9		*	mg/L	1	5	07/22/15 12:20	bsu

Arizona license number: **AZ0102**

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/900-1700/KINETIC C-WEEK 3

ACZ Sample ID: **L25103-05**

Date Sampled: 07/28/15 17:00

Date Received: 06/24/15

Sample Matrix: Leachate

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0002	0.001	07/29/15 21:12	mfm
Cadmium, dissolved	M200.8 ICP-MS	1	0.0015		*	mg/L	0.0001	0.0005	07/29/15 21:12	mfm
Copper, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	07/29/15 12:22	aeb
Iron, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.05	07/29/15 12:22	aeb
Lead, dissolved	M200.8 ICP-MS	1	0.0100		*	mg/L	0.0001	0.0005	07/29/15 21:12	mfm
Zinc, dissolved	M200.7 ICP	1	0.22		*	mg/L	0.01	0.05	07/29/15 12:22	aeb

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity--Humidity Cell Test	SM2510B	1	75.8		*	umhos/cm	1	10	07/27/15 14:32	arc
End of leach volumes and mass	D5744-12									
Interstitial Weight		1	97			g			07/28/15 0:00	arc
Leachate Volume Added		1	1000			mL			07/28/15 0:00	arc
Leachate Volume Recovered		1	897			g			07/28/15 0:00	arc
Oxidation Reduction Potential (Eh)	D1498-08	1	494		*	mv	1	1	07/27/15 15:42	arc
pH, Humidity Cell Test	M9045D/M9040C									
pH		1	5.2			units	0.1	0.1	07/27/15 0:00	arc
pH measured at		1	20.8			C	0.1	0.1	07/27/15 0:00	arc

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acidity as CaCO ₃	SM2310B - Titration	1		U	*	mg/L	10	20	07/29/15 17:22	enb
Alkalinity as CaCO ₃	SM2320B - Titration									
Bicarbonate as CaCO ₃		1		U	*	mg/L	2	20	07/29/15 0:00	abd
Carbonate as CaCO ₃		1		U	*	mg/L	2	20	07/29/15 0:00	abd
Hydroxide as CaCO ₃		1		U	*	mg/L	2	20	07/29/15 0:00	abd
Total Alkalinity		1		U	*	mg/L	2	20	07/29/15 0:00	abd
Sulfate	D516-02/-07 - Turbidimetric	1	24.2		*	mg/L	1	5	07/29/15 13:40	bsu

Arizona license number: **AZ0102**

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/900-1700/KINETIC C-WEEK 4

ACZ Sample ID: **L25103-06**

Date Sampled: 08/04/15 17:00

Date Received: 06/24/15

Sample Matrix: Leachate

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0002	0.001	08/05/15 15:44	mfm
Cadmium, dissolved	M200.8 ICP-MS	1	0.0017		*	mg/L	0.0001	0.0005	08/05/15 15:44	mfm
Copper, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	08/05/15 15:49	jjc
Iron, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.05	08/05/15 15:49	jjc
Lead, dissolved	M200.8 ICP-MS	1	0.0133		*	mg/L	0.0001	0.0005	08/05/15 15:44	mfm
Zinc, dissolved	M200.7 ICP	1	0.24		*	mg/L	0.01	0.05	08/05/15 15:49	jjc

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity--Humidity Cell Test	SM2510B	1	70.8		*	umhos/cm	1	10	08/03/15 15:21	arc
End of leach volumes and mass	D5744-12									
Interstitial Weight		1	96			g			08/04/15 0:00	arc
Leachate Volume Added		1	1000			mL			08/04/15 0:00	arc
Leachate Volume Recovered		1	900			g			08/04/15 0:00	arc
Oxidation Reduction Potential (Eh)	D1498-08	1	453		*	mv	1	1	08/03/15 15:48	arc
pH, Humidity Cell Test	M9045D/M9040C									
pH		1	5.2			units	0.1	0.1	08/03/15 0:00	arc
pH measured at		1	21.8			C	0.1	0.1	08/03/15 0:00	arc

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acidity as CaCO ₃	SM2310B - Titration	1	12	B	*	mg/L	10	20	08/07/15 10:52	id
Alkalinity as CaCO ₃	SM2320B - Titration									
Bicarbonate as CaCO ₃		1		U	*	mg/L	2	20	08/05/15 0:00	abd
Carbonate as CaCO ₃		1		U	*	mg/L	2	20	08/05/15 0:00	abd
Hydroxide as CaCO ₃		1		U	*	mg/L	2	20	08/05/15 0:00	abd
Total Alkalinity		1		U	*	mg/L	2	20	08/05/15 0:00	abd
Sulfate	D516-02/-07 - Turbidimetric	1	23.2		*	mg/L	1	5	08/06/15 12:49	bsu

Arizona license number: **AZ0102**

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/900-1700/KINETIC C-WEEK 5

ACZ Sample ID: **L25103-07**

Date Sampled: 08/11/15 17:00

Date Received: 06/24/15

Sample Matrix: Leachate

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0002	0.001	08/12/15 18:41	mfm
Cadmium, dissolved	M200.8 ICP-MS	1	0.0017		*	mg/L	0.0001	0.0005	08/17/15 21:41	msh
Copper, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	08/12/15 20:25	aeb
Iron, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.05	08/13/15 15:18	aeb
Lead, dissolved	M200.8 ICP-MS	1	0.0173		*	mg/L	0.0001	0.0005	08/13/15 19:00	mfm
Zinc, dissolved	M200.7 ICP	1	0.29		*	mg/L	0.01	0.05	08/12/15 20:25	aeb

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity--Humidity Cell Test	SM2510B	1	67.1		*	umhos/cm	1	10	08/10/15 15:21	arc
End of leach volumes and mass	D5744-12									
Interstitial Weight		1	93			g			08/11/15 0:00	arc
Leachate Volume Added		1	1000			mL			08/11/15 0:00	arc
Leachate Volume Recovered		1	901			g			08/11/15 0:00	arc
Oxidation Reduction Potential (Eh)	D1498-08	1	511		*	mv	1	1	08/10/15 15:48	arc
pH, Humidity Cell Test	M9045D/M9040C									
pH		1	5.2			units	0.1	0.1	08/10/15 0:00	arc
pH measured at		1	21.0			C	0.1	0.1	08/10/15 0:00	arc

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acidity as CaCO ₃	SM2310B - Titration	1	10	B	*	mg/L	10	20	08/19/15 12:54	tms
Alkalinity as CaCO ₃	SM2320B - Titration									
Bicarbonate as CaCO ₃		1		U	*	mg/L	2	20	08/14/15 0:00	abd
Carbonate as CaCO ₃		1		U	*	mg/L	2	20	08/14/15 0:00	abd
Hydroxide as CaCO ₃		1		U	*	mg/L	2	20	08/14/15 0:00	abd
Total Alkalinity		1		U	*	mg/L	2	20	08/14/15 0:00	abd
Sulfate	D516-02/-07 - Turbidimetric	1	24.2		*	mg/L	1	5	08/12/15 12:06	bsu

Arizona license number: **AZ0102**

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/900-1700/KINETIC C-WEEK 6

ACZ Sample ID: **L25103-08**

Date Sampled: 08/18/15 17:00

Date Received: 06/24/15

Sample Matrix: Leachate

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1	0.51		*	mg/L	0.03	0.2	08/26/15 16:57	aeb
Antimony, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0004	0.002	08/19/15 11:59	mfm
Arsenic, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0002	0.001	08/19/15 11:59	mfm
Barium, dissolved	M200.7 ICP	1	0.075		*	mg/L	0.003	0.02	08/26/15 16:57	aeb
Beryllium, dissolved	M200.8 ICP-MS	1	0.00045		*	mg/L	0.00005	0.0003	08/21/15 12:43	msh
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/26/15 16:57	aeb
Boron, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	08/26/15 16:57	aeb
Cadmium, dissolved	M200.8 ICP-MS	1	0.0017		*	mg/L	0.0001	0.0005	08/21/15 12:43	msh
Calcium, dissolved	M200.7 ICP	1	6.2		*	mg/L	0.1	0.5	08/26/15 16:57	aeb
Chromium, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	08/26/15 16:57	aeb
Cobalt, dissolved	M200.7 ICP	1	0.02	B	*	mg/L	0.01	0.05	08/27/15 17:57	aeb
Copper, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	08/26/15 16:57	aeb
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/26/15 16:57	aeb
Iron, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.05	08/26/15 16:57	aeb
Lead, dissolved	M200.8 ICP-MS	1	0.0193		*	mg/L	0.0001	0.0005	08/21/15 12:43	msh
Lithium, dissolved	M200.7 ICP	1		U	*	mg/L	0.008	0.04	08/26/15 16:57	aeb
Magnesium, dissolved	M200.7 ICP	1	0.7	B	*	mg/L	0.2	1	08/26/15 16:57	aeb
Manganese, dissolved	M200.7 ICP	1	0.730		*	mg/L	0.005	0.03	08/26/15 16:57	aeb
Mercury, dissolved	M245.1 CVAA	1		U	*	mg/L	0.0002	0.001	08/24/15 12:34	mfm
Molybdenum, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.1	08/26/15 16:57	aeb
Nickel, dissolved	M200.7 ICP	1		U	*	mg/L	0.008	0.04	08/26/15 16:57	aeb
Potassium, dissolved	M200.7 ICP	1	1.7		*	mg/L	0.2	1	08/26/15 16:57	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/26/15 16:57	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0017		*	mg/L	0.0001	0.0003	08/19/15 11:59	mfm
Silver, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.03	08/27/15 17:57	aeb
Sodium, dissolved	M200.7 ICP	1	0.9	B	*	mg/L	0.2	1	08/26/15 16:57	aeb
Strontium, dissolved	M200.7 ICP	1	4.210		*	mg/L	0.005	0.03	08/26/15 16:57	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	08/19/15 11:59	mfm
Tin, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/26/15 16:57	aeb
Titanium, dissolved	M200.7 ICP	1		U	*	mg/L	0.005	0.03	08/26/15 16:57	aeb
Vanadium, dissolved	M200.7 ICP	1		U	*	mg/L	0.005	0.03	08/26/15 16:57	aeb
Zinc, dissolved	M200.7 ICP	1	0.35		*	mg/L	0.01	0.05	08/26/15 16:57	aeb

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/900-1700/KINETIC C-WEEK 6

ACZ Sample ID: **L25103-08**

Date Sampled: 08/18/15 17:00

Date Received: 06/24/15

Sample Matrix: Leachate

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity--Humidity Cell Test	SM2510B	1	74.4		*	umhos/cm	1	10	08/17/15 15:21	arc
End of leach volumes and mass	D5744-12									
Interstitial Weight		1	96			g			08/18/15 0:00	arc
Leachate Volume Added		1	1000			mL			08/18/15 0:00	arc
Leachate Volume Recovered		1	899			g			08/18/15 0:00	arc
Oxidation Reduction Potential (Eh)	D1498-08	1	482		*	mv	1	1	08/17/15 15:48	arc
pH, Humidity Cell Test	M9045D/M9040C									
pH		1	5.3			units	0.1	0.1	08/17/15 0:00	arc
pH measured at		1	21.3			C	0.1	0.1	08/17/15 0:00	arc

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acidity as CaCO3	SM2310B - Titration	1	14	B	*	mg/L	10	20	08/27/15 14:31	tms
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1		U	*	mg/L	2	20	08/19/15 0:00	abd
Carbonate as CaCO3		1		U	*	mg/L	2	20	08/19/15 0:00	abd
Hydroxide as CaCO3		1		U	*	mg/L	2	20	08/19/15 0:00	abd
Total Alkalinity		1		U	*	mg/L	2	20	08/19/15 0:00	abd
Sulfate	D516-02/-07 - Turbidimetric	1	24.1		*	mg/L	1	5	08/20/15 11:57	bsu

Arizona license number: **AZ0102**

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/900-1700/KINETIC C-WEEK 7

ACZ Sample ID: **L25103-09**

Date Sampled: 08/25/15 17:00

Date Received: 06/24/15

Sample Matrix: Leachate

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0002	0.001	08/26/15 17:47	mfm
Cadmium, dissolved	M200.8 ICP-MS	1	0.0020		*	mg/L	0.0001	0.0005	08/26/15 17:47	mfm
Copper, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	08/26/15 19:08	jjc
Iron, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.05	08/26/15 19:08	jjc
Lead, dissolved	M200.8 ICP-MS	1	0.0252		*	mg/L	0.0001	0.0005	08/26/15 17:47	mfm
Zinc, dissolved	M200.7 ICP	1	0.41		*	mg/L	0.01	0.05	08/26/15 19:08	jjc

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity--Humidity Cell Test	SM2510B	1	68.7		*	umhos/cm	1	10	08/24/15 14:45	arc
End of leach volumes and mass	D5744-12									
Interstitial Weight		1	88			g			08/25/15 0:00	arc
Leachate Volume Added		1	1000			mL			08/25/15 0:00	arc
Leachate Volume Recovered		1	906			g			08/25/15 0:00	arc
Oxidation Reduction Potential (Eh)	D1498-08	1	384		*	mv	1	1	08/24/15 15:18	arc
pH, Humidity Cell Test	M9045D/M9040C									
pH		1	5.1			units	0.1	0.1	08/24/15 0:00	arc
pH measured at		1	20.9			C	0.1	0.1	08/24/15 0:00	arc

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acidity as CaCO ₃	SM2310B - Titration	1	10	B	*	mg/L	10	20	09/07/15 11:02	sck
Alkalinity as CaCO ₃	SM2320B - Titration									
Bicarbonate as CaCO ₃		1		U	*	mg/L	2	20	09/02/15 0:00	tms
Carbonate as CaCO ₃		1		U	*	mg/L	2	20	09/02/15 0:00	tms
Hydroxide as CaCO ₃		1		U	*	mg/L	2	20	09/02/15 0:00	tms
Total Alkalinity		1		U	*	mg/L	2	20	09/02/15 0:00	tms
Sulfate	D516-02/-07 - Turbidimetric	1	19.3			mg/L	1	5	08/27/15 13:32	mss2

Arizona license number: **AZ0102**

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/900-1700/KINETIC C-WEEK 8

ACZ Sample ID: **L25103-10**

Date Sampled: 09/01/15 17:00

Date Received: 06/24/15

Sample Matrix: Leachate

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0002	0.001	09/04/15 17:32	msh
Cadmium, dissolved	M200.8 ICP-MS	1	0.0020		*	mg/L	0.0001	0.0005	09/04/15 17:32	msh
Copper, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	09/04/15 22:41	aeb
Iron, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.05	09/04/15 22:41	aeb
Lead, dissolved	M200.8 ICP-MS	1	0.0288		*	mg/L	0.0001	0.0005	09/04/15 17:32	msh
Zinc, dissolved	M200.7 ICP	1	0.43		*	mg/L	0.01	0.05	09/04/15 22:41	aeb

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity--Humidity Cell Test	SM2510B	1	67.9		*	umhos/cm	1	10	09/01/15 14:45	arc
End of leach volumes and mass	D5744-12									
Interstitial Weight		1	89			g			08/31/15 0:00	arc
Leachate Volume Added		1	1000			mL			08/31/15 0:00	arc
Leachate Volume Recovered		1	905			g			08/31/15 0:00	arc
Oxidation Reduction Potential (Eh)	D1498-08	1	408		*	mv	1	1	09/01/15 15:18	arc
pH, Humidity Cell Test	M9045D/M9040C									
pH		1	5.0			units	0.1	0.1	09/01/15 0:00	arc
pH measured at		1	20.3			C	0.1	0.1	09/01/15 0:00	arc

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acidity as CaCO ₃	SM2310B - Titration	1	16	B	*	mg/L	10	20	09/10/15 12:14	tms
Alkalinity as CaCO ₃	SM2320B - Titration									
Bicarbonate as CaCO ₃		1		U	*	mg/L	2	20	09/10/15 0:00	enb
Carbonate as CaCO ₃		1		U	*	mg/L	2	20	09/10/15 0:00	enb
Hydroxide as CaCO ₃		1		U	*	mg/L	2	20	09/10/15 0:00	enb
Total Alkalinity		1		U	*	mg/L	2	20	09/10/15 0:00	enb
Sulfate	D516-02/-07 - Turbidimetric	1	24.2		*	mg/L	1	5	09/03/15 11:22	bsu

Arizona license number: **AZ0102**

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/900-1700/KINETIC C-WEEK 9

ACZ Sample ID: **L25103-11**

Date Sampled: 09/08/15 17:00

Date Received: 06/24/15

Sample Matrix: Leachate

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0002	0.001	09/11/15 12:49	mfm
Cadmium, dissolved	M200.8 ICP-MS	1	0.0023		*	mg/L	0.0001	0.0005	09/11/15 12:49	mfm
Copper, dissolved	M200.7 ICP	1	0.02	B	*	mg/L	0.01	0.05	09/15/15 11:17	aeb
Iron, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.05	09/15/15 11:17	aeb
Lead, dissolved	M200.8 ICP-MS	1	0.0330		*	mg/L	0.0001	0.0005	09/11/15 12:49	mfm
Zinc, dissolved	M200.7 ICP	1	0.50		*	mg/L	0.01	0.05	09/15/15 11:17	aeb

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity--Humidity Cell Test	SM2510B	1	76.5		*	umhos/cm	1	10	09/07/15 14:45	arc
End of leach volumes and mass	D5744-12									
Interstitial Weight		1	77			g			09/08/15 0:00	arc
Leachate Volume Added		1	1000			mL			09/08/15 0:00	arc
Leachate Volume Recovered		1	915			g			09/08/15 0:00	arc
Oxidation Reduction Potential (Eh)	D1498-08	1	423		*	mv	1	1	09/07/15 15:18	arc
pH, Humidity Cell Test	M9045D/M9040C									
pH		1	5.0			units	0.1	0.1	09/07/15 0:00	arc
pH measured at		1	20.9			C	0.1	0.1	09/07/15 0:00	arc

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acidity as CaCO ₃	SM2310B - Titration	1	12	B	*	mg/L	10	20	09/16/15 14:13	enb
Alkalinity as CaCO ₃	SM2320B - Titration									
Bicarbonate as CaCO ₃		1		U	*	mg/L	2	20	09/10/15 0:00	enb
Carbonate as CaCO ₃		1		U	*	mg/L	2	20	09/10/15 0:00	enb
Hydroxide as CaCO ₃		1		U	*	mg/L	2	20	09/10/15 0:00	enb
Total Alkalinity		1		U	*	mg/L	2	20	09/10/15 0:00	enb
Sulfate	D516-02/-07 - Turbidimetric	1	27.2			mg/L	1	5	09/10/15 12:53	mss2

Arizona license number: **AZ0102**

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/900-1700/KINETIC C-WEEK10

ACZ Sample ID: **L25103-12**

Date Sampled: 09/15/15 17:00

Date Received: 06/24/15

Sample Matrix: Leachate

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0002	0.001	09/17/15 18:37	mfm
Cadmium, dissolved	M200.8 ICP-MS	1	0.0022		*	mg/L	0.0001	0.0005	09/17/15 18:37	mfm
Copper, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	09/18/15 21:42	aeb
Iron, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.05	09/18/15 21:42	aeb
Lead, dissolved	M200.8 ICP-MS	1	0.0314		*	mg/L	0.0001	0.0005	09/18/15 21:25	mfm
Zinc, dissolved	M200.7 ICP	1	0.47		*	mg/L	0.01	0.05	09/18/15 21:42	aeb

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity--Humidity Cell Test	SM2510B	1	69.9		*	umhos/cm	1	10	09/14/15 14:45	arc
End of leach volumes and mass	D5744-12									
Interstitial Weight		1	77			g			09/15/15 0:00	arc
Leachate Volume Added		1	1000			mL			09/15/15 0:00	arc
Leachate Volume Recovered		1	915			g			09/15/15 0:00	arc
Oxidation Reduction Potential (Eh)	D1498-08	1	330		*	mv	1	1	09/14/15 15:12	arc
pH, Humidity Cell Test	M9045D/M9040C									
pH		1	5.0			units	0.1	0.1	09/14/15 0:00	arc
pH measured at		1	20.7			C	0.1	0.1	09/14/15 0:00	arc

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acidity as CaCO ₃	SM2310B - Titration	1	10	B	*	mg/L	10	20	09/25/15 13:08	sck
Alkalinity as CaCO ₃	SM2320B - Titration									
Bicarbonate as CaCO ₃		1		U	*	mg/L	2	20	09/23/15 0:00	enb
Carbonate as CaCO ₃		1		U	*	mg/L	2	20	09/23/15 0:00	enb
Hydroxide as CaCO ₃		1		U	*	mg/L	2	20	09/23/15 0:00	enb
Total Alkalinity		1		U	*	mg/L	2	20	09/23/15 0:00	enb
Sulfate	D516-02/-07 - Turbidimetric	1	21.2			mg/L	1	5	09/17/15 11:19	mss2

Arizona license number: **AZ0102**

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/900-1700/KINETIC C-WEEK11

ACZ Sample ID: **L25103-13**

Date Sampled: 09/22/15 17:00

Date Received: 06/24/15

Sample Matrix: Leachate

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0002	0.001	09/23/15 12:53	mfm
Cadmium, dissolved	M200.8 ICP-MS	1	0.0019		*	mg/L	0.0001	0.0005	09/23/15 12:53	mfm
Copper, dissolved	M200.7 ICP	1	0.01	B	*	mg/L	0.01	0.05	09/25/15 17:05	aeb
Iron, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.05	09/25/15 17:05	aeb
Lead, dissolved	M200.8 ICP-MS	1	0.0329		*	mg/L	0.0001	0.0005	09/23/15 12:53	mfm
Zinc, dissolved	M200.7 ICP	1	0.46		*	mg/L	0.01	0.05	09/25/15 17:05	aeb

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity--Humidity Cell Test	SM2510B	1	61.7		*	umhos/cm	1	10	09/21/15 14:45	arc
End of leach volumes and mass	D5744-12									
Interstitial Weight		1	84			g			09/21/15 0:00	arc
Leachate Volume Added		1	1000			mL			09/21/15 0:00	arc
Leachate Volume Recovered		1	909			g			09/21/15 0:00	arc
Oxidation Reduction Potential (Eh)	D1498-08	1	240		*	mv	1	1	09/21/15 15:12	arc
pH, Humidity Cell Test	M9045D/M9040C									
pH		1	5.1			units	0.1	0.1	09/21/15 0:00	arc
pH measured at		1	20.0			C	0.1	0.1	09/21/15 0:00	arc

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acidity as CaCO ₃	SM2310B - Titration	1	12	B	*	mg/L	10	20	09/29/15 14:10	enb
Alkalinity as CaCO ₃	SM2320B - Titration									
Bicarbonate as CaCO ₃		1		U	*	mg/L	2	20	09/28/15 0:00	enb
Carbonate as CaCO ₃		1		U	*	mg/L	2	20	09/28/15 0:00	enb
Hydroxide as CaCO ₃		1		U	*	mg/L	2	20	09/28/15 0:00	enb
Total Alkalinity		1		U	*	mg/L	2	20	09/28/15 0:00	enb
Sulfate	D516-02/-07 - Turbidimetric	1	22.0			mg/L	1	5	09/28/15 11:30	mss2

Arizona license number: **AZ0102**

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/900-1700/KINETIC C-WEEK12

ACZ Sample ID: **L25103-14**

Date Sampled: 09/29/15 17:00

Date Received: 06/24/15

Sample Matrix: Leachate

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1	1.04		*	mg/L	0.03	0.2	10/02/15 23:49	aeb
Antimony, dissolved	M200.8 ICP-MS	1	0.0007	B	*	mg/L	0.0004	0.002	10/02/15 18:44	mfm
Arsenic, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0002	0.001	10/01/15 15:25	mfm
Barium, dissolved	M200.7 ICP	1	0.069		*	mg/L	0.003	0.02	10/02/15 23:49	aeb
Beryllium, dissolved	M200.8 ICP-MS	1	0.00098		*	mg/L	0.00005	0.0003	10/01/15 15:25	mfm
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	10/02/15 23:49	aeb
Boron, dissolved	M200.7 ICP	1	0.01	B	*	mg/L	0.01	0.05	10/02/15 23:49	aeb
Cadmium, dissolved	M200.8 ICP-MS	1	0.0018		*	mg/L	0.0001	0.0005	10/01/15 15:25	mfm
Calcium, dissolved	M200.7 ICP	1	5.2		*	mg/L	0.1	0.5	10/02/15 23:49	aeb
Chromium, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	10/02/15 23:49	aeb
Cobalt, dissolved	M200.7 ICP	1	0.03	B	*	mg/L	0.01	0.05	10/03/15 21:40	aeb
Copper, dissolved	M200.7 ICP	1	0.02	B	*	mg/L	0.01	0.05	10/02/15 23:49	aeb
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	10/02/15 23:49	aeb
Iron, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.05	10/02/15 23:49	aeb
Lead, dissolved	M200.8 ICP-MS	1	0.0349		*	mg/L	0.0001	0.0005	10/01/15 15:25	mfm
Lithium, dissolved	M200.7 ICP	1		U	*	mg/L	0.008	0.04	10/02/15 23:49	aeb
Magnesium, dissolved	M200.7 ICP	1	0.6	B	*	mg/L	0.2	1	10/02/15 23:49	aeb
Manganese, dissolved	M200.7 ICP	1	1.210		*	mg/L	0.005	0.03	10/02/15 23:49	aeb
Mercury, dissolved	M245.1 CVAA	1		U	*	mg/L	0.0002	0.001	10/02/15 13:48	pta
Molybdenum, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.1	10/02/15 23:49	aeb
Nickel, dissolved	M200.7 ICP	1	0.015	B	*	mg/L	0.008	0.04	10/02/15 23:49	aeb
Potassium, dissolved	M200.7 ICP	1	1.3		*	mg/L	0.2	1	10/02/15 23:49	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	10/02/15 23:49	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0018		*	mg/L	0.0001	0.0003	10/01/15 15:25	mfm
Silver, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.03	10/02/15 23:49	aeb
Sodium, dissolved	M200.7 ICP	1	0.3	B	*	mg/L	0.2	1	10/02/15 23:49	aeb
Strontium, dissolved	M200.7 ICP	1	3.890		*	mg/L	0.005	0.03	10/02/15 23:49	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	10/01/15 15:25	mfm
Tin, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	10/02/15 23:49	aeb
Titanium, dissolved	M200.7 ICP	1		U	*	mg/L	0.005	0.03	10/02/15 23:49	aeb
Vanadium, dissolved	M200.7 ICP	1		U	*	mg/L	0.005	0.03	10/02/15 23:49	aeb
Zinc, dissolved	M200.7 ICP	1	0.49		*	mg/L	0.01	0.05	10/02/15 23:49	aeb

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/900-1700/KINETIC C-WEEK12

ACZ Sample ID: **L25103-14**

Date Sampled: 09/29/15 17:00

Date Received: 06/24/15

Sample Matrix: Leachate

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity--Humidity Cell Test	SM2510B	1	63.5		*	umhos/cm	1	10	09/28/15 14:45	arc
End of leach volumes and mass	D5744-12									
Interstitial Weight		1	89			g			09/28/15 0:00	arc
Leachate Volume Added		1	1000			mL			09/28/15 0:00	arc
Leachate Volume Recovered		1	905			g			09/28/15 0:00	arc
Oxidation Reduction Potential (Eh)	D1498-08	1	488		*	mv	1	1	09/28/15 15:12	arc
pH, Humidity Cell Test	M9045D/M9040C									
pH		1	5.0			units	0.1	0.1	09/28/15 0:00	arc
pH measured at		1	19.9			C	0.1	0.1	09/28/15 0:00	arc

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acidity as CaCO3	SM2310B - Titration	1	12	B	*	mg/L	10	20	09/30/15 11:26	sck
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1		U	*	mg/L	2	20	10/05/15 0:00	enb
Carbonate as CaCO3		1		U	*	mg/L	2	20	10/05/15 0:00	enb
Hydroxide as CaCO3		1		U	*	mg/L	2	20	10/05/15 0:00	enb
Total Alkalinity		1		U	*	mg/L	2	20	10/05/15 0:00	enb
Sulfate	D516-02/-07 - Turbidimetric	1	23.1		*	mg/L	1	5	10/02/15 9:43	mss2

Arizona license number: **AZ0102**

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/900-1700/KINETIC C-WEEK13

ACZ Sample ID: **L25103-15**

Date Sampled: 10/06/15 17:00

Date Received: 06/24/15

Sample Matrix: Leachate

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0002	0.001	10/07/15 21:24	mfm
Cadmium, dissolved	M200.8 ICP-MS	1	0.0021		*	mg/L	0.0001	0.0005	10/07/15 21:24	mfm
Copper, dissolved	M200.7 ICP	1	0.02	B	*	mg/L	0.01	0.05	10/09/15 21:17	jjc
Iron, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.05	10/09/15 21:17	jjc
Lead, dissolved	M200.8 ICP-MS	1	0.0389		*	mg/L	0.0001	0.0005	10/07/15 21:24	mfm
Zinc, dissolved	WG392121	1	***0.50***		*	mg/L	0.01	0.05	10/10/15 16:05	AREV

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity--Humidity Cell Test	SM2510B	1	64.9		*	umhos/cm	1	10	10/05/15 14:45	arc
End of leach volumes and mass	D5744-12									
Interstitial Weight		1	88			g			10/06/15 0:00	arc
Leachate Volume Added		1	1000			mL			10/06/15 0:00	arc
Leachate Volume Recovered		1	904			g			10/06/15 0:00	arc
Oxidation Reduction Potential (Eh)	D1498-08	1	402		*	mv	1	1	10/05/15 15:12	arc
pH, Humidity Cell Test	M9045D/M9040C									
pH		1	5.0			units	0.1	0.1	10/05/15 0:00	arc
pH measured at		1	20.0			C	0.1	0.1	10/05/15 0:00	arc

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acidity as CaCO ₃			*****							NEED
Alkalinity as CaCO ₃	SM2320B - Titration									
Bicarbonate as CaCO ₃		1		U	*	mg/L	2	20	10/07/15 0:00	enb
Carbonate as CaCO ₃		1		U	*	mg/L	2	20	10/07/15 0:00	enb
Hydroxide as CaCO ₃		1		U	*	mg/L	2	20	10/07/15 0:00	enb
Total Alkalinity		1		U	*	mg/L	2	20	10/07/15 0:00	enb
Sulfate	WG391926	1	***22.9***			mg/L	1	5	10/07/15 15:01	AREV

Arizona license number: **AZ0102**



Report Header Explanations

<i>Batch</i>	A distinct set of samples analyzed at a specific time
<i>Found</i>	Value of the QC Type of interest
<i>Limit</i>	Upper limit for RPD, in %.
<i>Lower</i>	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
<i>MDL</i>	Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #5). Allows for instrument and annual fluctuations.
<i>PCN/SCN</i>	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
<i>PQL</i>	Practical Quantitation Limit. Synonymous with the EPA term "minimum level".
<i>QC</i>	True Value of the Control Sample or the amount added to the Spike
<i>Rec</i>	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
<i>RPD</i>	Relative Percent Difference, calculation used for Duplicate QC Types
<i>Upper</i>	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
<i>Sample</i>	Value of the Sample of interest

QC Sample Types

<i>AS</i>	Analytical Spike (Post Digestion)	<i>LCSWD</i>	Laboratory Control Sample - Water Duplicate
<i>ASD</i>	Analytical Spike (Post Digestion) Duplicate	<i>LFB</i>	Laboratory Fortified Blank
<i>CCB</i>	Continuing Calibration Blank	<i>LFM</i>	Laboratory Fortified Matrix
<i>CCV</i>	Continuing Calibration Verification standard	<i>LFMD</i>	Laboratory Fortified Matrix Duplicate
<i>DUP</i>	Sample Duplicate	<i>LRB</i>	Laboratory Reagent Blank
<i>ICB</i>	Initial Calibration Blank	<i>MS</i>	Matrix Spike
<i>ICV</i>	Initial Calibration Verification standard	<i>MSD</i>	Matrix Spike Duplicate
<i>ICSAB</i>	Inter-element Correction Standard - A plus B solutions	<i>PBS</i>	Prep Blank - Soil
<i>LCSS</i>	Laboratory Control Sample - Soil	<i>PBW</i>	Prep Blank - Water
<i>LCSSD</i>	Laboratory Control Sample - Soil Duplicate	<i>PQV</i>	Practical Quantitation Verification standard
<i>LCSW</i>	Laboratory Control Sample - Water	<i>SDL</i>	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

- (1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
- (2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
- (3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
- (4) EPA SW-846. Test Methods for Evaluating Solid Waste.
- (5) Standard Methods for the Examination of Water and Wastewater.

Comments

- (1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
- (2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
- (3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
- (4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
- (5) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click:

<http://www.acz.com/public/extquallist.pdf>

Adrian Brown Consultants, Inc.

ACZ Project ID: L25103

Date Received: 06/24/2015 09:49

Received By: ear

Date Printed: 6/24/2015

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?	☐	☐	☒
2) Is the Chain of Custody or other directive shipping papers present?	☒	☐	☐
3) Does this project require special handling procedures such as CLP protocol?	☐	☐	☒
4) Are any samples NRC licensable material?	☐	☐	☒
5) If samples are received past hold time, proceed with requested short hold time analyses?	☒	☐	☐
6) Is the Chain of Custody complete and accurate?	☒	☐	☐
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?	☐	☒	☐

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	☒	☐	☐
9) Are all labels on containers and are they intact and legible?	☒	☐	☐
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	☒	☐	☐
11) For preserved bottle types, was the pH checked and within limits? ¹	☐	☐	☒
12) Is there sufficient sample volume to perform all requested work?	☒	☐	☐
13) Is the custody seal intact on all containers?	☐	☐	☒
14) Are samples that require zero headspace acceptable?	☐	☐	☒
15) Are all sample containers appropriate for analytical requirements?	☒	☐	☐
16) Is there an Hg-1631 trip blank present?	☐	☐	☒
17) Is there a VOA trip blank present?	☐	☐	☒
18) Were all samples received within hold time?	☒	☐	☐

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
NA22021	18.7	19	N/A

Was ice present in the shipment container(s)?

No - Wet or gel ice was not present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

Adrian Brown Consultants, Inc.

ACZ Project ID: L25103

Date Received: 06/24/2015 09:49

Received By: ear

Date Printed: 6/24/2015

¹ The preservation of the following bottle types is not checked at sample receipt: Orange (oil and grease), Purple (total cyanide), Pink (dissolved cyanide), Brown (arsenic speciation), Sterile (fecal coliform), EDTA (sulfite), HCl preserved vial (organics), Na₂S₂O₃ preserved vial (organics), and HG-1631 (total/dissolved mercury by method 1631).

Preliminary



Laboratories, Inc. *W5103*

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: JEFFREY WINICK	Address: 1875 LAWRENCE STREET, SUITE 500
Company: SCHLUMBERGER WATER SERV.	DENVER, CO 80215
E-mail: JWINICK@SLB.COM	Telephone: +1.303.244.8224

Copy of Report to:

Name: ADRIAN BROWN	E-mail: abrown@abch2o.com
Company: ADRIAN BROWN CONSULTANTS	Telephone: (303) 698-9080

Invoice to:

Name: ADRIAN BROWN	Address: 130 W 4th Ave
Company: ADRIAN BROWN CONSULTANTS	Denver CO USA 80223
E-mail: lbrown@abch2o.com	Telephone: (303) 698-9080

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES ☐ NO ☐

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified.

Are samples for CO DW Compliance Monitoring? YES ☐ NO ☒

If yes, please include state forms. Results will be reported to PQL.

PROJECT INFORMATION

ANALYSES REQUESTED (attach list or use quote number)

Quote #: CO HYDROGEOCHEMICAL STUDY	# of Containers	LO - HYDROGEOCHEM - PRE-14CT	LO - HYDROGEOCHEM - PRE-14CT									
Project/PO #:												
Reporting state for compliance testing:												
Sampler's Name: ALS Minerals/Jose Gonzalez												
Are any samples NRC licensable material? Yes No												
SAMPLE IDENTIFICATION	DATE:TIME	Matrix										
GHC-15-1/100-300/Static C+	15-June-15	rock	1(kg)	X								
GHC-15-1/300-500/Static C+	15-June-15	rock	1(kg)	X								
GHC-15-1/500-700/Static C+	15-June-15	rock	1(kg)	X								
GHC-15-1/700-900/Static C+	15-June-15	rock	1(kg)	X								
GHC15-1/100-900/Kinetic C+	15-June-15	rock	8(kg)		X							
GHC15-1/900-1100/Static C+	15-June-15	rock	1(kg)	X								
GHC15-1/1100-1300/Static C+	15-June-15:	rock	1(kg)	X								
GHC15-1/1300-1500/Static C+	15-June-15:	rock	1(kg)	X								
GHC15-1/1500-1700/Static C+	15-June-15:	rock	1(kg)	X								
GHC15-1/900-1700/Kinetic C+	15-June-15:	rock	8(kg)		X							

Matrix SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

Please contact Jeff Winick at 303.244.8224 for further instructions

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:

DATE:TIME

RECEIVED BY:

DATE:TIME

<i>Mike [Signature]</i>	<i>6-23-15</i>	<i>ML</i>	<i>6/24/15 0940</i>

August 17, 2015

Report to:

Jeffrey Winick
Schlumberger Water Services
1875 Lawrence Street
Suite 500
Denver, CO 80202

Bill to:

Accounts Payable
Adrian Brown Consultants, Inc.
130 W 4th Avenue
Denver, CO 80223

cc: Adrian Brown

Project ID:

ACZ Project ID: L25227

Jeffrey Winick:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on July 02, 2015. This project has been assigned to ACZ's project number, L25227. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L25227. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after September 16, 2015. If the samples are determined to be hazardous, additional charges apply for disposal (typically \$11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.



Scott Habermehl has reviewed
and approved this report.



Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/2500-2700/STATIC

ACZ Sample ID: **L25227-01**

Date Sampled: 06/29/15 00:00

Date Received: 07/02/15

Sample Matrix: Soil

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acid Generation Potential (calc on Sulfur total)	M600/2-78-054 3.2.4		235			t CaCO3/Kt	0.31	3.1	08/17/15 11:10	calc
Acid Neutralization Potential (calc)	M600/2-78-054 1.3		57.0			t CaCO3/Kt	1	5	08/17/15 11:10	calc
Acid-Base Potential (calc on Sulfur total)	M600/2-78-054 1.3		-178			t CaCO3/Kt			08/17/15 11:10	calc
Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	1	0.6		*	%	0.1	0.5	08/03/15 16:38	cra
Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	1	0.6		*	%	0.1	0.5	08/03/15 16:38	cra
Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	1		U	*	%	0.1	0.5	08/03/15 16:38	cra
Net Acid Generation Procedure	Single NAG - EGI 2002									
NAG		1	26		*	Kg H2SO4/t	1	1	07/30/15 0:00	brd
pH After Oxidation		1	2.6		*	units	0.1	0.1	07/30/15 0:00	brd
Neutralization Potential as CaCO3	M600/2-78-054 3.2.3	1	5.7		*	%	0.1	0.5	08/10/15 12:31	cra
Sulfur Forms	M600/2-78-054 3.2.4-MOD									
Sulfur HCl Residue		1	1.44		*	%	0.01	0.1	08/03/15 0:00	cra
Sulfur HNO3 Residue		1	0.03	B	*	%	0.01	0.1	08/03/15 0:00	cra
Sulfur Organic Residual		1	0.03	B	*	%	0.01	0.1	08/03/15 0:00	cra
Sulfur Pyritic Sulfide		1	1.41		*	%	0.01	0.1	08/03/15 0:00	cra
Sulfur Sulfate		1	6.08		*	%	0.01	0.1	08/03/15 0:00	cra
Sulfur Total		1	7.52		*	%	0.01	0.1	08/03/15 0:00	cra
Total Sulfur minus Sulfate		1	1.44		*	%	0.01	0.1	08/03/15 0:00	cra

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972				*				07/16/15 9:00	brd
Crush and Pulverize (Ring & Puck)	EPA-600/2-78-054 3.1.3				*				07/28/15 8:47	brd

Arizona license number: AZ0102

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/2700-2900/STATIC

ACZ Sample ID: **L25227-02**

Date Sampled: 06/29/15 00:00

Date Received: 07/02/15

Sample Matrix: Soil

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acid Generation Potential (calc on Sulfur total)	M600/2-78-054 3.2.4		173			t CaCO3/Kt	0.31	3.1	08/17/15 11:10	calc
Acid Neutralization Potential (calc)	M600/2-78-054 1.3		75.0			t CaCO3/Kt	1	5	08/17/15 11:10	calc
Acid-Base Potential (calc on Sulfur total)	M600/2-78-054 1.3		-98.1			t CaCO3/Kt			08/17/15 11:10	calc
Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	1	0.9		*	%	0.1	0.5	08/03/15 22:16	cra
Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	1	0.9		*	%	0.1	0.5	08/03/15 22:16	cra
Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	1		U	*	%	0.1	0.5	08/03/15 22:16	cra
Net Acid Generation Procedure	Single NAG - EGI 2002									
NAG		1	12		*	Kg H2SO4/t	1	1	07/30/15 0:00	brd
pH After Oxidation		1	3.4		*	units	0.1	0.1	07/30/15 0:00	brd
Neutralization Potential as CaCO3	M600/2-78-054 3.2.3	1	7.5		*	%	0.1	0.5	08/10/15 12:53	cra
Sulfur Forms	M600/2-78-054 3.2.4-MOD									
Sulfur HCl Residue		1	1.75		*	%	0.01	0.1	08/04/15 0:00	cra
Sulfur HNO3 Residue		1	0.02	B	*	%	0.01	0.1	08/04/15 0:00	cra
Sulfur Organic Residual		1	0.02	B	*	%	0.01	0.1	08/04/15 0:00	cra
Sulfur Pyritic Sulfide		1	1.73		*	%	0.01	0.1	08/04/15 0:00	cra
Sulfur Sulfate		1	3.79		*	%	0.01	0.1	08/04/15 0:00	cra
Sulfur Total		1	5.54		*	%	0.01	0.1	08/04/15 0:00	cra
Total Sulfur minus Sulfate		1	1.75		*	%	0.01	0.1	08/04/15 0:00	cra

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972				*				07/16/15 9:00	brd
Crush and Pulverize (Ring & Puck)	EPA-600/2-78-054 3.1.3				*				07/28/15 8:50	brd

Arizona license number: AZ0102

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/2900-3100/STATIC

ACZ Sample ID: **L25227-03**

Date Sampled: 06/29/15 00:00

Date Received: 07/02/15

Sample Matrix: Soil

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acid Generation Potential (calc on Sulfur total)	M600/2-78-054 3.2.4		174			t CaCO3/Kt	0.31	3.1	08/17/15 11:10	calc
Acid Neutralization Potential (calc)	M600/2-78-054 1.3		131			t CaCO3/Kt	1	5	08/17/15 11:10	calc
Acid-Base Potential (calc on Sulfur total)	M600/2-78-054 1.3		-43.1			t CaCO3/Kt			08/17/15 11:10	calc
Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	1	1.5		*	%	0.1	0.5	08/04/15 1:05	cra
Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	1	1.5		*	%	0.1	0.5	08/04/15 1:05	cra
Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	1		U	*	%	0.1	0.5	08/04/15 1:05	cra
Net Acid Generation Procedure	Single NAG - EGI 2002									
NAG		1		U	*	Kg H2SO4/t	1	1	07/30/15 0:00	brd
pH After Oxidation		1	8.3		*	units	0.1	0.1	07/30/15 0:00	brd
Neutralization Potential as CaCO3	M600/2-78-054 3.2.3	1	13.1		*	%	0.1	0.5	08/10/15 11:30	cra
Sulfur Forms	M600/2-78-054 3.2.4-MOD									
Sulfur HCl Residue		1	1.71		*	%	0.01	0.1	08/04/15 0:00	cra
Sulfur HNO3 Residue		1	0.02	B	*	%	0.01	0.1	08/04/15 0:00	cra
Sulfur Organic Residual		1	0.02	B	*	%	0.01	0.1	08/04/15 0:00	cra
Sulfur Pyritic Sulfide		1	1.69		*	%	0.01	0.1	08/04/15 0:00	cra
Sulfur Sulfate		1	3.86		*	%	0.01	0.1	08/04/15 0:00	cra
Sulfur Total		1	5.57		*	%	0.01	0.1	08/04/15 0:00	cra
Total Sulfur minus Sulfate		1	1.71		*	%	0.01	0.1	08/04/15 0:00	cra

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972				*				07/16/15 9:00	brd
Crush and Pulverize (Ring & Puck)	EPA-600/2-78-054 3.1.3				*				07/28/15 8:53	brd

Arizona license number: AZ0102

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/3100-3300/STATIC

ACZ Sample ID: **L25227-04**

Date Sampled: 06/29/15 00:00

Date Received: 07/02/15

Sample Matrix: Soil

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acid Generation Potential (calc on Sulfur total)	M600/2-78-054 3.2.4		149			t CaCO3/Kt	0.31	3.1	08/17/15 11:10	calc
Acid Neutralization Potential (calc)	M600/2-78-054 1.3		141			t CaCO3/Kt	1	5	08/17/15 11:10	calc
Acid-Base Potential (calc on Sulfur total)	M600/2-78-054 1.3		-8.4			t CaCO3/Kt			08/17/15 11:10	calc
Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	1	1.4		*	%	0.1	0.5	08/04/15 3:54	cra
Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	1	1.4		*	%	0.1	0.5	08/04/15 3:54	cra
Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	1		U	*	%	0.1	0.5	08/04/15 3:54	cra
Net Acid Generation Procedure	Single NAG - EGI 2002									
NAG		1		U	*	Kg H2SO4/t	1	1	07/30/15 0:00	brd
pH After Oxidation		1	9.8		*	units	0.1	0.1	07/30/15 0:00	brd
Neutralization Potential as CaCO3	M600/2-78-054 3.2.3	1	14.1		*	%	0.1	0.5	08/10/15 12:45	cra
Sulfur Forms	M600/2-78-054 3.2.4-MOD									
Sulfur HCl Residue		1	1.82		*	%	0.01	0.1	08/04/15 0:00	cra
Sulfur HNO3 Residue		1	0.02	B	*	%	0.01	0.1	08/04/15 0:00	cra
Sulfur Organic Residual		1	0.02	B	*	%	0.01	0.1	08/04/15 0:00	cra
Sulfur Pyritic Sulfide		1	1.80		*	%	0.01	0.1	08/04/15 0:00	cra
Sulfur Sulfate		1	2.96		*	%	0.01	0.1	08/04/15 0:00	cra
Sulfur Total		1	4.78		*	%	0.01	0.1	08/04/15 0:00	cra
Total Sulfur minus Sulfate		1	1.82		*	%	0.01	0.1	08/04/15 0:00	cra

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972				*				07/16/15 9:00	brd
Crush and Pulverize (Ring & Puck)	EPA-600/2-78-054 3.1.3				*				07/28/15 8:56	brd

Arizona license number: AZ0102

Report Header Explanations

<i>Batch</i>	A distinct set of samples analyzed at a specific time
<i>Found</i>	Value of the QC Type of interest
<i>Limit</i>	Upper limit for RPD, in %.
<i>Lower</i>	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
<i>MDL</i>	Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #5). Allows for instrument and annual fluctuations.
<i>PCN/SCN</i>	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
<i>PQL</i>	Practical Quantitation Limit. Synonymous with the EPA term "minimum level".
<i>QC</i>	True Value of the Control Sample or the amount added to the Spike
<i>Rec</i>	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
<i>RPD</i>	Relative Percent Difference, calculation used for Duplicate QC Types
<i>Upper</i>	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
<i>Sample</i>	Value of the Sample of interest

QC Sample Types

<i>AS</i>	Analytical Spike (Post Digestion)	<i>LCSWD</i>	Laboratory Control Sample - Water Duplicate
<i>ASD</i>	Analytical Spike (Post Digestion) Duplicate	<i>LFB</i>	Laboratory Fortified Blank
<i>CCB</i>	Continuing Calibration Blank	<i>LFM</i>	Laboratory Fortified Matrix
<i>CCV</i>	Continuing Calibration Verification standard	<i>LFMD</i>	Laboratory Fortified Matrix Duplicate
<i>DUP</i>	Sample Duplicate	<i>LRB</i>	Laboratory Reagent Blank
<i>ICB</i>	Initial Calibration Blank	<i>MS</i>	Matrix Spike
<i>ICV</i>	Initial Calibration Verification standard	<i>MSD</i>	Matrix Spike Duplicate
<i>ICSAB</i>	Inter-element Correction Standard - A plus B solutions	<i>PBS</i>	Prep Blank - Soil
<i>LCSS</i>	Laboratory Control Sample - Soil	<i>PBW</i>	Prep Blank - Water
<i>LCSSD</i>	Laboratory Control Sample - Soil Duplicate	<i>PQV</i>	Practical Quantitation Verification standard
<i>LCSW</i>	Laboratory Control Sample - Water	<i>SDL</i>	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3)	EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste.
(5)	Standard Methods for the Examination of Water and Wastewater.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3)	Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5)	If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click:

<http://www.acz.com/public/extquallist.pdf>

Adrian Brown Consultants, Inc.

ACZ Project ID: **L25227**

Carbon, total (TC)

ASA No.9 29-2.2.4 Combustion/IR

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG387845													
WG387845PBS	PBS	08/03/15 11:00				U	%		-0.3	0.3			
WG387845LCSS	LCSS	08/03/15 13:49	PCN44492	4.19		4.2	%		80	120			
L25227-01DUP	DUP	08/03/15 19:27			.6	.7	%				15	20	RA

Carbon, total inorganic (TIC)

ASA No. 9 29-2.2.4 (calc TC - TOC)

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG387845													
WG387845PBS	PBS	08/03/15 11:00				U	%		-0.3	0.3			
L25227-01DUP	DUP	08/03/15 19:27			.6	.7	%				15	20	RA

Carbon, total organic (TOC)

ASA No.9 29-2.2.4 Combustion/IR

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG387845													
WG387845PBS	PBS	08/03/15 11:00				U	%		-0.3	0.3			
L25227-01DUP	DUP	08/03/15 19:27			U	U	%				0	20	RA

Net Acid Generation

Single NAG - EGI 2002

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG387539													
L25049-01DUP	DUP	07/28/15 11:48			47	46.6	g H ₂ SO ₄ /				1	20	

Neutralization Potential as CaCO₃

M600/2-78-054 3.2.3

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG388079													
WG388079PBS	PBS	08/10/15 10:24				U	%		-0.2	0.2			
WG388079LCSS	LCSS	08/10/15 10:45	PCN47543	4.96		5.1	%	103	80	120			
L25102-01MS	MS	08/10/15 11:28	SI141024-1	1	.3	1.28	%	98	70	130			
L25102-01DUP	DUP	08/10/15 11:49			.3	.25	%				18	20	RA
WG388080													
WG388080PBS	PBS	08/10/15 10:40				.13	%		-0.2	0.2			
WG388080LCSS	LCSS	08/10/15 11:05	PCN47539	7.21		8.38	%	116	80	120			
L25227-03MS	MS	08/10/15 11:55	SI141024-2	3	13.1	15.63	%	84	70	130			
L25227-03DUP	DUP	08/10/15 12:20			13.1	13	%				1	20	

Sulfur Organic Residual

M600/2-78-054 3.2.4-MOD

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG387843													
L25227-01DUP	DUP	08/04/15 4:20			.03	.03	%				0	20	RA

Sulfur Pyritic Sulfide

M600/2-78-054 3.2.4-MOD

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG387843													
L25227-01DUP	DUP	08/04/15 4:20			1.41	1.6	%				13	20	

Adrian Brown Consultants, Inc.

ACZ Project ID: **L25227**

Sulfur Sulfate

M600/2-78-054 3.2.4-MOD

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG387843													
L25227-01DUP	DUP	08/04/15 4:20			6.08	6.01	%				1	20	

Sulfur Total

M600/2-78-054 3.2.4-MOD

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG387843													
WG387843PBS	PBS	08/03/15 11:00				U	%		-0.03	0.03			
WG387843LCSS	LCSS	08/03/15 15:20	PCN44492	4.07		4.19	%	103	80	120			
L25227-01MS	MS	08/04/15 0:00	PCN47988	1.1	7.52	8.45	%	85	80	120			
L25227-01DUP	DUP	08/04/15 4:20			7.52	7.64	%				2	20	

Total Sulfur Minus Sulfate

M600/2-78-054 3.2.4-MOD

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG387843													
L25227-01DUP	DUP	08/04/15 4:20			1.44	1.63	%				12	20	

Adrian Brown Consultants, Inc.

ACZ Project ID: **L25227**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L25227-01	WG387845	Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	Q6	Sample was received above recommended temperature.
			ASA No. 9 29-2.2.4 (calc TC - TOC)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
			ASA No. 9 29-2.2.4 (calc TC - TOC)	ZQ	Analyte was not evaluated in the laboratory control standard. Either the analyte is not included in the scope of the analytical method or a commercial standard containing the analyte is not available.
		Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
			ASA No.9 29-2.2.4 Combustion/IR	ZQ	Analyte was not evaluated in the laboratory control standard. Either the analyte is not included in the scope of the analytical method or a commercial standard containing the analyte is not available.
	WG388079	Neutralization Potential as CaCO ₃	M600/2-78-054 3.2.3	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG387843	Sulfur Organic Residual	M600/2-78-054 3.2.4-MOD	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
L25227-02	WG387845	Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	Q6	Sample was received above recommended temperature.
			ASA No. 9 29-2.2.4 (calc TC - TOC)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
			ASA No. 9 29-2.2.4 (calc TC - TOC)	ZQ	Analyte was not evaluated in the laboratory control standard. Either the analyte is not included in the scope of the analytical method or a commercial standard containing the analyte is not available.
		Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
			ASA No.9 29-2.2.4 Combustion/IR	ZQ	Analyte was not evaluated in the laboratory control standard. Either the analyte is not included in the scope of the analytical method or a commercial standard containing the analyte is not available.
	WG388079	Neutralization Potential as CaCO ₃	M600/2-78-054 3.2.3	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG387843	Sulfur Organic Residual	M600/2-78-054 3.2.4-MOD	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

Adrian Brown Consultants, Inc.

ACZ Project ID: **L25227**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L25227-03	WG387845	Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	Q6	Sample was received above recommended temperature.
			ASA No. 9 29-2.2.4 (calc TC - TOC)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
			ASA No. 9 29-2.2.4 (calc TC - TOC)	ZQ	Analyte was not evaluated in the laboratory control standard. Either the analyte is not included in the scope of the analytical method or a commercial standard containing the analyte is not available.
		Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
			ASA No.9 29-2.2.4 Combustion/IR	ZQ	Analyte was not evaluated in the laboratory control standard. Either the analyte is not included in the scope of the analytical method or a commercial standard containing the analyte is not available.
	WG387843	Sulfur Organic Residual	M600/2-78-054 3.2.4-MOD	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	L25227-04	WG387845	Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	Q6
ASA No.9 29-2.2.4 Combustion/IR				RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
Carbon, total inorganic (TIC)			ASA No. 9 29-2.2.4 (calc TC - TOC)	Q6	Sample was received above recommended temperature.
			ASA No. 9 29-2.2.4 (calc TC - TOC)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
			ASA No. 9 29-2.2.4 (calc TC - TOC)	ZQ	Analyte was not evaluated in the laboratory control standard. Either the analyte is not included in the scope of the analytical method or a commercial standard containing the analyte is not available.
Carbon, total organic (TOC)			ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
			ASA No.9 29-2.2.4 Combustion/IR	ZQ	Analyte was not evaluated in the laboratory control standard. Either the analyte is not included in the scope of the analytical method or a commercial standard containing the analyte is not available.
WG387843		Sulfur Organic Residual	M600/2-78-054 3.2.4-MOD	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

Adrian Brown Consultants, Inc.

ACZ Project ID: **L25227**

Soil Analysis

The following parameters are not offered for certification or are not covered by AZ certificate #AZ0102.

Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR
Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)
Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR
NAG	Single NAG - EGI 2002
Neutralization Potential as CaCO ₃	M600/2-78-054 3.2.3
pH After Oxidation	Single NAG - EGI 2002
Sulfur HCl Residue	M600/2-78-054 3.2.4-MOD
Sulfur HNO ₃ Residue	M600/2-78-054 3.2.4-MOD
Sulfur Organic Residual	M600/2-78-054 3.2.4-MOD
Sulfur Pyritic Sulfide	M600/2-78-054 3.2.4-MOD
Sulfur Sulfate	M600/2-78-054 3.2.4-MOD
Sulfur Total	M600/2-78-054 3.2.4-MOD
Total Sulfur minus Sulfate	M600/2-78-054 3.2.4-MOD

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR
Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)
Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR
NAG	Single NAG - EGI 2002
Neutralization Potential as CaCO ₃	M600/2-78-054 3.2.3
pH After Oxidation	Single NAG - EGI 2002
Sulfur HCl Residue	M600/2-78-054 3.2.4-MOD
Sulfur HNO ₃ Residue	M600/2-78-054 3.2.4-MOD
Sulfur Organic Residual	M600/2-78-054 3.2.4-MOD
Sulfur Pyritic Sulfide	M600/2-78-054 3.2.4-MOD
Sulfur Sulfate	M600/2-78-054 3.2.4-MOD
Sulfur Total	M600/2-78-054 3.2.4-MOD
Total Sulfur minus Sulfate	M600/2-78-054 3.2.4-MOD

Adrian Brown Consultants, Inc.

ACZ Project ID: L25227

Date Received: 07/02/2015 10:11

Received By: ddp

Date Printed: 7/2/2015

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?	☐	☐	☒
2) Is the Chain of Custody or other directive shipping papers present?	☒	☐	☐
3) Does this project require special handling procedures such as CLP protocol?	☐	☐	☒
4) Are any samples NRC licensable material?	☐	☐	☒
5) If samples are received past hold time, proceed with requested short hold time analyses?	☒	☐	☐
6) Is the Chain of Custody complete and accurate?	☒	☐	☐
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?	☐	☒	☐

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	☒	☐	☐
9) Are all labels on containers and are they intact and legible?	☒	☐	☐
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	☒	☐	☐
11) For preserved bottle types, was the pH checked and within limits? ¹	☐	☐	☒
12) Is there sufficient sample volume to perform all requested work?	☒	☐	☐
13) Is the custody seal intact on all containers?	☐	☐	☒
14) Are samples that require zero headspace acceptable?	☐	☐	☒
15) Are all sample containers appropriate for analytical requirements?	☒	☐	☐
16) Is there an Hg-1631 trip blank present?	☐	☐	☒
17) Is there a VOA trip blank present?	☐	☐	☒
18) Were all samples received within hold time?	☒	☐	☐

Chain of Custody Related Remarks

The 'Relinquished By' field on the COC was not completed. The project manager is contacting the client.

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
NA22074	19.9	16	Yes

Was ice present in the shipment container(s)?

No - Wet or gel ice was not present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

Adrian Brown Consultants, Inc.

ACZ Project ID: L25227

Date Received: 07/02/2015 10:11

Received By: ddp

Date Printed: 7/2/2015

¹ The preservation of the following bottle types is not checked at sample receipt: Orange (oil and grease), Purple (total cyanide), Pink (dissolved cyanide), Brown (arsenic speciation), Sterile (fecal coliform), EDTA (sulfite), HCl preserved vial (organics), Na₂S₂O₃ preserved vial (organics), and HG-1631 (total/dissolved mercury by method 1631).



Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: JEFFREY WINICK

Company: SCHLUMBERGER WATER SERV.

E-mail: JWINICK@SLB.COM

Address: 1875 LAWRENCE STREET, SUITE 500

DENVER, CO 80215

Telephone: +1.303.244.8224

Copy of Report to:

Name: ADRIAN BROWN

Company: ADRIAN BROWN CONSULTANTS

E-mail: abrown@abch2o.com

Telephone: (303) 698-9080

Invoice to:

Name: ADRIAN BROWN

Company: ADRIAN BROWN CONSULTANTS

E-mail: lbrown@abch2o.com

Address: 130 W 4th Ave

Denver CO USA 80223

Telephone: (303) 698-9080

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses?

YES

NO

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO"

is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified.

Are samples for CO DW Compliance Monitoring?

YES

NO

If yes, please include state forms. Results will be reported to PQL.

PROJECT INFORMATION

ANALYSES REQUESTED (attach list or use quote number)

Quote #: CO HYDROGEOCHEMICAL STUDY

Project/PO #:

Reporting state for compliance testing:

Sampler's Name: Beverly Furfaro/ALS

Are any samples NRC licensable material? Yes No

of Containers

CO-HYDROGEO
-CHEMCO-HYDROGEO
-PRE-HCT

SAMPLE IDENTIFICATION

DATE:TIME

Matrix

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	CO-HYDROGEO - CHEM	CO-HYDROGEO - PRE-HCT
GHC15-1/2500-2700/Static	29-June-15:	rock	1(kg)	X	
GHC15-1/2700-2900/Static	29-June-15:	rock	1 (kg)		
GHC15-1/2900-3100/Static	29-June-15:	rock	1(kg)		
GHC15-1/3100-3300/Static	29-June-15	rock	1(kg)		
GHC15-1/2500-3300/Kinetic	29-June-15	rock	8(kg)		X

COPY

Matrix SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

Please contact Jeff Winick at 303.244.8224 for further instructions

Please refer to ACZ's terms & conditions located on the reverse side of this COG

RELINQUISHED BY:

DATE:TIME

RECEIVED BY:

DATE:TIME

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/2500-3300/KINETIC

ACZ Sample ID: **L25228-01**

Date Sampled: 06/29/15 00:00

Date Received: 07/02/15

Sample Matrix: Soil

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acid Generation Potential (calc on Sulfur total)	M600/2-78-054 3.2.4		183			t CaCO ₃ /Kt	0.31	3.1	09/30/15 0:00	calc
Acid Neutralization Potential (calc)	M600/2-78-054 1.3		106			t CaCO ₃ /Kt	1	5	09/30/15 0:00	calc
Acid-Base Potential (calc on Sulfur total)	M600/2-78-054 1.3		-76.8			t CaCO ₃ /Kt			09/30/15 0:00	calc
Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	1	1.1		*	%	0.1	0.5	08/04/15 6:43	cra
Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	1	1.1		*	%	0.1	0.5	08/04/15 6:43	cra
Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	1		U	*	%	0.1	0.5	08/04/15 6:43	cra
Net Acid Generation Procedure	Single NAG - EGI 2002									
NAG		1	2		*	Kg H ₂ SO ₄ /t	1	1	07/30/15 0:00	brd
pH After Oxidation		1	5.5		*	units	0.1	0.1	07/30/15 0:00	brd
Neutralization Potential as CaCO ₃	M600/2-78-054 3.2.3	1	10.6		*	%	0.1	0.5	08/10/15 13:10	cra
Sieve- 63 um (230 mesh)	ASA No.9, 15-4.2.2	1	2.6		*	% Passing	0.1	0.5	08/19/15 8:00	brd
Sieve- 125 um (120 mesh)	ASA No.9, 15-4.2.2	1	9		*	% Passing	0.1	0.5	08/19/15 8:00	brd
Sieve- 250 um (60 mesh)	ASA No.9, 15-4.2.2	1	13.8		*	% Passing	0.1	0.5	08/19/15 8:00	brd
Sieve- 500 um (35 mesh)	ASA No.9, 15-4.2.2	1	18.7		*	% Passing	0.1	0.5	08/19/15 8:00	brd
Sieve- 850 um (20 mesh)	ASA No.9, 15-4.2.2	1	24.2		*	% Passing	0.1	0.5	08/19/15 8:00	brd
Sieve- 2000 um (2.0 mm)	ASA No.9, 15-4.2.2	1	40.2		*	% Passing	0.1	0.5	08/19/15 8:00	brd
Sieve- 4000 um (4.0mm)	ASA No.9, 15-4.2.2	1	64.2		*	% Passing	0.1	0.5	08/19/15 8:00	brd
Sulfur Forms	M600/2-78-054 3.2.4-MOD									
Sulfur HCl Residue		1	1.99		*	%	0.01	0.1	08/04/15 0:00	cra
Sulfur HNO ₃ Residue		1	0.07	B	*	%	0.01	0.1	08/04/15 0:00	cra
Sulfur Organic Residual		1	0.07	B	*	%	0.01	0.1	08/04/15 0:00	cra
Sulfur Pyritic Sulfide		1	1.92		*	%	0.01	0.1	08/04/15 0:00	cra
Sulfur Sulfate		1	3.86		*	%	0.01	0.1	08/04/15 0:00	cra
Sulfur Total		1	5.85		*	%	0.01	0.1	08/04/15 0:00	cra
Total Sulfur minus Sulfate		1	1.99		*	%	0.01	0.1	08/04/15 0:00	cra

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/2500-3300/KINETIC

ACZ Sample ID: **L25228-01**

Date Sampled: 06/29/15 00:00

Date Received: 07/02/15

Sample Matrix: Soil

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972				*				07/16/15 9:00	brd
Crush and Pulverize (Ring & Puck)	EPA-600/2-78-054 3.1.3				*				07/28/15 8:59	brd
Humidity Cell Test	D5744-12									
Grain Size		1	<6.3 mm		*				08/21/15 0:00	arc
Sample Weight		1	1000		*	g			08/21/15 0:00	arc

Arizona license number: AZ0102

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/2500-3300/KINETIC-HCT WEEK 0

ACZ Sample ID: **L25228-02**

Date Sampled: 07/14/15 17:00

Date Received: 07/02/15

Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1	0.05	B	*	mg/L	0.03	0.2	07/15/15 16:01	aeb
Antimony, dissolved	M200.8 ICP-MS	1	0.0008	B	*	mg/L	0.0004	0.002	07/15/15 12:58	mfm
Arsenic, dissolved	M200.8 ICP-MS	1	0.0004	B	*	mg/L	0.0002	0.001	07/15/15 12:58	mfm
Barium, dissolved	M200.7 ICP	1	0.078		*	mg/L	0.003	0.02	07/15/15 16:01	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.00005	0.0003	07/15/15 12:58	mfm
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/15/15 16:01	aeb
Boron, dissolved	M200.7 ICP	1	0.01	B	*	mg/L	0.01	0.05	07/15/15 16:01	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/15/15 12:58	mfm
Calcium, dissolved	M200.7 ICP	1	509		*	mg/L	0.1	0.5	07/15/15 16:01	aeb
Chromium, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	07/15/15 16:01	aeb
Cobalt, dissolved	M200.7 ICP	2		U	*	mg/L	0.02	0.1	07/16/15 17:17	aeb
Copper, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	07/15/15 16:01	aeb
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/15/15 16:01	aeb
Iron, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.05	07/15/15 16:01	aeb
Lead, dissolved	M200.8 ICP-MS	1	0.0044		*	mg/L	0.0001	0.0005	07/15/15 12:58	mfm
Lithium, dissolved	M200.7 ICP	1	0.037	B	*	mg/L	0.008	0.04	07/15/15 16:01	aeb
Magnesium, dissolved	M200.7 ICP	1	7.6		*	mg/L	0.2	1	07/15/15 16:01	aeb
Manganese, dissolved	M200.7 ICP	1	0.104		*	mg/L	0.005	0.03	07/15/15 16:01	aeb
Mercury, dissolved	M245.1 CVAA	1		U	*	mg/L	0.0002	0.001	07/21/15 16:26	nco
Molybdenum, dissolved	M200.7 ICP	1	0.04	B	*	mg/L	0.02	0.1	07/15/15 16:01	aeb
Nickel, dissolved	M200.7 ICP	1		U	*	mg/L	0.008	0.04	07/15/15 16:01	aeb
Potassium, dissolved	M200.7 ICP	1	9.3		*	mg/L	0.2	1	07/15/15 16:01	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/15/15 16:01	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0006		*	mg/L	0.0001	0.0003	07/16/15 21:19	mfm
Silver, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.03	07/15/15 16:01	aeb
Sodium, dissolved	M200.7 ICP	1	41.9		*	mg/L	0.2	1	07/15/15 16:01	aeb
Strontium, dissolved	M200.7 ICP	1	3.620		*	mg/L	0.005	0.03	07/15/15 16:01	aeb
Thallium, dissolved	M200.8 ICP-MS	1	0.0001	B	*	mg/L	0.0001	0.0005	07/15/15 12:58	mfm
Tin, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/15/15 16:01	aeb
Titanium, dissolved	M200.7 ICP	2	0.01	B	*	mg/L	0.01	0.05	07/16/15 17:17	aeb
Vanadium, dissolved	M200.7 ICP	1		U	*	mg/L	0.005	0.03	07/15/15 16:01	aeb
Zinc, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	07/15/15 16:01	aeb

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/2500-3300/KINETIC-HCT WEEK 0

ACZ Sample ID: **L25228-02**

Date Sampled: 07/14/15 17:00

Date Received: 07/02/15

Sample Matrix: Leachate

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity--Humidity Cell Test	SM2510B	1	2080		*	umhos/cm	1	10	07/13/15 16:16	pta
End of leach volumes and mass	D5744-12									
Interstitial Weight		1	188			g			07/14/15 0:00	arc
Leachate Volume Added		1	1000			mL			07/14/15 0:00	arc
Leachate Volume Recovered		1	884			g			07/14/15 0:00	arc
Oxidation Reduction Potential (Eh)	D1498-08	1	443		*	mv	1	1	07/13/15 16:00	pta
pH, Humidity Cell Test	M9045D/M9040C									
pH		1	7.2			units	0.1	0.1	07/13/15 0:00	pta
pH measured at		1	22.2			C	0.1	0.1	07/13/15 0:00	pta

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acidity as CaCO ₃	SM2310B - Titration	1		U	*	mg/L	10	20	07/24/15 14:22	enb
Alkalinity as CaCO ₃	SM2320B - Titration									
Bicarbonate as CaCO ₃		1	16.4	B	*	mg/L	2	20	07/15/15 0:00	abd
Carbonate as CaCO ₃		1		U	*	mg/L	2	20	07/15/15 0:00	abd
Hydroxide as CaCO ₃		1		U	*	mg/L	2	20	07/15/15 0:00	abd
Total Alkalinity		1	16.4	B	*	mg/L	2	20	07/15/15 0:00	abd
Sulfate	D516-02/-07 - Turbidimetric	50	1300		*	mg/L	50	250	07/15/15 13:35	bsu

Arizona license number: **AZ0102**

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/2500-3300/KINETIC-HCT WEEK 1

ACZ Sample ID: **L25228-03**

Date Sampled: 07/21/15 17:00

Date Received: 07/02/15

Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U	*	mg/L	0.03	0.2	07/22/15 21:19	jjc
Antimony, dissolved	M200.8 ICP-MS	1	0.0006	B	*	mg/L	0.0004	0.002	07/22/15 11:57	mfm
Arsenic, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0002	0.001	07/22/15 11:57	mfm
Barium, dissolved	M200.7 ICP	1	0.072		*	mg/L	0.003	0.02	07/22/15 21:19	jjc
Beryllium, dissolved	M200.8 ICP-MS	1	0.00006	B	*	mg/L	0.00005	0.0003	07/23/15 18:26	mfm
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/22/15 21:19	jjc
Boron, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	07/22/15 21:19	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/22/15 11:57	mfm
Calcium, dissolved	M200.7 ICP	1	360		*	mg/L	0.1	0.5	07/22/15 21:19	jjc
Chromium, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	07/22/15 21:19	jjc
Cobalt, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	07/22/15 21:19	jjc
Copper, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	07/22/15 21:19	jjc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/22/15 21:19	jjc
Iron, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.05	07/22/15 21:19	jjc
Lead, dissolved	M200.8 ICP-MS	1	0.0049		*	mg/L	0.0001	0.0005	07/22/15 11:57	mfm
Lithium, dissolved	M200.7 ICP	1	0.016	B	*	mg/L	0.008	0.04	07/22/15 21:19	jjc
Magnesium, dissolved	M200.7 ICP	1	6.3		*	mg/L	0.2	1	07/22/15 21:19	jjc
Manganese, dissolved	M200.7 ICP	1	0.162		*	mg/L	0.005	0.03	07/22/15 21:19	jjc
Mercury, dissolved	M245.1 CVAA	1		U	*	mg/L	0.0002	0.001	07/27/15 14:22	nco
Molybdenum, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.1	07/23/15 13:16	jjc
Nickel, dissolved	M200.7 ICP	1		U	*	mg/L	0.008	0.04	07/22/15 21:19	jjc
Potassium, dissolved	M200.7 ICP	1	5.5		*	mg/L	0.2	1	07/22/15 21:19	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	07/22/15 21:19	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0005		*	mg/L	0.0001	0.0003	07/22/15 11:57	mfm
Silver, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.03	07/23/15 17:14	jjc
Sodium, dissolved	M200.7 ICP	1	21.9		*	mg/L	0.2	1	07/22/15 21:19	jjc
Strontium, dissolved	M200.7 ICP	1	3.240		*	mg/L	0.005	0.03	07/22/15 21:19	jjc
Thallium, dissolved	M200.8 ICP-MS	1	0.0001	B	*	mg/L	0.0001	0.0005	07/22/15 11:57	mfm
Tin, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	07/22/15 21:19	jjc
Titanium, dissolved	M200.7 ICP	1		U	*	mg/L	0.005	0.03	07/22/15 21:19	jjc
Vanadium, dissolved	M200.7 ICP	1		U	*	mg/L	0.005	0.03	07/22/15 21:19	jjc
Zinc, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	07/22/15 21:19	jjc

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/2500-3300/KINETIC-HCT WEEK 1

ACZ Sample ID: **L25228-03**

Date Sampled: 07/21/15 17:00

Date Received: 07/02/15

Sample Matrix: Leachate

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity--Humidity Cell Test	SM2510B	1	1600		*	umhos/cm	1	10	07/20/15 16:10	arc
End of leach volumes and mass	D5744-12									
Interstitial Weight		1	174			g			07/21/15 0:00	arc
Leachate Volume Added		1	1000			mL			07/21/15 0:00	arc
Leachate Volume Recovered		1	989			g			07/21/15 0:00	arc
Oxidation Reduction Potential (Eh)	D1498-08	1	411		*	mv	1	1	07/20/15 16:24	arc
pH, Humidity Cell Test	M9045D/M9040C									
pH		1	6.3			units	0.1	0.1	07/20/15 0:00	arc
pH measured at		1	22.3			C	0.1	0.1	07/20/15 0:00	arc

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acidity as CaCO ₃	SM2310B - Titration	1		U	*	mg/L	10	20	07/24/15 14:36	enb
Alkalinity as CaCO ₃	SM2320B - Titration									
Bicarbonate as CaCO ₃		1	16.1	B	*	mg/L	2	20	07/22/15 0:00	abd
Carbonate as CaCO ₃		1		U	*	mg/L	2	20	07/22/15 0:00	abd
Hydroxide as CaCO ₃		1		U	*	mg/L	2	20	07/22/15 0:00	abd
Total Alkalinity		1	16.1	B	*	mg/L	2	20	07/22/15 0:00	abd
Sulfate	D516-02/-07 - Turbidimetric	50	936		*	mg/L	50	250	07/22/15 12:28	bsu

Arizona license number: **AZ0102**

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/2500-3300/KINETIC-HCT WEEK 2

ACZ Sample ID: **L25228-04**

Date Sampled: 07/28/15 17:00

Date Received: 07/02/15

Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0002	0.001	07/29/15 21:21	mfm
Cadmium, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	07/29/15 21:21	mfm
Copper, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	07/29/15 12:25	aeb
Iron, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.05	07/29/15 12:25	aeb
Lead, dissolved	M200.8 ICP-MS	1	0.0019		*	mg/L	0.0001	0.0005	07/29/15 21:21	mfm
Zinc, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	07/29/15 12:25	aeb

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity--Humidity Cell Test	SM2510B	1	1460		*	umhos/cm	1	10	07/27/15 15:21	arc
End of leach volumes and mass	D5744-12									
Interstitial Weight		1	163			g			07/28/15 0:00	arc
Leachate Volume Added		1	1000			mL			07/28/15 0:00	arc
Leachate Volume Recovered		1	896			g			07/28/15 0:00	arc
Oxidation Reduction Potential (Eh)	D1498-08	1	501		*	mv	1	1	07/27/15 16:21	arc
pH, Humidity Cell Test	M9045D/M9040C									
pH		1	6.2			units	0.1	0.1	07/27/15 0:00	arc
pH measured at		1	20.7			C	0.1	0.1	07/27/15 0:00	arc

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acidity as CaCO ₃	SM2310B - Titration	1		U	*	mg/L	10	20	08/05/15 13:52	apk
Alkalinity as CaCO ₃	SM2320B - Titration									
Bicarbonate as CaCO ₃		1	12.2	B	*	mg/L	2	20	07/29/15 0:00	abd
Carbonate as CaCO ₃		1		U	*	mg/L	2	20	07/29/15 0:00	abd
Hydroxide as CaCO ₃		1		U	*	mg/L	2	20	07/29/15 0:00	abd
Total Alkalinity		1	12.2	B	*	mg/L	2	20	07/29/15 0:00	abd
Sulfate	D516-02/-07 - Turbidimetric	50	833		*	mg/L	50	250	07/29/15 13:51	bsu

Arizona license number: **AZ0102**

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/2500-3300/KINETIC-HCT WEEK 3

ACZ Sample ID: **L25228-05**

Date Sampled: 08/04/15 17:00

Date Received: 07/02/15

Sample Matrix: Leachate

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0002	0.001	08/05/15 15:53	mfm
Cadmium, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	08/05/15 15:53	mfm
Copper, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	08/05/15 15:53	jjc
Iron, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.05	08/05/15 15:53	jjc
Lead, dissolved	M200.8 ICP-MS	1	0.0011		*	mg/L	0.0001	0.0005	08/05/15 15:53	mfm
Zinc, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	08/05/15 15:53	jjc

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity--Humidity Cell Test	SM2510B	1	1440		*	umhos/cm	1	10	08/03/15 16:10	arc
End of leach volumes and mass	D5744-12									
Interstitial Weight		1	153			g			08/04/15 0:00	arc
Leachate Volume Added		1	1000			mL			08/04/15 0:00	arc
Leachate Volume Recovered		1	888			g			08/04/15 0:00	arc
Oxidation Reduction Potential (Eh)	D1498-08	1	477		*	mv	1	1	08/03/15 16:24	arc
pH, Humidity Cell Test	M9045D/M9040C									
pH		1	6.5			units	0.1	0.1	08/03/15 0:00	arc
pH measured at		1	21.8			C	0.1	0.1	08/03/15 0:00	arc

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acidity as CaCO ₃	SM2310B - Titration	1		U	*	mg/L	10	20	08/05/15 14:10	apk
Alkalinity as CaCO ₃	SM2320B - Titration									
Bicarbonate as CaCO ₃		1	9.3	B	*	mg/L	2	20	08/05/15 0:00	abd
Carbonate as CaCO ₃		1		U	*	mg/L	2	20	08/05/15 0:00	abd
Hydroxide as CaCO ₃		1		U	*	mg/L	2	20	08/05/15 0:00	abd
Total Alkalinity		1	9.3	B	*	mg/L	2	20	08/05/15 0:00	abd
Sulfate	D516-02/-07 - Turbidimetric	100	723		*	mg/L	100	500	08/06/15 12:57	bsu

Arizona license number: **AZ0102**

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/2500-3300/KINETIC-HCT WEEK 4

ACZ Sample ID: **L25228-06**

Date Sampled: 08/11/15 17:00

Date Received: 07/02/15

Sample Matrix: Leachate

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0002	0.001	08/12/15 18:44	mfm
Cadmium, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	08/12/15 18:44	mfm
Copper, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	08/12/15 20:28	aeb
Iron, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.05	08/13/15 15:21	aeb
Lead, dissolved	M200.8 ICP-MS	1	0.0007		*	mg/L	0.0001	0.0005	08/12/15 18:44	mfm
Zinc, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	08/12/15 20:28	aeb

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity--Humidity Cell Test	SM2510B	1	1330		*	umhos/cm	1	10	08/10/15 16:10	arc
End of leach volumes and mass	D5744-12									
Interstitial Weight		1	147			g			08/11/15 0:00	arc
Leachate Volume Added		1	1000			mL			08/11/15 0:00	arc
Leachate Volume Recovered		1	905			g			08/11/15 0:00	arc
Oxidation Reduction Potential (Eh)	D1498-08	1	524		*	mv	1	1	08/10/15 16:24	arc
pH, Humidity Cell Test	M9045D/M9040C									
pH		1	6.6			units	0.1	0.1	08/10/15 0:00	arc
pH measured at		1	21.1			C	0.1	0.1	08/10/15 0:00	arc

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acidity as CaCO ₃	SM2310B - Titration	1		U	*	mg/L	10	20	08/19/15 13:10	tms
Alkalinity as CaCO ₃	SM2320B - Titration									
Bicarbonate as CaCO ₃		1	10.9	B	*	mg/L	2	20	08/14/15 0:00	abd
Carbonate as CaCO ₃		1		U	*	mg/L	2	20	08/14/15 0:00	abd
Hydroxide as CaCO ₃		1		U	*	mg/L	2	20	08/14/15 0:00	abd
Total Alkalinity		1	10.9	B	*	mg/L	2	20	08/14/15 0:00	abd
Sulfate	D516-02/-07 - Turbidimetric	50	784		*	mg/L	50	250	08/12/15 12:41	bsu

Arizona license number: **AZ0102**

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/2500-3300/KINETIC-HCT WEEK 5

ACZ Sample ID: **L25228-07**

Date Sampled: 08/18/15 17:00

Date Received: 07/02/15

Sample Matrix: Leachate

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0002	0.001	08/19/15 12:02	mfm
Cadmium, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	08/19/15 12:02	mfm
Copper, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	08/26/15 17:01	aeb
Iron, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.05	08/26/15 17:01	aeb
Lead, dissolved	M200.8 ICP-MS	1	0.0006		*	mg/L	0.0001	0.0005	08/19/15 12:02	mfm
Zinc, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	08/26/15 17:01	aeb

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity--Humidity Cell Test	SM2510B	1	1420		*	umhos/cm	1	10	08/17/15 16:10	arc
End of leach volumes and mass	D5744-12									
Interstitial Weight		1	142			g			08/18/15 0:00	arc
Leachate Volume Added		1	1000			mL			08/18/15 0:00	arc
Leachate Volume Recovered		1	881			g			08/18/15 0:00	arc
Oxidation Reduction Potential (Eh)	D1498-08	1	409		*	mv	1	1	08/17/15 16:24	arc
pH, Humidity Cell Test	M9045D/M9040C									
pH		1	6.6			units	0.1	0.1	08/17/15 0:00	arc
pH measured at		1	21.5			C	0.1	0.1	08/17/15 0:00	arc

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acidity as CaCO ₃	SM2310B - Titration	1		U	*	mg/L	10	20	08/27/15 14:45	tms
Alkalinity as CaCO ₃	SM2320B - Titration									
Bicarbonate as CaCO ₃		1	8.8	B	*	mg/L	2	20	08/19/15 0:00	abd
Carbonate as CaCO ₃		1		U	*	mg/L	2	20	08/19/15 0:00	abd
Hydroxide as CaCO ₃		1		U	*	mg/L	2	20	08/19/15 0:00	abd
Total Alkalinity		1	8.8	B	*	mg/L	2	20	08/19/15 0:00	abd
Sulfate	D516-02/-07 - Turbidimetric	50	746		*	mg/L	50	250	08/20/15 12:08	bsu

Arizona license number: **AZ0102**

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/2500-3300/KINETIC-HCT WEEK 6

ACZ Sample ID: **L25228-08**

Date Sampled: 08/25/15 17:00

Date Received: 07/02/15

Sample Matrix: Leachate

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U	*	mg/L	0.03	0.2	08/26/15 19:12	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0004	0.002	08/26/15 17:50	mfm
Arsenic, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0002	0.001	08/26/15 17:50	mfm
Barium, dissolved	M200.7 ICP	1	0.048		*	mg/L	0.003	0.02	08/26/15 19:12	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.00005	0.0003	08/26/15 17:50	mfm
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/26/15 19:12	jjc
Boron, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	08/26/15 19:12	jjc
Cadmium, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	08/26/15 17:50	mfm
Calcium, dissolved	M200.7 ICP	1	311		*	mg/L	0.1	0.5	08/26/15 19:12	jjc
Chromium, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	08/26/15 19:12	jjc
Cobalt, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	08/26/15 19:12	jjc
Copper, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	08/26/15 19:12	jjc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/26/15 19:12	jjc
Iron, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.05	08/26/15 19:12	jjc
Lead, dissolved	M200.8 ICP-MS	1	0.0005		*	mg/L	0.0001	0.0005	08/26/15 17:50	mfm
Lithium, dissolved	M200.7 ICP	1		U	*	mg/L	0.008	0.04	08/26/15 19:12	jjc
Magnesium, dissolved	M200.7 ICP	1	4.7		*	mg/L	0.2	1	08/26/15 19:12	jjc
Manganese, dissolved	M200.7 ICP	1	0.146		*	mg/L	0.005	0.03	08/26/15 19:12	jjc
Mercury, dissolved	M245.1 CVAA	1		U	*	mg/L	0.0002	0.001	08/27/15 13:31	mfm
Molybdenum, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.1	08/26/15 19:12	jjc
Nickel, dissolved	M200.7 ICP	1		U	*	mg/L	0.008	0.04	08/26/15 19:12	jjc
Potassium, dissolved	M200.7 ICP	1	3		*	mg/L	0.2	1	08/26/15 19:12	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/26/15 19:12	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0002	B	*	mg/L	0.0001	0.0003	08/26/15 17:50	mfm
Silver, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.03	08/26/15 19:12	jjc
Sodium, dissolved	M200.7 ICP	1	1.5		*	mg/L	0.2	1	08/26/15 19:12	jjc
Strontium, dissolved	M200.7 ICP	1	3.100		*	mg/L	0.005	0.03	08/26/15 19:12	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	08/26/15 17:50	mfm
Tin, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/26/15 19:12	jjc
Titanium, dissolved	M200.7 ICP	1	0.005	B	*	mg/L	0.005	0.03	08/26/15 19:12	jjc
Vanadium, dissolved	M200.7 ICP	1		U	*	mg/L	0.005	0.03	08/26/15 19:12	jjc
Zinc, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	08/26/15 19:12	jjc

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/2500-3300/KINETIC-HCT WEEK 6

ACZ Sample ID: **L25228-08**

Date Sampled: 08/25/15 17:00

Date Received: 07/02/15

Sample Matrix: Leachate

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity--Humidity Cell Test	SM2510B	1	1250		*	umhos/cm	1	10	08/24/15 15:30	arc
End of leach volumes and mass	D5744-12									
Interstitial Weight		1	138			g			08/25/15 0:00	arc
Leachate Volume Added		1	1000			mL			08/25/15 0:00	arc
Leachate Volume Recovered		1	885			g			08/25/15 0:00	arc
Oxidation Reduction Potential (Eh)	D1498-08	1	349		*	mv	1	1	08/24/15 15:52	arc
pH, Humidity Cell Test	M9045D/M9040C									
pH		1	6.4			units	0.1	0.1	08/24/15 0:00	arc
pH measured at		1	21.1			C	0.1	0.1	08/24/15 0:00	arc

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acidity as CaCO ₃	SM2310B - Titration	1		U	*	mg/L	10	20	09/07/15 11:18	sck
Alkalinity as CaCO ₃	SM2320B - Titration									
Bicarbonate as CaCO ₃		1	7.1	B	*	mg/L	2	20	09/02/15 0:00	tms
Carbonate as CaCO ₃		1		U	*	mg/L	2	20	09/02/15 0:00	tms
Hydroxide as CaCO ₃		1		U	*	mg/L	2	20	09/02/15 0:00	tms
Total Alkalinity		1	7.1	B	*	mg/L	2	20	09/02/15 0:00	tms
Sulfate	D516-02/-07 - Turbidimetric	20	692			mg/L	20	100	08/27/15 13:48	mss2

Arizona license number: **AZ0102**

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/2500-3300/KINETIC-HCT WEEK 7

ACZ Sample ID: **L25228-09**

Date Sampled: 09/01/15 17:00

Date Received: 07/02/15

Sample Matrix: Leachate

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0002	0.001	09/04/15 17:34	msh
Cadmium, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	09/04/15 17:34	msh
Copper, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	09/04/15 22:44	aeb
Iron, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.05	09/04/15 22:44	aeb
Lead, dissolved	M200.8 ICP-MS	1	0.0004	B	*	mg/L	0.0001	0.0005	09/04/15 17:34	msh
Zinc, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	09/04/15 22:44	aeb

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity--Humidity Cell Test	SM2510B	1	1210		*	umhos/cm	1	10	09/01/15 15:30	arc
End of leach volumes and mass	D5744-12									
Interstitial Weight		1	137			g			08/31/15 0:00	arc
Leachate Volume Added		1	1000			mL			08/31/15 0:00	arc
Leachate Volume Recovered		1	880			g			08/31/15 0:00	arc
Oxidation Reduction Potential (Eh)	D1498-08	1	398		*	mv	1	1	09/01/15 15:52	arc
pH, Humidity Cell Test	M9045D/M9040C									
pH		1	6.4			units	0.1	0.1	09/01/15 0:00	arc
pH measured at		1	20.5			C	0.1	0.1	09/01/15 0:00	arc

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acidity as CaCO ₃	SM2310B - Titration	1		U	*	mg/L	10	20	09/10/15 12:23	tms
Alkalinity as CaCO ₃	SM2320B - Titration									
Bicarbonate as CaCO ₃		1	6.4	B	*	mg/L	2	20	09/10/15 0:00	enb
Carbonate as CaCO ₃		1		U	*	mg/L	2	20	09/10/15 0:00	enb
Hydroxide as CaCO ₃		1		U	*	mg/L	2	20	09/10/15 0:00	enb
Total Alkalinity		1	6.4	B	*	mg/L	2	20	09/10/15 0:00	enb
Sulfate	D516-02/-07 - Turbidimetric	20	715		*	mg/L	20	100	09/03/15 11:39	bsu

Arizona license number: **AZ0102**

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/2500-3300/KINETIC-HCT WEEK 8

ACZ Sample ID: **L25228-10**

Date Sampled: 09/08/15 17:00

Date Received: 07/02/15

Sample Matrix: Leachate

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0002	0.001	09/11/15 12:58	mfm
Cadmium, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	09/11/15 12:58	mfm
Copper, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	09/15/15 11:20	aeb
Iron, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.05	09/15/15 11:20	aeb
Lead, dissolved	M200.8 ICP-MS	1	0.0005		*	mg/L	0.0001	0.0005	09/11/15 12:58	mfm
Zinc, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	09/15/15 11:20	aeb

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity--Humidity Cell Test	SM2510B	1	1300		*	umhos/cm	1	10	09/07/15 15:30	arc
End of leach volumes and mass	D5744-12									
Interstitial Weight		1	136			g			09/08/15 0:00	arc
Leachate Volume Added		1	1000			mL			09/08/15 0:00	arc
Leachate Volume Recovered		1	870			g			09/08/15 0:00	arc
Oxidation Reduction Potential (Eh)	D1498-08	1	495		*	mv	1	1	09/07/15 15:52	arc
pH, Humidity Cell Test	M9045D/M9040C									
pH		1	6.5			units	0.1	0.1	09/07/15 0:00	arc
pH measured at		1	20.9			C	0.1	0.1	09/07/15 0:00	arc

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acidity as CaCO ₃	SM2310B - Titration	1		U	*	mg/L	10	20	09/16/15 14:28	enb
Alkalinity as CaCO ₃	SM2320B - Titration									
Bicarbonate as CaCO ₃		1	8.8	B	*	mg/L	2	20	09/10/15 0:00	enb
Carbonate as CaCO ₃		1		U	*	mg/L	2	20	09/10/15 0:00	enb
Hydroxide as CaCO ₃		1		U	*	mg/L	2	20	09/10/15 0:00	enb
Total Alkalinity		1	8.8	B	*	mg/L	2	20	09/10/15 0:00	enb
Sulfate	D516-02/-07 - Turbidimetric	20	755			mg/L	20	100	09/10/15 13:55	mss2

Arizona license number: **AZ0102**

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/2500-3300/KINETIC-HCT WEEK 9

ACZ Sample ID: **L25228-11**

Date Sampled: 09/15/15 17:00

Date Received: 07/02/15

Sample Matrix: Leachate

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0002	0.001	09/17/15 18:40	mfm
Cadmium, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	09/17/15 18:40	mfm
Copper, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	09/18/15 21:45	aeb
Iron, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.05	09/18/15 21:45	aeb
Lead, dissolved	M200.8 ICP-MS	1	0.0004	B	*	mg/L	0.0001	0.0005	09/17/15 18:40	mfm
Zinc, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	09/18/15 21:45	aeb

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity--Humidity Cell Test	SM2510B	1	1190		*	umhos/cm	1	10	09/14/15 15:30	arc
End of leach volumes and mass	D5744-12									
Interstitial Weight		1	132			g			09/15/15 0:00	arc
Leachate Volume Added		1	1000			mL			09/15/15 0:00	arc
Leachate Volume Recovered		1	881			g			09/15/15 0:00	arc
Oxidation Reduction Potential (Eh)	D1498-08	1	357		*	mv	1	1	09/14/15 15:48	arc
pH, Humidity Cell Test	M9045D/M9040C									
pH		1	6.3			units	0.1	0.1	09/14/15 0:00	arc
pH measured at		1	20.8			C	0.1	0.1	09/14/15 0:00	arc

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acidity as CaCO ₃	SM2310B - Titration	1		U	*	mg/L	10	20	09/25/15 13:22	sck
Alkalinity as CaCO ₃	SM2320B - Titration									
Bicarbonate as CaCO ₃		1	6.7	B	*	mg/L	2	20	09/23/15 0:00	enb
Carbonate as CaCO ₃		1		U	*	mg/L	2	20	09/23/15 0:00	enb
Hydroxide as CaCO ₃		1		U	*	mg/L	2	20	09/23/15 0:00	enb
Total Alkalinity		1	6.7	B	*	mg/L	2	20	09/23/15 0:00	enb
Sulfate	D516-02/-07 - Turbidimetric	20	704			mg/L	20	100	09/17/15 11:27	mss2

Arizona license number: **AZ0102**

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/2500-3300/KINETIC-HCT WEEK10

ACZ Sample ID: **L25228-12**

Date Sampled: 09/22/15 17:00

Date Received: 07/02/15

Sample Matrix: Leachate

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0002	0.001	09/23/15 12:56	mfm
Cadmium, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	09/23/15 12:56	mfm
Copper, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	09/25/15 17:21	aeb
Iron, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.05	09/25/15 17:21	aeb
Lead, dissolved	M200.8 ICP-MS	1	0.0005		*	mg/L	0.0001	0.0005	09/23/15 12:56	mfm
Zinc, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	09/25/15 17:21	aeb

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity--Humidity Cell Test	SM2510B	1	1200		*	umhos/cm	1	10	09/21/15 15:30	arc
End of leach volumes and mass	D5744-12									
Interstitial Weight		1	130			g			09/21/15 0:00	arc
Leachate Volume Added		1	1000			mL			09/21/15 0:00	arc
Leachate Volume Recovered		1	879			g			09/21/15 0:00	arc
Oxidation Reduction Potential (Eh)	WG390974	1	***244***		*	mv	1	1	09/21/15 15:48	AREV
pH, Humidity Cell Test	M9045D/M9040C									
pH		1	6.5			units	0.1	0.1	09/21/15 0:00	arc
pH measured at		1	19.6			C	0.1	0.1	09/21/15 0:00	arc

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acidity as CaCO ₃	SM2310B - Titration	1		U	*	mg/L	10	20	09/25/15 13:37	sck
Alkalinity as CaCO ₃	SM2320B - Titration									
Bicarbonate as CaCO ₃		1	7.0	B	*	mg/L	2	20	09/28/15 0:00	enb
Carbonate as CaCO ₃		1		U	*	mg/L	2	20	09/28/15 0:00	enb
Hydroxide as CaCO ₃		1		U	*	mg/L	2	20	09/28/15 0:00	enb
Total Alkalinity		1	7.0	B	*	mg/L	2	20	09/28/15 0:00	enb
Sulfate	WG391257	20	***664***			mg/L	20	100	09/28/15 11:39	AREV

Arizona license number: **AZ0102**

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/2500-3300/KINETIC-HCT WEEK11

ACZ Sample ID: **L25228-13**

Date Sampled: 09/29/15 17:00

Date Received: 07/02/15

Sample Matrix: Leachate

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved			*****							NEED
Cadmium, dissolved			*****							NEED
Copper, dissolved			*****							NEED
Iron, dissolved			*****							NEED
Lead, dissolved			*****							NEED
Zinc, dissolved			*****							NEED

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity--Humidity Cell Test	WG391407	1	***1080***		*	umhos/cm	1	10	09/28/15 15:30	AREV
End of leach volumes and mass	D5744-12									
Interstitial Weight			*****							NEED
Leachate Volume Added			*****							NEED
Leachate Volume Recovered			*****							NEED
Oxidation Reduction Potential (Eh)			*****							NEED
pH, Humidity Cell Test	M9045D/M9040C									
pH		1	***6.3***			units	0.1	0.1	09/28/15 0:00	AREV
pH measured at		1	***19.6***			C	0.1	0.1	09/28/15 0:00	AREV

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acidity as CaCO3	WG391409		*****							WIP
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3			*****							NEED
Carbonate as CaCO3			*****							NEED
Hydroxide as CaCO3			*****							NEED
Total Alkalinity			*****							NEED
Sulfate			*****							NEED

Arizona license number: AZ0102

Report Header Explanations

<i>Batch</i>	A distinct set of samples analyzed at a specific time
<i>Found</i>	Value of the QC Type of interest
<i>Limit</i>	Upper limit for RPD, in %.
<i>Lower</i>	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
<i>MDL</i>	Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #5). Allows for instrument and annual fluctuations.
<i>PCN/SCN</i>	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
<i>PQL</i>	Practical Quantitation Limit. Synonymous with the EPA term "minimum level".
<i>QC</i>	True Value of the Control Sample or the amount added to the Spike
<i>Rec</i>	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
<i>RPD</i>	Relative Percent Difference, calculation used for Duplicate QC Types
<i>Upper</i>	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
<i>Sample</i>	Value of the Sample of interest

QC Sample Types

<i>AS</i>	Analytical Spike (Post Digestion)	<i>LCSWD</i>	Laboratory Control Sample - Water Duplicate
<i>ASD</i>	Analytical Spike (Post Digestion) Duplicate	<i>LFB</i>	Laboratory Fortified Blank
<i>CCB</i>	Continuing Calibration Blank	<i>LFM</i>	Laboratory Fortified Matrix
<i>CCV</i>	Continuing Calibration Verification standard	<i>LFMD</i>	Laboratory Fortified Matrix Duplicate
<i>DUP</i>	Sample Duplicate	<i>LRB</i>	Laboratory Reagent Blank
<i>ICB</i>	Initial Calibration Blank	<i>MS</i>	Matrix Spike
<i>ICV</i>	Initial Calibration Verification standard	<i>MSD</i>	Matrix Spike Duplicate
<i>ICSAB</i>	Inter-element Correction Standard - A plus B solutions	<i>PBS</i>	Prep Blank - Soil
<i>LCSS</i>	Laboratory Control Sample - Soil	<i>PBW</i>	Prep Blank - Water
<i>LCSSD</i>	Laboratory Control Sample - Soil Duplicate	<i>PQV</i>	Practical Quantitation Verification standard
<i>LCSW</i>	Laboratory Control Sample - Water	<i>SDL</i>	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3)	EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste.
(5)	Standard Methods for the Examination of Water and Wastewater.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3)	Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5)	If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click:

<http://www.acz.com/public/extquallist.pdf>

Adrian Brown Consultants, Inc.

ACZ Project ID: L25228

Date Received: 07/02/2015 10:11

Received By: ddp

Date Printed: 7/2/2015

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?	☐	☐	☒
2) Is the Chain of Custody or other directive shipping papers present?	☒	☐	☐
3) Does this project require special handling procedures such as CLP protocol?	☐	☐	☒
4) Are any samples NRC licensable material?	☐	☐	☒
5) If samples are received past hold time, proceed with requested short hold time analyses?	☒	☐	☐
6) Is the Chain of Custody complete and accurate?	☒	☐	☐
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?	☐	☒	☐

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	☒	☐	☐
9) Are all labels on containers and are they intact and legible?	☒	☐	☐
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	☒	☐	☐
11) For preserved bottle types, was the pH checked and within limits? ¹	☐	☐	☒
12) Is there sufficient sample volume to perform all requested work?	☒	☐	☐
13) Is the custody seal intact on all containers?	☐	☐	☒
14) Are samples that require zero headspace acceptable?	☐	☐	☒
15) Are all sample containers appropriate for analytical requirements?	☒	☐	☐
16) Is there an Hg-1631 trip blank present?	☐	☐	☒
17) Is there a VOA trip blank present?	☐	☐	☒
18) Were all samples received within hold time?	☒	☐	☐

Chain of Custody Related Remarks

The 'Relinquished By' field on the COC was not completed. The project manager is contacting the client.

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
-----	-----	-----	-----
NA22074	19.9	16	Yes

Was ice present in the shipment container(s)?

No - Wet or gel ice was not present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

Adrian Brown Consultants, Inc.

ACZ Project ID: L25228

Date Received: 07/02/2015 10:11

Received By: ddp

Date Printed: 7/2/2015

¹ The preservation of the following bottle types is not checked at sample receipt: Orange (oil and grease), Purple (total cyanide), Pink (dissolved cyanide), Brown (arsenic speciation), Sterile (fecal coliform), EDTA (sulfite), HCl preserved vial (organics), Na₂S₂O₃ preserved vial (organics), and HG-1631 (total/dissolved mercury by method 1631).

Preliminary



Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: JEFFREY WINICK
Company: SCHLUMBERGER WATER SERV.
E-mail: JWINICK@SLB.COM

Address: 1875 LAWRENCE STREET, SUITE 500
DENVER, CO 80215
Telephone: +1.303.244.8224

Copy of Report to:

Name: ADRIAN BROWN
Company: ADRIAN BROWN CONSULTANTS

E-mail: abrown@abch2o.com
Telephone: (303) 698-9080

Invoice to:

Name: ADRIAN BROWN
Company: ADRIAN BROWN CONSULTANTS
E-mail: lbrown@abch2o.com

Address: 130 W 4th Ave
Denver CO USA 80223
Telephone: (303) 698-9080

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses?
If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified.

YES ☐
NO ☐

Are samples for CO DW Compliance Monitoring?
If yes, please include state forms. Results will be reported to PQL.

YES ☐
NO ☒

PROJECT INFORMATION

ANALYSES REQUESTED (attach list or use quote number)

Quote #: CO HYDROGEOCHEMICAL STUDY
Project/PO #:
Reporting state for compliance testing:
Sampler's Name: Beverly Furfaro/ALS
Are any samples NRC licensable material? Yes No

of Containers

SAMPLE IDENTIFICATION DATE:TIME Matrix

GHC15-1/2500-2700/Static	29-June-15:	rock	1(kg)
GHC15-1/2700-2900/Static	29-June-15:	rock	1(kg)
GHC15-1/2900-3100/Static	29-June-15:	rock	1(kg)
GHC15-1/3100-3300/Static	29-June-15	rock	1(kg)
GHC15-1/2500-3300/Kineti	29-June-15	rock	8(kg)

Matrix SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

Please contact Jeff Winick at 303.244.8224 for further instructions

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:

DATE:TIME

RECEIVED BY:

DATE:TIME



Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: JEFFREY WINICK

Company: SCHLUMBERGER WATER SERV.

E-mail: JWINICK@SLB.COM

Address: 1875 LAWRENCE STREET, SUITE 500

DENVER, CO 80215

Telephone: +1.303.244.8224

Copy of Report to:

Name: ADRIAN BROWN

Company: ADRIAN BROWN CONSULTANTS

E-mail: abrown@abch2o.com

Telephone: (303) 698-9080

Invoice to:

Name: ADRIAN BROWN

Company: ADRIAN BROWN CONSULTANTS

E-mail: lbrown@abch2o.com

Address: 130 W 4th Ave

Denver CO USA 80223

Telephone: (303) 698-9080

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses?

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO"

is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

YES

NO

Are samples for CO DW Compliance Monitoring?

If yes, please include state forms. Results will be reported to PQL.

YES

NO

PROJECT INFORMATION

ANALYSES REQUESTED (attach list or use quote number)

Quote # CO HYDROGEOCHEMICAL STUDY

Project/PO #:

Reporting state for compliance testing:

Sampler's Name: Beverly Furfaro/ALS

Are any samples NRC licensable material? Yes No

of Containers

LO-HYDROGED
-CHEM

LO-HYDROGED
-PRE-HCT

SAMPLE IDENTIFICATION

DATE:TIME

Matrix

GHC15-1/2500-2700/Static

29-June-15:

rock

1(kg)

X

GHC15-1/2700-2900/Static

29-June-15:

rock

1(kg)

GHC15-1/2900-3100/Static

29-June-15:

rock

1(kg)

GHC15-1/3100-3300/Static

29-June-15

rock

1(kg)

GHC15-1/2500-3300/Kinetic

29-June-15

rock

8(kg)

X

COPY

Matrix SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

Please contact Jeff Winick at 303.244.8224 for further instructions

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:

DATE:TIME

RECEIVED BY:

DATE:TIME

August 26, 2015

Report to:

Jeffrey Winick
Schlumberger Water Services
1875 Lawrence Street
Suite 500
Denver, CO 80202

Bill to:

Accounts Payable
Adrian Brown Consultants, Inc.
130 W 4th Avenue
Denver, CO 80223

cc: Adrian Brown

Project ID:

ACZ Project ID: L25367

Jeffrey Winick:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on July 09, 2015. This project has been assigned to ACZ's project number, L25367. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L25367. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after September 25, 2015. If the samples are determined to be hazardous, additional charges apply for disposal (typically \$11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.



Scott Habermehl has reviewed
and approved this report.



Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC 15-1/3300-3500/STATIC C

ACZ Sample ID: **L25367-01**

Date Sampled: 07/08/15 00:00

Date Received: 07/09/15

Sample Matrix: Soil

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acid Generation Potential (calc on Sulfur total)	M600/2-78-054 3.2.4		128			t CaCO3/Kt	0.31	3.1	08/26/15 9:46	calc
Acid Neutralization Potential (calc)	M600/2-78-054 1.3		84.0			t CaCO3/Kt	1	5	08/26/15 9:46	calc
Acid-Base Potential (calc on Sulfur total)	M600/2-78-054 1.3		-43.5			t CaCO3/Kt			08/26/15 9:46	calc
Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	1	1.1		*	%	0.1	0.5	08/04/15 9:32	cra
Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	1	1.1		*	%	0.1	0.5	08/04/15 9:32	cra
Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	1		U	*	%	0.1	0.5	08/04/15 9:32	cra
Net Acid Generation Procedure	Single NAG - EGI 2002									
NAG		1		U	*	Kg H2SO4/t	1	1	08/19/15 0:00	brd
pH After Oxidation		1	7.6		*	units	0.1	0.1	08/19/15 0:00	brd
Neutralization Potential as CaCO3	M600/2-78-054 3.2.3	1	8.4		*	%	0.1	0.5	08/10/15 13:14	cra
Sulfur Forms	M600/2-78-054 3.2.4-MOD									
Sulfur HCl Residue		1	1.50		*	%	0.01	0.1	08/05/15 0:00	cra
Sulfur HNO3 Residue		1	0.02	B	*	%	0.01	0.1	08/05/15 0:00	cra
Sulfur Organic Residual		1	0.02	B	*	%	0.01	0.1	08/05/15 0:00	cra
Sulfur Pyritic Sulfide		1	1.48		*	%	0.01	0.1	08/05/15 0:00	cra
Sulfur Sulfate		1	2.58		*	%	0.01	0.1	08/05/15 0:00	cra
Sulfur Total		1	4.08		*	%	0.01	0.1	08/05/15 0:00	cra
Total Sulfur minus Sulfate		1	1.50		*	%	0.01	0.1	08/05/15 0:00	cra

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972				*				07/16/15 9:00	brd
Crush and Pulverize (Ring & Puck)	EPA-600/2-78-054 3.1.3				*				08/19/15 8:00	brd

Arizona license number: AZ0102

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC 15-1/3500-3700/STATIC C

ACZ Sample ID: **L25367-02**

Date Sampled: 07/08/15 00:00

Date Received: 07/09/15

Sample Matrix: Soil

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acid Generation Potential (calc on Sulfur total)	M600/2-78-054 3.2.4		167			t CaCO3/Kt	0.31	3.1	08/26/15 9:47	calc
Acid Neutralization Potential (calc)	M600/2-78-054 1.3		76.0			t CaCO3/Kt	1	5	08/26/15 9:47	calc
Acid-Base Potential (calc on Sulfur total)	M600/2-78-054 1.3		-90.6			t CaCO3/Kt			08/26/15 9:47	calc
Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	1	0.9		*	%	0.1	0.5	08/04/15 12:21	cra
Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	1	0.9		*	%	0.1	0.5	08/04/15 12:21	cra
Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	1		U	*	%	0.1	0.5	08/04/15 12:21	cra
Net Acid Generation Procedure	Single NAG - EGI 2002									
NAG		1	4		*	Kg H2SO4/t	1	1	08/19/15 0:00	brd
pH After Oxidation		1	5.2		*	units	0.1	0.1	08/19/15 0:00	brd
Neutralization Potential as CaCO3	M600/2-78-054 3.2.3	1	7.6		*	%	0.1	0.5	08/10/15 13:35	cra
Sulfur Forms	M600/2-78-054 3.2.4-MOD									
Sulfur HCl Residue		1	1.98		*	%	0.01	0.1	08/05/15 0:00	cra
Sulfur HNO3 Residue		1	0.01	B	*	%	0.01	0.1	08/05/15 0:00	cra
Sulfur Organic Residual		1	0.01	B	*	%	0.01	0.1	08/05/15 0:00	cra
Sulfur Pyritic Sulfide		1	1.97		*	%	0.01	0.1	08/05/15 0:00	cra
Sulfur Sulfate		1	3.35		*	%	0.01	0.1	08/05/15 0:00	cra
Sulfur Total		1	5.33		*	%	0.01	0.1	08/05/15 0:00	cra
Total Sulfur minus Sulfate		1	1.98		*	%	0.01	0.1	08/05/15 0:00	cra

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972				*				07/16/15 9:00	brd
Crush and Pulverize (Ring & Puck)	EPA-600/2-78-054 3.1.3				*				08/19/15 10:00	brd

Arizona license number: AZ0102

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC 15-1/3700-3874/STATIC C

ACZ Sample ID: **L25367-03**

Date Sampled: 07/08/15 00:00

Date Received: 07/09/15

Sample Matrix: Soil

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acid Generation Potential (calc on Sulfur total)	M600/2-78-054 3.2.4		187			t CaCO3/Kt	0.31	3.1	08/26/15 9:47	calc
Acid Neutralization Potential (calc)	M600/2-78-054 1.3		77.0			t CaCO3/Kt	1	5	08/26/15 9:47	calc
Acid-Base Potential (calc on Sulfur total)	M600/2-78-054 1.3		-110			t CaCO3/Kt			08/26/15 9:47	calc
Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	1	0.9		*	%	0.1	0.5	08/04/15 15:10	cra
Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	1	0.9		*	%	0.1	0.5	08/04/15 15:10	cra
Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	1		U	*	%	0.1	0.5	08/04/15 15:10	cra
Net Acid Generation Procedure	Single NAG - EGI 2002									
NAG		1	15		*	Kg H2SO4/t	1	1	08/19/15 0:00	brd
pH After Oxidation		1	3.1		*	units	0.1	0.1	08/19/15 0:00	brd
Neutralization Potential as CaCO3	M600/2-78-054 3.2.3	1	7.7		*	%	0.1	0.5	08/10/15 13:56	cra
Sulfur Forms	M600/2-78-054 3.2.4-MOD									
Sulfur HCl Residue		1	2.43		*	%	0.01	0.1	08/05/15 0:00	cra
Sulfur HNO3 Residue		1	0.01	B	*	%	0.01	0.1	08/05/15 0:00	cra
Sulfur Organic Residual		1	0.01	B	*	%	0.01	0.1	08/05/15 0:00	cra
Sulfur Pyritic Sulfide		1	2.42		*	%	0.01	0.1	08/05/15 0:00	cra
Sulfur Sulfate		1	3.56		*	%	0.01	0.1	08/05/15 0:00	cra
Sulfur Total		1	5.99		*	%	0.01	0.1	08/05/15 0:00	cra
Total Sulfur minus Sulfate		1	2.43		*	%	0.01	0.1	08/05/15 0:00	cra

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972				*				07/16/15 9:00	brd
Crush and Pulverize (Ring & Puck)	EPA-600/2-78-054 3.1.3				*				08/19/15 12:00	brd

Arizona license number: AZ0102



Report Header Explanations

<i>Batch</i>	A distinct set of samples analyzed at a specific time
<i>Found</i>	Value of the QC Type of interest
<i>Limit</i>	Upper limit for RPD, in %.
<i>Lower</i>	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
<i>MDL</i>	Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #5). Allows for instrument and annual fluctuations.
<i>PCN/SCN</i>	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
<i>PQL</i>	Practical Quantitation Limit. Synonymous with the EPA term "minimum level".
<i>QC</i>	True Value of the Control Sample or the amount added to the Spike
<i>Rec</i>	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
<i>RPD</i>	Relative Percent Difference, calculation used for Duplicate QC Types
<i>Upper</i>	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
<i>Sample</i>	Value of the Sample of interest

QC Sample Types

<i>AS</i>	Analytical Spike (Post Digestion)	<i>LCSWD</i>	Laboratory Control Sample - Water Duplicate
<i>ASD</i>	Analytical Spike (Post Digestion) Duplicate	<i>LFB</i>	Laboratory Fortified Blank
<i>CCB</i>	Continuing Calibration Blank	<i>LFM</i>	Laboratory Fortified Matrix
<i>CCV</i>	Continuing Calibration Verification standard	<i>LFMD</i>	Laboratory Fortified Matrix Duplicate
<i>DUP</i>	Sample Duplicate	<i>LRB</i>	Laboratory Reagent Blank
<i>ICB</i>	Initial Calibration Blank	<i>MS</i>	Matrix Spike
<i>ICV</i>	Initial Calibration Verification standard	<i>MSD</i>	Matrix Spike Duplicate
<i>ICSAB</i>	Inter-element Correction Standard - A plus B solutions	<i>PBS</i>	Prep Blank - Soil
<i>LCSS</i>	Laboratory Control Sample - Soil	<i>PBW</i>	Prep Blank - Water
<i>LCSSD</i>	Laboratory Control Sample - Soil Duplicate	<i>PQV</i>	Practical Quantitation Verification standard
<i>LCSW</i>	Laboratory Control Sample - Water	<i>SDL</i>	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

- (1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
- (2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
- (3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
- (4) EPA SW-846. Test Methods for Evaluating Solid Waste.
- (5) Standard Methods for the Examination of Water and Wastewater.

Comments

- (1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
- (2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
- (3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
- (4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
- (5) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click:

<http://www.acz.com/public/extquallist.pdf>

Adrian Brown Consultants, Inc.

ACZ Project ID: **L25367**

Carbon, total (TC)

ASA No.9 29-2.2.4 Combustion/IR

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG387845													
WG387845PBS	PBS	08/03/15 11:00				U	%		-0.3	0.3			
WG387845LCSS	LCSS	08/03/15 13:49	PCN44492	4.19		4.2	%		80	120			
L25227-01DUP	DUP	08/03/15 19:27			.6	.7	%				15	20	RA

Carbon, total inorganic (TIC)

ASA No. 9 29-2.2.4 (calc TC - TOC)

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG387845													
WG387845PBS	PBS	08/03/15 11:00				U	%		-0.3	0.3			
L25227-01DUP	DUP	08/03/15 19:27			.6	.7	%				15	20	RA

Carbon, total organic (TOC)

ASA No.9 29-2.2.4 Combustion/IR

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG387845													
WG387845PBS	PBS	08/03/15 11:00				U	%		-0.3	0.3			
L25227-01DUP	DUP	08/03/15 19:27			U	U	%				0	20	RA

Net Acid Generation

Single NAG - EGI 2002

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG388786													
L25367-01DUP	DUP	08/19/15 8:00			U	U	g H ₂ SO ₄ /				0	20	RA

Neutralization Potential as CaCO₃

M600/2-78-054 3.2.3

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG388079													
WG388079PBS	PBS	08/10/15 10:24				U	%		-0.2	0.2			
WG388079LCSS	LCSS	08/10/15 10:45	PCN47543	4.96		5.1	%	103	80	120			
L25102-01MS	MS	08/10/15 11:28	SI141024-1	1	.3	1.28	%	98	70	130			
L25102-01DUP	DUP	08/10/15 11:49			.3	.25	%				18	20	RA

Sulfur Organic Residual

M600/2-78-054 3.2.4-MOD

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG387843													
L25227-01DUP	DUP	08/04/15 4:20			.03	.03	%				0	20	RA

Sulfur Pyritic Sulfide

M600/2-78-054 3.2.4-MOD

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG387843													
L25227-01DUP	DUP	08/04/15 4:20			1.41	1.6	%				13	20	

Sulfur Sulfate

M600/2-78-054 3.2.4-MOD

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG387843													
L25227-01DUP	DUP	08/04/15 4:20			6.08	6.01	%				1	20	

Adrian Brown Consultants, Inc.

ACZ Project ID: **L25367**

Sulfur Total

M600/2-78-054 3.2.4-MOD

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG387843													
WG387843PBS	PBS	08/03/15 11:00				U	%		-0.03	0.03			
WG387843LCSS	LCSS	08/03/15 15:20	PCN44492	4.07		4.19	%	103	80	120			
L25227-01MS	MS	08/04/15 0:00	PCN47988	1.1	7.52	8.45	%	85	80	120			
L25227-01DUP	DUP	08/04/15 4:20			7.52	7.64	%				2	20	

Total Sulfur Minus Sulfate

M600/2-78-054 3.2.4-MOD

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG387843													
L25227-01DUP	DUP	08/04/15 4:20			1.44	1.63	%				12	20	

REPAD.15.06.05.01

Adrian Brown Consultants, Inc.

ACZ Project ID: **L25367**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L25367-03	WG387845	Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.
			ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
		Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	Q6	Sample was received above recommended temperature.
			ASA No. 9 29-2.2.4 (calc TC - TOC)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
			ASA No. 9 29-2.2.4 (calc TC - TOC)	ZQ	Analyte was not evaluated in the laboratory control standard. Either the analyte is not included in the scope of the analytical method or a commercial standard containing the analyte is not available.
	Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	Q6	Sample was received above recommended temperature.	
		ASA No.9 29-2.2.4 Combustion/IR	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).	
		ASA No.9 29-2.2.4 Combustion/IR	ZQ	Analyte was not evaluated in the laboratory control standard. Either the analyte is not included in the scope of the analytical method or a commercial standard containing the analyte is not available.	
	WG388786	NAG	Single NAG - EGI 2002	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG388079	Neutralization Potential as CaCO3	M600/2-78-054 3.2.3	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
WG387843	Sulfur Organic Residual	M600/2-78-054 3.2.4-MOD	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).	

Adrian Brown Consultants, Inc.ACZ Project ID: **L25367**

Soil Analysis

The following parameters are not offered for certification or are not covered by AZ certificate #AZ0102.

Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR
Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)
Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR
NAG	Single NAG - EGI 2002
Neutralization Potential as CaCO ₃	M600/2-78-054 3.2.3
pH After Oxidation	Single NAG - EGI 2002
Sulfur HCl Residue	M600/2-78-054 3.2.4-MOD
Sulfur HNO ₃ Residue	M600/2-78-054 3.2.4-MOD
Sulfur Organic Residual	M600/2-78-054 3.2.4-MOD
Sulfur Pyritic Sulfide	M600/2-78-054 3.2.4-MOD
Sulfur Sulfate	M600/2-78-054 3.2.4-MOD
Sulfur Total	M600/2-78-054 3.2.4-MOD
Total Sulfur minus Sulfate	M600/2-78-054 3.2.4-MOD

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR
Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)
Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR
NAG	Single NAG - EGI 2002
Neutralization Potential as CaCO ₃	M600/2-78-054 3.2.3
pH After Oxidation	Single NAG - EGI 2002
Sulfur HCl Residue	M600/2-78-054 3.2.4-MOD
Sulfur HNO ₃ Residue	M600/2-78-054 3.2.4-MOD
Sulfur Organic Residual	M600/2-78-054 3.2.4-MOD
Sulfur Pyritic Sulfide	M600/2-78-054 3.2.4-MOD
Sulfur Sulfate	M600/2-78-054 3.2.4-MOD
Sulfur Total	M600/2-78-054 3.2.4-MOD
Total Sulfur minus Sulfate	M600/2-78-054 3.2.4-MOD

Adrian Brown Consultants, Inc.

ACZ Project ID: L25367

Date Received: 07/09/2015 09:50

Received By: ear

Date Printed: 7/10/2015

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?	☐	☐	☒
2) Is the Chain of Custody or other directive shipping papers present?	☒	☐	☐
3) Does this project require special handling procedures such as CLP protocol?	☐	☐	☒
4) Are any samples NRC licensable material?	☐	☐	☒
5) If samples are received past hold time, proceed with requested short hold time analyses?	☒	☐	☐
6) Is the Chain of Custody complete and accurate?	☒	☐	☐
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?	☐	☒	☐

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	☒	☐	☐
9) Are all labels on containers and are they intact and legible?	☒	☐	☐
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	☒	☐	☐
11) For preserved bottle types, was the pH checked and within limits? ¹	☐	☐	☒
12) Is there sufficient sample volume to perform all requested work?	☒	☐	☐
13) Is the custody seal intact on all containers?	☐	☐	☒
14) Are samples that require zero headspace acceptable?	☐	☐	☒
15) Are all sample containers appropriate for analytical requirements?	☒	☐	☐
16) Is there an Hg-1631 trip blank present?	☐	☐	☒
17) Is there a VOA trip blank present?	☐	☐	☒
18) Were all samples received within hold time?	☒	☐	☐

Chain of Custody Related Remarks

Original COC unusable at receipt. Copy of COC used for Login.

The 'Relinquished By' field on the COC was not completed. The project manager is contacting the client.

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
NA22111	11.6	19	N/A

Was ice present in the shipment container(s)?

No - Wet or gel ice was not present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

Adrian Brown Consultants, Inc.

ACZ Project ID: L25367

Date Received: 07/09/2015 09:50

Received By: ear

Date Printed: 7/10/2015

¹ The preservation of the following bottle types is not checked at sample receipt: Orange (oil and grease), Purple (total cyanide), Pink (dissolved cyanide), Brown (arsenic speciation), Sterile (fecal coliform), EDTA (sulfite), HCl preserved vial (organics), Na₂S₂O₃ preserved vial (organics), and HG-1631 (total/dissolved mercury by method 1631).



Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO. 80487 (800) 334-5493

125367

CHAIN of CUSTODY

Report to:

Name: JEFFREY WINICK

Company: SCHLUMBERGER WATER SERV.

E-mail: JWINICK@SLB.COM

Address: 1875 LAWRENCE STREET, SUITE 500

DENVER, CO 80215

Telephone: +1.303.244.8224

Copy of Report to:

Name: ADRIAN BROWN

Company: ADRIAN BROWN CONSULTANTS

E-mail: abrown@abch2o.com

Telephone: (303) 698-9080

Invoice to:

Name: ADRIAN BROWN

Company: ADRIAN BROWN CONSULTANTS

E-mail: lbrown@abch2o.com

Address: 130 W 4th Ave

Denver CO USA 80223

Telephone: (303) 698-9080

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses?

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified.

YES
NO

Are samples for CC DW Compliance Monitoring?

If yes, please include state forms. Results will be reported to PQL.

YES
NO

X

PROJECT INFORMATION

Quote #: CO HYDROGEOCHEMICAL STUDY

Project/PO #:

Reporting state for compliance testing:

Sampler's Name: Beverly Furfaro/ALS

Are any samples NRC licensable material? Yes No

ANALYSES REQUESTED (attach list or use quote number)

SAMPLE IDENTIFICATION

DATE: TIME

Matrix

of Containers

CO-HYDROGEO-CHEM

CO-HYDROGEO-CHEM - PRE-HCT

GHC15-1/3300-3500/Static 08-July-15:

rock

1(kg)

X

GHC15-1/3500-3700/Static 08-July-15:

rock

1(kg)

X

GHC15-1/3700-3874/Static 08-July-15:

rock

1(kg)

X

GHC15-1/3300-3874/Kineti 08-July-15:

rock

8(kg)

X

COPY

SW (Surface Water) - GW (Ground Water) - WW (Waste Water) - DW (Drinking Water) - SL (Sludge) - SO (Soil) - OL (Oil) - Other (Specify)

RKS

contact Jeff Winick at 303.244.8224 for further instructions

RELINQUISHED BY:

DATE: TIME

RECEIVED BY:

DATE: TIME

Please refer to ACZ's terms & conditions located on the reverse side of this COC

WPL

7/2/15 0950

FRMAD050.01.15.09

L25367-1508261400

White - Return with sample.

Yellow - Retain for your records.

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC 15-1/3300-3874/KINETIC

ACZ Sample ID: **L25368-01**

Date Sampled: 07/08/15 00:00

Date Received: 07/09/15

Sample Matrix: Soil

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acid Generation Potential (calc on Sulfur total)	M600/2-78-054 3.2.4		143			t CaCO ₃ /Kt	0.31	3.1	10/21/15 14:42	calc
Acid Neutralization Potential (calc)	M600/2-78-054 1.3		74.0			t CaCO ₃ /Kt	1	5	10/21/15 14:42	calc
Acid-Base Potential (calc on Sulfur total)	M600/2-78-054 1.3		-68.8			t CaCO ₃ /Kt			10/21/15 14:42	calc
Carbon, total (TC)	ASA No.9 29-2.2.4 Combustion/IR	1	1		*	%	0.1	0.5	08/04/15 17:59	cra
Carbon, total inorganic (TIC)	ASA No. 9 29-2.2.4 (calc TC - TOC)	1	1		*	%	0.1	0.5	08/04/15 17:59	cra
Carbon, total organic (TOC)	ASA No.9 29-2.2.4 Combustion/IR	1		U	*	%	0.1	0.5	08/04/15 17:59	cra
Net Acid Generation Procedure	Single NAG - EGI 2002									
NAG		1	5		*	Kg H ₂ SO ₄ /t	1	1	08/19/15 0:00	brd
pH After Oxidation		1	4.1		*	units	0.1	0.1	08/19/15 0:00	brd
Neutralization Potential as CaCO ₃	M600/2-78-054 3.2.3	1	7.4		*	%	0.1	0.5	08/10/15 14:38	cra
Sieve- 63 um (230 mesh)	ASA No.9, 15-4.2.2	1	1.7		*	% Passing	0.1	0.5	08/19/15 8:00	brd
Sieve- 125 um (120 mesh)	ASA No.9, 15-4.2.2	1	3.1		*	% Passing	0.1	0.5	08/19/15 8:00	brd
Sieve- 250 um (60 mesh)	ASA No.9, 15-4.2.2	1	4.2		*	% Passing	0.1	0.5	08/19/15 8:00	brd
Sieve- 500 um (35 mesh)	ASA No.9, 15-4.2.2	1	5.7		*	% Passing	0.1	0.5	08/19/15 8:00	brd
Sieve- 850 um (20 mesh)	ASA No.9, 15-4.2.2	1	8.3		*	% Passing	0.1	0.5	08/19/15 8:00	brd
Sieve- 2000 um (2.0 mm)	ASA No.9, 15-4.2.2	1	21.7		*	% Passing	0.1	0.5	08/19/15 8:00	brd
Sieve- 4000 um (4.0mm)	ASA No.9, 15-4.2.2	1	49.9		*	% Passing	0.1	0.5	08/19/15 8:00	brd
Sulfur Forms	M600/2-78-054 3.2.4-MOD									
Sulfur HCl Residue		1	2.10		*	%	0.01	0.1	08/05/15 0:00	cra
Sulfur HNO ₃ Residue		1	0.07	B	*	%	0.01	0.1	08/05/15 0:00	cra
Sulfur Organic Residual		1	0.07	B	*	%	0.01	0.1	08/05/15 0:00	cra
Sulfur Pyritic Sulfide		1	2.03		*	%	0.01	0.1	08/05/15 0:00	cra
Sulfur Sulfate		1	2.47		*	%	0.01	0.1	08/05/15 0:00	cra
Sulfur Total		1	4.57		*	%	0.01	0.1	08/05/15 0:00	cra
Total Sulfur minus Sulfate		1	2.10		*	%	0.01	0.1	08/05/15 0:00	cra

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC 15-1/3300-3874/KINETIC

ACZ Sample ID: **L25368-01**

Date Sampled: 07/08/15 00:00

Date Received: 07/09/15

Sample Matrix: Soil

Soil Preparation

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Air Dry at 34 Degrees C	USDA No. 1, 1972				*				07/16/15 9:00	brd
Crush and Pulverize (Ring & Puck)	EPA-600/2-78-054 3.1.3				*				08/19/15 14:00	brd
Humidity Cell Test	D5744-12									
Grain Size		1	<6.3 mm		*				08/21/15 0:00	arc
Sample Weight		1	1000		*	g			08/21/15 0:00	arc

Arizona license number: AZ0102

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC 15-1/3300-3874/KINETIC-HCT WEEK 0

ACZ Sample ID: **L25368-02**

Date Sampled: 08/25/15 17:00

Date Received: 07/09/15

Sample Matrix: Leachate

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1	0.03	B	*	mg/L	0.03	0.2	08/26/15 17:04	aeb
Antimony, dissolved	M200.8 ICP-MS	1	0.0018	B	*	mg/L	0.0004	0.002	08/26/15 17:53	mfm
Arsenic, dissolved	M200.8 ICP-MS	1	0.0003	B	*	mg/L	0.0002	0.001	08/26/15 17:53	mfm
Barium, dissolved	M200.7 ICP	1	0.072		*	mg/L	0.003	0.02	08/26/15 17:04	aeb
Beryllium, dissolved	M200.8 ICP-MS	1	0.00005	B	*	mg/L	0.00005	0.0003	08/26/15 17:53	mfm
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/26/15 17:04	aeb
Boron, dissolved	M200.7 ICP	1	0.02	B	*	mg/L	0.01	0.05	08/26/15 17:04	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	08/26/15 17:53	mfm
Calcium, dissolved	M200.7 ICP	1	414		*	mg/L	0.1	0.5	08/26/15 17:04	aeb
Chromium, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	08/26/15 17:04	aeb
Cobalt, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	08/27/15 18:00	aeb
Copper, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	08/26/15 17:04	aeb
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/26/15 17:04	aeb
Iron, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.05	08/26/15 17:04	aeb
Lead, dissolved	M200.8 ICP-MS	1	0.0038		*	mg/L	0.0001	0.0005	08/26/15 17:53	mfm
Lithium, dissolved	M200.7 ICP	1	0.062		*	mg/L	0.008	0.04	08/26/15 17:04	aeb
Magnesium, dissolved	M200.7 ICP	1	8.2		*	mg/L	0.2	1	08/26/15 17:04	aeb
Manganese, dissolved	M200.7 ICP	1	0.090		*	mg/L	0.005	0.03	08/26/15 17:04	aeb
Mercury, dissolved	M245.1 CVAA	1		U	*	mg/L	0.0002	0.001	08/27/15 13:37	mfm
Molybdenum, dissolved	M200.7 ICP	1	0.03	B	*	mg/L	0.02	0.1	08/26/15 17:04	aeb
Nickel, dissolved	M200.7 ICP	1		U	*	mg/L	0.008	0.04	08/26/15 17:04	aeb
Potassium, dissolved	M200.7 ICP	1	6.2		*	mg/L	0.2	1	08/26/15 17:04	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/26/15 17:04	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0006		*	mg/L	0.0001	0.0003	08/26/15 17:53	mfm
Silver, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.03	08/27/15 18:00	aeb
Sodium, dissolved	M200.7 ICP	1	48.3		*	mg/L	0.2	1	08/26/15 17:04	aeb
Strontium, dissolved	M200.7 ICP	1	3.660		*	mg/L	0.005	0.03	08/26/15 17:04	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	08/26/15 17:53	mfm
Tin, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/26/15 17:04	aeb
Titanium, dissolved	M200.7 ICP	1		U	*	mg/L	0.005	0.03	08/26/15 17:04	aeb
Vanadium, dissolved	M200.7 ICP	1		U	*	mg/L	0.005	0.03	08/26/15 17:04	aeb
Zinc, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	08/26/15 17:04	aeb

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC 15-1/3300-3874/KINETIC-HCT WEEK 0

ACZ Sample ID: **L25368-02**

Date Sampled: 08/25/15 17:00

Date Received: 07/09/15

Sample Matrix: Leachate

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity--Humidity Cell Test	SM2510B	1	1790		*	umhos/cm	1	10	08/24/15 16:15	arc
End of leach volumes and mass	D5744-12									
Interstitial Weight		1	111			g			08/25/15 0:00	arc
Leachate Volume Added		1	1000			mL			08/25/15 0:00	arc
Leachate Volume Recovered		1	933			g			08/25/15 0:00	arc
Oxidation Reduction Potential (Eh)	D1498-08	1	418		*	mv	1	1	08/24/15 16:26	arc
pH, Humidity Cell Test	M9045D/M9040C									
pH		1	7.0			units	0.1	0.1	08/24/15 0:00	arc
pH measured at		1	21.1			C	0.1	0.1	08/24/15 0:00	arc

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acidity as CaCO ₃	SM2310B - Titration	1		U	*	mg/L	10	20	09/07/15 11:33	sck
Alkalinity as CaCO ₃	SM2320B - Titration									
Bicarbonate as CaCO ₃		1	11.9	B	*	mg/L	2	20	09/02/15 0:00	tms
Carbonate as CaCO ₃		1		U	*	mg/L	2	20	09/02/15 0:00	tms
Hydroxide as CaCO ₃		1		U	*	mg/L	2	20	09/02/15 0:00	tms
Total Alkalinity		1	11.9	B	*	mg/L	2	20	09/02/15 0:00	tms
Sulfate	D516-02/-07 - Turbidimetric	50	990		*	mg/L	50	250	08/27/15 13:54	mss2

Arizona license number: **AZ0102**

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC 15-1/3300-3874/KINETIC-HCT WEEK 1

ACZ Sample ID: **L25368-03**

Date Sampled: 09/01/15 17:00

Date Received: 07/09/15

Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U	*	mg/L	0.03	0.2	09/04/15 22:47	aeb
Antimony, dissolved	M200.8 ICP-MS	1	0.0006	B	*	mg/L	0.0004	0.002	09/04/15 17:36	msh
Arsenic, dissolved	M200.8 ICP-MS	1	0.0002	B	*	mg/L	0.0002	0.001	09/04/15 17:36	msh
Barium, dissolved	M200.7 ICP	1	0.058		*	mg/L	0.003	0.02	09/04/15 22:47	aeb
Beryllium, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.00005	0.0003	09/04/15 17:36	msh
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	09/04/15 22:47	aeb
Boron, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	09/04/15 22:47	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	09/04/15 17:36	msh
Calcium, dissolved	M200.7 ICP	1	378		*	mg/L	0.1	0.5	09/04/15 22:47	aeb
Chromium, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	09/04/15 22:47	aeb
Cobalt, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	09/04/15 22:47	aeb
Copper, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	09/04/15 22:47	aeb
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/04/15 22:47	aeb
Iron, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.05	09/04/15 22:47	aeb
Lead, dissolved	M200.8 ICP-MS	1	0.0035		*	mg/L	0.0001	0.0005	09/04/15 17:36	msh
Lithium, dissolved	M200.7 ICP	1	0.035	B	*	mg/L	0.008	0.04	09/04/15 22:47	aeb
Magnesium, dissolved	M200.7 ICP	1	7.8		*	mg/L	0.2	1	09/04/15 22:47	aeb
Manganese, dissolved	M200.7 ICP	1	0.105		*	mg/L	0.005	0.03	09/04/15 22:47	aeb
Mercury, dissolved	M245.1 CVAA	1		U	*	mg/L	0.0002	0.001	09/29/15 13:46	pta
Molybdenum, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.1	09/04/15 22:47	aeb
Nickel, dissolved	M200.7 ICP	1		U	*	mg/L	0.008	0.04	09/04/15 22:47	aeb
Potassium, dissolved	M200.7 ICP	1	4.3		*	mg/L	0.2	1	09/04/15 22:47	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/04/15 22:47	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0005		*	mg/L	0.0001	0.0003	09/04/15 17:36	msh
Silver, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.03	09/04/15 22:47	aeb
Sodium, dissolved	M200.7 ICP	1	24.8		*	mg/L	0.2	1	09/04/15 22:47	aeb
Strontium, dissolved	M200.7 ICP	1	3.690		*	mg/L	0.005	0.03	09/04/15 22:47	aeb
Thallium, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	09/04/15 17:36	msh
Tin, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	09/05/15 10:12	aeb
Titanium, dissolved	M200.7 ICP	1		U	*	mg/L	0.005	0.03	09/04/15 22:47	aeb
Vanadium, dissolved	M200.7 ICP	1		U	*	mg/L	0.005	0.03	09/04/15 22:47	aeb
Zinc, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	09/04/15 22:47	aeb

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC 15-1/3300-3874/KINETIC-HCT WEEK 1

ACZ Sample ID: **L25368-03**

Date Sampled: 09/01/15 17:00

Date Received: 07/09/15

Sample Matrix: *Leachate*

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity--Humidity Cell Test	SM2510B	1	1700		*	umhos/cm	1	10	09/01/15 16:15	arc
End of leach volumes and mass	D5744-12									
Interstitial Weight		1	102			g			08/31/15 0:00	arc
Leachate Volume Added		1	1000			mL			08/31/15 0:00	arc
Leachate Volume Recovered		1	895			g			08/31/15 0:00	arc
Oxidation Reduction Potential (Eh)	D1498-08	1	421		*	mv	1	1	09/01/15 16:26	arc
pH, Humidity Cell Test	M9045D/M9040C									
pH		1	6.5			units	0.1	0.1	09/01/15 0:00	arc
pH measured at		1	20.6			C	0.1	0.1	09/01/15 0:00	arc

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acidity as CaCO ₃	SM2310B - Titration	1		U	*	mg/L	10	20	09/09/15 10:32	sck
Alkalinity as CaCO ₃	SM2320B - Titration									
Bicarbonate as CaCO ₃		1	7.8	B	*	mg/L	2	20	09/10/15 0:00	enb
Carbonate as CaCO ₃		1		U	*	mg/L	2	20	09/10/15 0:00	enb
Hydroxide as CaCO ₃		1		U	*	mg/L	2	20	09/10/15 0:00	enb
Total Alkalinity		1	7.8	B	*	mg/L	2	20	09/10/15 0:00	enb
Sulfate	D516-02/-07 - Turbidimetric	50	1000		*	mg/L	50	250	09/03/15 11:39	bsu

Arizona license number: **AZ0102**

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC 15-1/3300-3874/KINETIC-HCT WEEK 2

ACZ Sample ID: **L25368-04**

Date Sampled: 09/08/15 17:00

Date Received: 07/09/15

Sample Matrix: Leachate

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	1	0.0003	B	*	mg/L	0.0002	0.001	09/11/15 13:01	mfm
Cadmium, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	09/11/15 13:01	mfm
Copper, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	09/15/15 11:23	aeb
Iron, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.05	09/15/15 11:23	aeb
Lead, dissolved	M200.8 ICP-MS	1	0.0022		*	mg/L	0.0001	0.0005	09/11/15 13:01	mfm
Zinc, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	09/15/15 11:23	aeb

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity--Humidity Cell Test	SM2510B	1	1600		*	umhos/cm	1	10	09/07/15 16:15	arc
End of leach volumes and mass	D5744-12									
Interstitial Weight		1	98			g			09/08/15 0:00	arc
Leachate Volume Added		1	1000			mL			09/08/15 0:00	arc
Leachate Volume Recovered		1	896			g			09/08/15 0:00	arc
Oxidation Reduction Potential (Eh)	D1498-08	1	510		*	mv	1	1	09/07/15 16:26	arc
pH, Humidity Cell Test	M9045D/M9040C									
pH		1	6.3			units	0.1	0.1	09/07/15 0:00	arc
pH measured at		1	20.9			C	0.1	0.1	09/07/15 0:00	arc

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acidity as CaCO ₃	SM2310B - Titration	1		U	*	mg/L	10	20	09/16/15 14:44	enb
Alkalinity as CaCO ₃	SM2320B - Titration									
Bicarbonate as CaCO ₃		1	7.7	B	*	mg/L	2	20	09/10/15 0:00	enb
Carbonate as CaCO ₃		1		U	*	mg/L	2	20	09/10/15 0:00	enb
Hydroxide as CaCO ₃		1		U	*	mg/L	2	20	09/10/15 0:00	enb
Total Alkalinity		1	7.7	B	*	mg/L	2	20	09/10/15 0:00	enb
Sulfate	D516-02/-07 - Turbidimetric	50	939			mg/L	50	250	09/10/15 14:01	mss2

Arizona license number: **AZ0102**

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC 15-1/3300-3874/KINETIC-HCT WEEK 3

ACZ Sample ID: **L25368-05**

Date Sampled: 09/15/15 17:00

Date Received: 07/09/15

Sample Matrix: Leachate

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0002	0.001	09/17/15 18:43	mfm
Cadmium, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	09/17/15 18:43	mfm
Copper, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	09/18/15 21:48	aeb
Iron, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.05	09/18/15 21:48	aeb
Lead, dissolved	M200.8 ICP-MS	1	0.0012		*	mg/L	0.0001	0.0005	09/17/15 18:43	mfm
Zinc, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	09/18/15 21:48	aeb

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity--Humidity Cell Test	SM2510B	1	1530		*	umhos/cm	1	10	09/14/15 16:15	arc
End of leach volumes and mass	D5744-12									
Interstitial Weight		1	71			g			09/15/15 0:00	arc
Leachate Volume Added		1	1000			mL			09/15/15 0:00	arc
Leachate Volume Recovered		1	923			g			09/15/15 0:00	arc
Oxidation Reduction Potential (Eh)	D1498-08	1	355		*	mv	1	1	09/14/15 16:24	arc
pH, Humidity Cell Test	M9045D/M9040C									
pH		1	6.4			units	0.1	0.1	09/14/15 0:00	arc
pH measured at		1	20.8			C	0.1	0.1	09/14/15 0:00	arc

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acidity as CaCO ₃	SM2310B - Titration	1		U	*	mg/L	10	20	09/25/15 13:51	sck
Alkalinity as CaCO ₃	SM2320B - Titration									
Bicarbonate as CaCO ₃		1	6.4	B	*	mg/L	2	20	09/23/15 0:00	enb
Carbonate as CaCO ₃		1		U	*	mg/L	2	20	09/23/15 0:00	enb
Hydroxide as CaCO ₃		1		U	*	mg/L	2	20	09/23/15 0:00	enb
Total Alkalinity		1	6.4	B	*	mg/L	2	20	09/23/15 0:00	enb
Sulfate	D516-02/-07 - Turbidimetric	50	848			mg/L	50	250	09/17/15 11:34	mss2

Arizona license number: **AZ0102**

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC 15-1/3300-3874/KINETIC-HCT WEEK 4

ACZ Sample ID: **L25368-06**

Date Sampled: 09/22/15 17:00

Date Received: 07/09/15

Sample Matrix: Leachate

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0002	0.001	09/23/15 12:59	mfm
Cadmium, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	09/23/15 12:59	mfm
Copper, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	09/25/15 17:24	aeb
Iron, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.05	09/25/15 17:24	aeb
Lead, dissolved	M200.8 ICP-MS	1	0.0009		*	mg/L	0.0001	0.0005	09/23/15 12:59	mfm
Zinc, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	09/25/15 17:24	aeb

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity--Humidity Cell Test	SM2510B	1	1330		*	umhos/cm	1	10	09/21/15 16:15	arc
End of leach volumes and mass	D5744-12									
Interstitial Weight		1	63			g			09/21/15 0:00	arc
Leachate Volume Added		1	1000			mL			09/21/15 0:00	arc
Leachate Volume Recovered		1	929			g			09/21/15 0:00	arc
Oxidation Reduction Potential (Eh)	D1498-08	1	238		*	mv	1	1	09/21/15 16:24	arc
pH, Humidity Cell Test	M9045D/M9040C									
pH		1	6.4			units	0.1	0.1	09/21/15 0:00	arc
pH measured at		1	20.4			C	0.1	0.1	09/21/15 0:00	arc

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acidity as CaCO ₃	SM2310B - Titration	1		U	*	mg/L	10	20	09/25/15 14:05	sck
Alkalinity as CaCO ₃	SM2320B - Titration									
Bicarbonate as CaCO ₃		1	6.0	B	*	mg/L	2	20	09/28/15 0:00	enb
Carbonate as CaCO ₃		1		U	*	mg/L	2	20	09/28/15 0:00	enb
Hydroxide as CaCO ₃		1		U	*	mg/L	2	20	09/28/15 0:00	enb
Total Alkalinity		1	6.0	B	*	mg/L	2	20	09/28/15 0:00	enb
Sulfate	D516-02/-07 - Turbidimetric	20	749			mg/L	20	100	09/28/15 11:39	mss2

Arizona license number: **AZ0102**

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC 15-1/3300-3874/KINETIC-HCT WEEK 5

ACZ Sample ID: **L25368-07**

Date Sampled: 09/29/15 17:00

Date Received: 07/09/15

Sample Matrix: Leachate

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0002	0.001	10/01/15 15:31	mfm
Cadmium, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	10/01/15 15:31	mfm
Copper, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	10/02/15 23:56	aeb
Iron, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.05	10/02/15 23:56	aeb
Lead, dissolved	M200.8 ICP-MS	1	0.0010		*	mg/L	0.0001	0.0005	10/01/15 15:31	mfm
Zinc, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	10/02/15 23:56	aeb

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity--Humidity Cell Test	SM2510B	1	1190		*	umhos/cm	1	10	09/28/15 16:15	arc
End of leach volumes and mass	D5744-12									
Interstitial Weight		1	61			g			09/28/15 0:00	arc
Leachate Volume Added		1	1000			mL			09/28/15 0:00	arc
Leachate Volume Recovered		1	928			g			09/28/15 0:00	arc
Oxidation Reduction Potential (Eh)	D1498-08	1	487		*	mv	1	1	09/28/15 16:24	arc
pH, Humidity Cell Test	M9045D/M9040C									
pH		1	6.2			units	0.1	0.1	09/28/15 0:00	arc
pH measured at		1	19.4			C	0.1	0.1	09/28/15 0:00	arc

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acidity as CaCO ₃	SM2310B - Titration	1		U	*	mg/L	10	20	09/30/15 12:06	sck
Alkalinity as CaCO ₃	SM2320B - Titration									
Bicarbonate as CaCO ₃		1	5.7	B	*	mg/L	2	20	10/05/15 0:00	enb
Carbonate as CaCO ₃		1		U	*	mg/L	2	20	10/05/15 0:00	enb
Hydroxide as CaCO ₃		1		U	*	mg/L	2	20	10/05/15 0:00	enb
Total Alkalinity		1	5.7	B	*	mg/L	2	20	10/05/15 0:00	enb
Sulfate	D516-02/-07 - Turbidimetric	20	735		*	mg/L	20	100	10/02/15 10:05	mss2

Arizona license number: **AZ0102**

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC 15-1/3300-3874/KINETIC-HCT WEEK 6

ACZ Sample ID: **L25368-08**

Date Sampled: 10/06/15 17:00

Date Received: 07/09/15

Sample Matrix: Leachate

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1		U	*	mg/L	0.03	0.2	10/09/15 21:24	jjc
Antimony, dissolved	M200.8 ICP-MS	1	0.0006	B	*	mg/L	0.0004	0.002	10/13/15 16:17	mfm
Arsenic, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0002	0.001	10/07/15 21:30	mfm
Barium, dissolved	M200.7 ICP	1	0.052		*	mg/L	0.003	0.02	10/09/15 21:24	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.00005	0.0003	10/07/15 21:30	mfm
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	10/10/15 16:12	aeb
Boron, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	10/10/15 16:12	aeb
Cadmium, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	10/07/15 21:30	mfm
Calcium, dissolved	M200.7 ICP	1	308		*	mg/L	0.1	0.5	10/10/15 16:12	aeb
Chromium, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	10/09/15 21:24	jjc
Cobalt, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	10/09/15 21:24	jjc
Copper, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	10/09/15 21:24	jjc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	10/09/15 21:24	jjc
Iron, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.05	10/09/15 21:24	jjc
Lead, dissolved	M200.8 ICP-MS	1	0.0012		*	mg/L	0.0001	0.0005	10/07/15 21:30	mfm
Lithium, dissolved	M200.7 ICP	1	0.008	B	*	mg/L	0.008	0.04	10/09/15 21:24	jjc
Magnesium, dissolved	M200.7 ICP	1	2.5		*	mg/L	0.2	1	10/10/15 16:12	aeb
Manganese, dissolved	M200.7 ICP	1	0.065		*	mg/L	0.005	0.03	10/09/15 21:24	jjc
Mercury, dissolved	M245.1 CVAA	1		U	*	mg/L	0.0002	0.001	10/10/15 14:36	pta
Molybdenum, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.1	10/09/15 21:24	jjc
Nickel, dissolved	M200.7 ICP	1		U	*	mg/L	0.008	0.04	10/09/15 21:24	jjc
Potassium, dissolved	M200.7 ICP	1	2.4		*	mg/L	0.2	1	10/10/15 16:12	aeb
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	10/09/15 21:24	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0003		*	mg/L	0.0001	0.0003	10/07/15 21:30	mfm
Silver, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.03	10/09/15 21:24	jjc
Sodium, dissolved	M200.7 ICP	1	0.9	B	*	mg/L	0.2	1	10/09/15 21:24	jjc
Strontium, dissolved	M200.7 ICP	1	3.260		*	mg/L	0.005	0.03	10/09/15 21:24	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	10/07/15 21:30	mfm
Tin, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	10/09/15 21:24	jjc
Titanium, dissolved	M200.7 ICP	1	0.013	B	*	mg/L	0.005	0.03	10/09/15 21:24	jjc
Vanadium, dissolved	M200.7 ICP	1		U	*	mg/L	0.005	0.03	10/09/15 21:24	jjc
Zinc, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	10/09/15 21:24	jjc

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC 15-1/3300-3874/KINETIC-HCT WEEK 6

ACZ Sample ID: **L25368-08**

Date Sampled: 10/06/15 17:00

Date Received: 07/09/15

Sample Matrix: Leachate

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity--Humidity Cell Test	SM2510B	1	1290		*	umhos/cm	1	10	10/05/15 16:15	arc
End of leach volumes and mass	D5744-12									
Interstitial Weight		1	57			g			10/06/15 0:00	arc
Leachate Volume Added		1	1000			mL			10/06/15 0:00	arc
Leachate Volume Recovered		1	931			g			10/06/15 0:00	arc
Oxidation Reduction Potential (Eh)	D1498-08	1	388		*	mv	1	1	10/05/15 16:24	arc
pH, Humidity Cell Test	M9045D/M9040C									
pH		1	6.2			units	0.1	0.1	10/05/15 0:00	arc
pH measured at		1	20.0			C	0.1	0.1	10/05/15 0:00	arc

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acidity as CaCO ₃	SM2310B - Titration	1		U	*	mg/L	10	20	10/19/15 12:39	sck
Alkalinity as CaCO ₃	SM2320B - Titration									
Bicarbonate as CaCO ₃		1	5.7	B	*	mg/L	2	20	10/07/15 0:00	enb
Carbonate as CaCO ₃		1		U	*	mg/L	2	20	10/07/15 0:00	enb
Hydroxide as CaCO ₃		1		U	*	mg/L	2	20	10/07/15 0:00	enb
Total Alkalinity		1	5.7	B	*	mg/L	2	20	10/07/15 0:00	enb
Sulfate	D516-02/-07 - Turbidimetric	20	786			mg/L	20	100	10/07/15 15:10	mss2

Arizona license number: **AZ0102**

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC 15-1/3300-3874/KINETIC-HCT WEEK 7

ACZ Sample ID: **L25368-09**

Date Sampled: 10/13/15 00:00

Date Received: 07/09/15

Sample Matrix: Leachate

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS	1	0.0002	B	*	mg/L	0.0002	0.001	10/16/15 1:41	mfm
Cadmium, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	10/16/15 1:41	mfm
Copper, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	10/15/15 23:17	jjc
Iron, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.05	10/15/15 23:17	jjc
Lead, dissolved	M200.8 ICP-MS	1	0.0008		*	mg/L	0.0001	0.0005	10/16/15 1:41	mfm
Zinc, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	10/15/15 23:17	jjc

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity--Humidity Cell Test	SM2510B	1	1240		*	umhos/cm	1	10	10/12/15 16:15	arc
End of leach volumes and mass	D5744-12									
Interstitial Weight			*****							NEED
Leachate Volume Added			*****							NEED
Leachate Volume Recovered			*****							NEED
Oxidation Reduction Potential (Eh)	D1498-08	1	329		*	mv	1	1	10/12/15 16:24	arc
pH, Humidity Cell Test	M9045D/M9040C									
pH		1	6.2			units	0.1	0.1	10/12/15 0:00	arc
pH measured at		1	19.7			C	0.1	0.1	10/12/15 0:00	arc

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acidity as CaCO ₃			*****							NEED
Alkalinity as CaCO ₃	SM2320B - Titration									
Bicarbonate as CaCO ₃		1	6.1	B	*	mg/L	2	20	10/16/15 0:00	enb
Carbonate as CaCO ₃		1		U	*	mg/L	2	20	10/16/15 0:00	enb
Hydroxide as CaCO ₃		1		U	*	mg/L	2	20	10/16/15 0:00	enb
Total Alkalinity		1	6.1	B	*	mg/L	2	20	10/16/15 0:00	enb
Sulfate	D516-02/-07 - Turbidimetric	20	741		*	mg/L	20	100	10/20/15 12:53	spl

Arizona license number: **AZ0102**

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC 15-1/3300-3874/KINETIC-HCT WEEK 8

ACZ Sample ID: **L25368-10**

Date Sampled: 10/20/15 17:00

Date Received: 07/09/15

Sample Matrix: Leachate

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	WG392794		*****							WIP
Cadmium, dissolved	WG392794		*****							WIP
Copper, dissolved			*****							NEED
Iron, dissolved			*****							NEED
Lead, dissolved	WG392794		*****							WIP
Zinc, dissolved			*****							NEED

Soil Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Conductivity--Humidity Cell Test			*****							NEED
End of leach volumes and mass	D5744-12									
Interstitial Weight			*****							NEED
Leachate Volume Added			*****							NEED
Leachate Volume Recovered			*****							NEED
Oxidation Reduction Potential (Eh)			*****							NEED
pH, Humidity Cell Test	M9045D/M9040C									
pH			*****							NEED
pH measured at			*****							NEED

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Acidity as CaCO ₃			*****							NEED
Alkalinity as CaCO ₃	SM2320B - Titration									
Bicarbonate as CaCO ₃			*****							WIP
Carbonate as CaCO ₃			*****							WIP
Hydroxide as CaCO ₃			*****							WIP
Total Alkalinity			*****							WIP
Sulfate			*****							NEED

Arizona license number: AZ0102

Report Header Explanations

<i>Batch</i>	A distinct set of samples analyzed at a specific time
<i>Found</i>	Value of the QC Type of interest
<i>Limit</i>	Upper limit for RPD, in %.
<i>Lower</i>	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
<i>MDL</i>	Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #5). Allows for instrument and annual fluctuations.
<i>PCN/SCN</i>	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
<i>PQL</i>	Practical Quantitation Limit. Synonymous with the EPA term "minimum level".
<i>QC</i>	True Value of the Control Sample or the amount added to the Spike
<i>Rec</i>	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
<i>RPD</i>	Relative Percent Difference, calculation used for Duplicate QC Types
<i>Upper</i>	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
<i>Sample</i>	Value of the Sample of interest

QC Sample Types

<i>AS</i>	Analytical Spike (Post Digestion)	<i>LCSWD</i>	Laboratory Control Sample - Water Duplicate
<i>ASD</i>	Analytical Spike (Post Digestion) Duplicate	<i>LFB</i>	Laboratory Fortified Blank
<i>CCB</i>	Continuing Calibration Blank	<i>LFM</i>	Laboratory Fortified Matrix
<i>CCV</i>	Continuing Calibration Verification standard	<i>LFMD</i>	Laboratory Fortified Matrix Duplicate
<i>DUP</i>	Sample Duplicate	<i>LRB</i>	Laboratory Reagent Blank
<i>ICB</i>	Initial Calibration Blank	<i>MS</i>	Matrix Spike
<i>ICV</i>	Initial Calibration Verification standard	<i>MSD</i>	Matrix Spike Duplicate
<i>ICSAB</i>	Inter-element Correction Standard - A plus B solutions	<i>PBS</i>	Prep Blank - Soil
<i>LCSS</i>	Laboratory Control Sample - Soil	<i>PBW</i>	Prep Blank - Water
<i>LCSSD</i>	Laboratory Control Sample - Soil Duplicate	<i>PQV</i>	Practical Quantitation Verification standard
<i>LCSW</i>	Laboratory Control Sample - Water	<i>SDL</i>	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3)	EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste.
(5)	Standard Methods for the Examination of Water and Wastewater.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3)	Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5)	If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click:

<http://www.acz.com/public/extquallist.pdf>

Adrian Brown Consultants, Inc.

ACZ Project ID: L25368

Date Received: 07/09/2015 09:50

Received By: ear

Date Printed: 7/10/2015

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?	☐	☐	☒
2) Is the Chain of Custody or other directive shipping papers present?	☒	☐	☐
3) Does this project require special handling procedures such as CLP protocol?	☐	☐	☒
4) Are any samples NRC licensable material?	☐	☐	☒
5) If samples are received past hold time, proceed with requested short hold time analyses?	☒	☐	☐
6) Is the Chain of Custody complete and accurate?	☒	☐	☐
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?	☐	☒	☐

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	☒	☐	☐
9) Are all labels on containers and are they intact and legible?	☒	☐	☐
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	☒	☐	☐
11) For preserved bottle types, was the pH checked and within limits? ¹	☐	☐	☒
12) Is there sufficient sample volume to perform all requested work?	☒	☐	☐
13) Is the custody seal intact on all containers?	☐	☐	☒
14) Are samples that require zero headspace acceptable?	☐	☐	☒
15) Are all sample containers appropriate for analytical requirements?	☒	☐	☐
16) Is there an Hg-1631 trip blank present?	☐	☐	☒
17) Is there a VOA trip blank present?	☐	☐	☒
18) Were all samples received within hold time?	☒	☐	☐

Chain of Custody Related Remarks

Original COC unusable at receipt. Copy of COC used for Login.

The 'Relinquished By' field on the COC was not completed. The project manager is contacting the client.

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
NA22111	11.6	19	N/A

Was ice present in the shipment container(s)?

No - Wet or gel ice was not present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

Adrian Brown Consultants, Inc.

ACZ Project ID: L25368

Date Received: 07/09/2015 09:50

Received By: ear

Date Printed: 7/10/2015

¹ The preservation of the following bottle types is not checked at sample receipt: Orange (oil and grease), Purple (total cyanide), Pink (dissolved cyanide), Brown (arsenic speciation), Sterile (fecal coliform), EDTA (sulfite), HCl preserved vial (organics), Na₂S₂O₃ preserved vial (organics), and HG-1631 (total/dissolved mercury by method 1631).

Preliminary

ACZLaboratories, Inc. **25368**

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY**Report to:**

Name: JEFFREY WINICK

Company: SCHLUMBERGER WATER SERV.

E-mail: JWINICK@SLB.COM

Address: 1875 LAWRENCE STREET, SUITE 500
DENVER, CO 80215

Telephone: +1.303.244.8224

Copy of Report to:

Name: ADRIAN BROWN

Company: ADRIAN BROWN CONSULTANTS

E-mail: abrown@abch2o.com

Telephone: (303) 698-9080

Invoice to:

Name: ADRIAN BROWN

Company: ADRIAN BROWN CONSULTANTS

E-mail: lbrown@abch2o.com

Address: 130 W 4th Ave

Denver CO USA 80223

Telephone: (303) 698-9080

If sample(s) received past holding time (HT) or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses?
If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified.

YES ☐
NO ☐

Are samples for CC DW Compliance Monitoring?
If yes, please include state forms. Results will be reported to PQL.

YES ☐
NO ☒**PROJECT INFORMATION**

Quote #: CO HYDROGEOCHEMICAL STUDY

Project/PO #:

Reporting state for compliance testing:

Sampler's Name: Beverly Furfaro/ALS

Are any samples NRC licensable material? Yes No

ANALYSES REQUESTED (attach list or use quote number)**SAMPLE IDENTIFICATION**

DATE: TIME

Matrix

of Containers

CO-HYDROGEO-
CHEMCO-HYDROGEO-
CHEM - PRE-HCT

GHC15-1/3300-3500/Static 08-July-15:

rock 1(kg)

X

GHC15-1/3500-3700/Static 08-July-15:

rock 1(kg)

X

GHC15-1/3700-3874/Static 08-July-15:

rock 1(kg)

X

GHC15-1/3300-3874/Kineti 08-July-15:

rock 8(kg)

X

COPY

Matrix SW (Surface Water) - GW (Ground Water) - WW (Waste Water) - DW (Drinking Water) - SL (Sludge) - SO (Soil) - OL (Oil) - Other (Specify)

REMARKS

Please contact Jeff Winick at 303.244.8224 for further instructions

RELINQUISHED BY:

DATE: TIME

RECEIVED BY:

DATE: TIME

MPL

7/9/15 0950

FRMAD050.01.15.09

L25368-1510211445

White - Return with sample.

Yellow - Retain for your records.

Page 18 of 18

August 20, 2015

Report to:

Jeffrey Winick
Schlumberger Water Services
1875 Lawrence Street
Suite 500
Denver, CO 80202

Bill to:

Accounts Payable
Adrian Brown Consultants, Inc.
130 W 4th Avenue
Denver, CO 80223

cc: Adrian Brown

Project ID:

ACZ Project ID: L25803

Jeffrey Winick:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on July 31, 2015. This project has been assigned to ACZ's project number, L25803. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L25803. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after September 19, 2015. If the samples are determined to be hazardous, additional charges apply for disposal (typically \$11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.



Scott Habermehl has reviewed
and approved this report.



Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/1700-1900/STATIC

ACZ Sample ID: **L25803-01**

Date Sampled: 06/19/15 00:00

Date Received: 07/31/15

Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1	10.50		*	mg/L	0.03	0.2	08/04/15 14:52	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0004	0.002	08/11/15 20:54	mfm
Arsenic, dissolved	M200.8 ICP-MS	5		U	*	mg/L	0.001	0.005	08/13/15 10:20	mfm
Barium, dissolved	M200.7 ICP	1	0.035		*	mg/L	0.003	0.02	08/04/15 14:52	jjc
Beryllium, dissolved	M200.8 ICP-MS	5	0.0051		*	mg/L	0.0003	0.001	08/13/15 10:20	mfm
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/04/15 14:52	jjc
Boron, dissolved	M200.7 ICP	1	0.05		*	mg/L	0.01	0.05	08/04/15 14:52	jjc
Cadmium, dissolved	M200.8 ICP-MS	5	0.0250		*	mg/L	0.0005	0.003	08/13/15 10:20	mfm
Calcium, dissolved	M200.7 ICP	1	102		*	mg/L	0.1	0.5	08/04/15 14:52	jjc
Chromium, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	08/04/15 14:52	jjc
Cobalt, dissolved	M200.7 ICP	1	0.10		*	mg/L	0.01	0.05	08/04/15 14:52	jjc
Copper, dissolved	M200.7 ICP	1	0.45		*	mg/L	0.01	0.05	08/04/15 14:52	jjc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/04/15 14:52	jjc
Iron, dissolved	M200.7 ICP	1	49.20		*	mg/L	0.02	0.05	08/04/15 14:52	jjc
Lead, dissolved	M200.8 ICP-MS	5	0.9410		*	mg/L	0.0005	0.003	08/13/15 10:20	mfm
Lithium, dissolved	M200.7 ICP	1	0.024	B	*	mg/L	0.008	0.04	08/04/15 14:52	jjc
Magnesium, dissolved	M200.7 ICP	1	50.8		*	mg/L	0.2	1	08/04/15 14:52	jjc
Manganese, dissolved	M200.7 ICP	1	51.200		*	mg/L	0.005	0.03	08/04/15 14:52	jjc
Mercury, dissolved	M245.1 CVAA	1		UH	*	mg/L	0.0002	0.001	08/10/15 12:59	nco
Molybdenum, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.1	08/04/15 14:52	jjc
Nickel, dissolved	M200.7 ICP	1	0.066		*	mg/L	0.008	0.04	08/04/15 14:52	jjc
Potassium, dissolved	M200.7 ICP	1	13.1		*	mg/L	0.2	1	08/04/15 14:52	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/04/15 14:52	jjc
Selenium, dissolved	M200.8 ICP-MS	5	0.0104		*	mg/L	0.0005	0.001	08/13/15 10:20	mfm
Silver, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.03	08/04/15 14:52	jjc
Sodium, dissolved	M200.7 ICP	1	2.3		*	mg/L	0.2	1	08/04/15 14:52	jjc
Strontium, dissolved	M200.7 ICP	1	14.00		*	mg/L	0.005	0.03	08/04/15 14:52	jjc
Sulfur, dissolved	M200.7 ICP	1	323		*	mg/L	0.3	1	08/04/15 14:52	jjc
Thallium, dissolved	M200.8 ICP-MS	5	0.0006	B	*	mg/L	0.0005	0.003	08/13/15 10:20	mfm
Tin, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/04/15 14:52	jjc
Titanium, dissolved	M200.7 ICP	1		U	*	mg/L	0.005	0.03	08/04/15 14:52	jjc
Vanadium, dissolved	M200.7 ICP	1	0.007	B	*	mg/L	0.005	0.03	08/04/15 14:52	jjc
Zinc, dissolved	M200.7 ICP	1	3.73		*	mg/L	0.01	0.05	08/04/15 14:52	jjc

Arizona license number: **AZ0102**

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/1900-2100/STATIC

ACZ Sample ID: **L25803-02**

Date Sampled: 06/19/15 00:00

Date Received: 07/31/15

Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1	7.69		*	mg/L	0.03	0.2	08/04/15 15:02	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0004	0.002	08/11/15 20:57	mfm
Arsenic, dissolved	M200.8 ICP-MS	5		U	*	mg/L	0.001	0.005	08/13/15 10:29	mfm
Barium, dissolved	M200.7 ICP	1	0.021		*	mg/L	0.003	0.02	08/04/15 15:02	jjc
Beryllium, dissolved	M200.8 ICP-MS	5	0.0048		*	mg/L	0.0003	0.001	08/13/15 10:29	mfm
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/04/15 15:02	jjc
Boron, dissolved	M200.7 ICP	1	0.06		*	mg/L	0.01	0.05	08/04/15 15:02	jjc
Cadmium, dissolved	M200.8 ICP-MS	5	0.0241		*	mg/L	0.0005	0.003	08/13/15 10:29	mfm
Calcium, dissolved	M200.7 ICP	1	134		*	mg/L	0.1	0.5	08/04/15 15:02	jjc
Chromium, dissolved	M200.7 ICP	1	0.01	B	*	mg/L	0.01	0.05	08/04/15 15:02	jjc
Cobalt, dissolved	M200.7 ICP	1	0.11		*	mg/L	0.01	0.05	08/04/15 15:02	jjc
Copper, dissolved	M200.7 ICP	1	0.44		*	mg/L	0.01	0.05	08/04/15 15:02	jjc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/04/15 15:02	jjc
Iron, dissolved	M200.7 ICP	1	27.80		*	mg/L	0.02	0.05	08/04/15 15:02	jjc
Lead, dissolved	M200.8 ICP-MS	5	0.8720		*	mg/L	0.0005	0.003	08/13/15 10:29	mfm
Lithium, dissolved	M200.7 ICP	1	0.018	B	*	mg/L	0.008	0.04	08/04/15 15:02	jjc
Magnesium, dissolved	M200.7 ICP	1	69.2		*	mg/L	0.2	1	08/04/15 15:02	jjc
Manganese, dissolved	M200.7 ICP	1	38.300		*	mg/L	0.005	0.03	08/04/15 15:02	jjc
Mercury, dissolved	M245.1 CVAA	1		UH	*	mg/L	0.0002	0.001	08/10/15 13:01	nco
Molybdenum, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.1	08/04/15 15:02	jjc
Nickel, dissolved	M200.7 ICP	1	0.095		*	mg/L	0.008	0.04	08/04/15 15:02	jjc
Potassium, dissolved	M200.7 ICP	1	12.4		*	mg/L	0.2	1	08/04/15 15:02	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/04/15 15:02	jjc
Selenium, dissolved	M200.8 ICP-MS	5	0.0120		*	mg/L	0.0005	0.001	08/13/15 10:29	mfm
Silver, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.03	08/04/15 15:02	jjc
Sodium, dissolved	M200.7 ICP	1	1.5		*	mg/L	0.2	1	08/04/15 15:02	jjc
Strontium, dissolved	M200.7 ICP	1	13.400		*	mg/L	0.005	0.03	08/04/15 15:02	jjc
Sulfur, dissolved	M200.7 ICP	1	303		*	mg/L	0.3	1	08/04/15 15:02	jjc
Thallium, dissolved	M200.8 ICP-MS	5		U	*	mg/L	0.0005	0.003	08/13/15 10:29	mfm
Tin, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/04/15 15:02	jjc
Titanium, dissolved	M200.7 ICP	1		U	*	mg/L	0.005	0.03	08/04/15 15:02	jjc
Vanadium, dissolved	M200.7 ICP	1		U	*	mg/L	0.005	0.03	08/04/15 15:02	jjc
Zinc, dissolved	M200.7 ICP	1	2.95		*	mg/L	0.01	0.05	08/04/15 15:02	jjc

Arizona license number: **AZ0102**

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/2100-2300/STATIC

ACZ Sample ID: **L25803-03**

Date Sampled: 06/19/15 00:00

Date Received: 07/31/15

Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1	10.30		*	mg/L	0.03	0.2	08/04/15 15:05	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0004	0.002	08/11/15 21:00	mfm
Arsenic, dissolved	M200.8 ICP-MS	2		U	*	mg/L	0.0004	0.002	08/13/15 10:32	mfm
Barium, dissolved	M200.7 ICP	1	0.037		*	mg/L	0.003	0.02	08/04/15 15:05	jjc
Beryllium, dissolved	M200.8 ICP-MS	2	0.0039		*	mg/L	0.0001	0.0005	08/13/15 10:32	mfm
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/04/15 15:05	jjc
Boron, dissolved	M200.7 ICP	1	0.06		*	mg/L	0.01	0.05	08/04/15 15:05	jjc
Cadmium, dissolved	M200.8 ICP-MS	2	0.0094		*	mg/L	0.0002	0.001	08/13/15 10:32	mfm
Calcium, dissolved	M200.7 ICP	1	150		*	mg/L	0.1	0.5	08/04/15 15:05	jjc
Chromium, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	08/04/15 15:05	jjc
Cobalt, dissolved	M200.7 ICP	1	0.08		*	mg/L	0.01	0.05	08/04/15 15:05	jjc
Copper, dissolved	M200.7 ICP	1	0.54		*	mg/L	0.01	0.05	08/04/15 15:05	jjc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/04/15 15:05	jjc
Iron, dissolved	M200.7 ICP	1	37.30		*	mg/L	0.02	0.05	08/04/15 15:05	jjc
Lead, dissolved	M200.8 ICP-MS	2	0.5010		*	mg/L	0.0002	0.001	08/13/15 10:32	mfm
Lithium, dissolved	M200.7 ICP	1	0.019	B	*	mg/L	0.008	0.04	08/04/15 15:05	jjc
Magnesium, dissolved	M200.7 ICP	1	46.2		*	mg/L	0.2	1	08/04/15 15:05	jjc
Manganese, dissolved	M200.7 ICP	1	13.300		*	mg/L	0.005	0.03	08/04/15 15:05	jjc
Mercury, dissolved	M245.1 CVAA	1		UH	*	mg/L	0.0002	0.001	08/10/15 13:07	nco
Molybdenum, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.1	08/04/15 15:05	jjc
Nickel, dissolved	M200.7 ICP	1	0.064		*	mg/L	0.008	0.04	08/04/15 15:05	jjc
Potassium, dissolved	M200.7 ICP	1	13.1		*	mg/L	0.2	1	08/04/15 15:05	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/04/15 15:05	jjc
Selenium, dissolved	M200.8 ICP-MS	2	0.0116		*	mg/L	0.0002	0.0005	08/13/15 10:32	mfm
Silver, dissolved	M200.7 ICP	1	0.01	B	*	mg/L	0.01	0.03	08/04/15 15:05	jjc
Sodium, dissolved	M200.7 ICP	1	1.4		*	mg/L	0.2	1	08/04/15 15:05	jjc
Strontium, dissolved	M200.7 ICP	1	10.00		*	mg/L	0.005	0.03	08/04/15 15:05	jjc
Sulfur, dissolved	M200.7 ICP	1	325		*	mg/L	0.3	1	08/04/15 15:05	jjc
Thallium, dissolved	M200.8 ICP-MS	2	0.0003	B	*	mg/L	0.0002	0.001	08/13/15 10:32	mfm
Tin, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/04/15 15:05	jjc
Titanium, dissolved	M200.7 ICP	1		U	*	mg/L	0.005	0.03	08/04/15 15:05	jjc
Vanadium, dissolved	M200.7 ICP	1	0.006	B	*	mg/L	0.005	0.03	08/04/15 15:05	jjc
Zinc, dissolved	M200.7 ICP	1	1.37		*	mg/L	0.01	0.05	08/04/15 15:05	jjc

Arizona license number: AZ0102

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/2300-2500/STATIC

ACZ Sample ID: **L25803-04**

Date Sampled: 06/19/15 00:00

Date Received: 07/31/15

Sample Matrix: Leachate

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1	6.39		*	mg/L	0.03	0.2	08/04/15 15:09	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0004	0.002	08/11/15 21:03	mfm
Arsenic, dissolved	M200.8 ICP-MS	1	0.0004	B	*	mg/L	0.0002	0.001	08/13/15 10:35	mfm
Barium, dissolved	M200.7 ICP	1	0.035		*	mg/L	0.003	0.02	08/04/15 15:09	jjc
Beryllium, dissolved	M200.8 ICP-MS	1	0.00177		*	mg/L	0.00005	0.0003	08/13/15 10:35	mfm
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/04/15 15:09	jjc
Boron, dissolved	M200.7 ICP	1	0.07		*	mg/L	0.01	0.05	08/04/15 15:09	jjc
Cadmium, dissolved	M200.8 ICP-MS	1	0.0173		*	mg/L	0.0001	0.0005	08/13/15 10:35	mfm
Calcium, dissolved	M200.7 ICP	1	178		*	mg/L	0.1	0.5	08/04/15 15:09	jjc
Chromium, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	08/04/15 15:09	jjc
Cobalt, dissolved	M200.7 ICP	1	0.07		*	mg/L	0.01	0.05	08/04/15 15:09	jjc
Copper, dissolved	M200.7 ICP	1	0.19		*	mg/L	0.01	0.05	08/04/15 15:09	jjc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/04/15 15:09	jjc
Iron, dissolved	M200.7 ICP	1	11.60		*	mg/L	0.02	0.05	08/04/15 15:09	jjc
Lead, dissolved	M200.8 ICP-MS	1	0.3675		*	mg/L	0.0001	0.0005	08/11/15 21:03	mfm
Lithium, dissolved	M200.7 ICP	1	0.010	B	*	mg/L	0.008	0.04	08/04/15 15:09	jjc
Magnesium, dissolved	M200.7 ICP	1	53		*	mg/L	0.2	1	08/04/15 15:09	jjc
Manganese, dissolved	M200.7 ICP	1	16.600		*	mg/L	0.005	0.03	08/04/15 15:09	jjc
Mercury, dissolved	M245.1 CVAA	1		UH	*	mg/L	0.0002	0.001	08/10/15 13:09	nco
Molybdenum, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.1	08/04/15 15:09	jjc
Nickel, dissolved	M200.7 ICP	1	0.062		*	mg/L	0.008	0.04	08/04/15 15:09	jjc
Potassium, dissolved	M200.7 ICP	1	10.2		*	mg/L	0.2	1	08/04/15 15:09	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/04/15 15:09	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0090		*	mg/L	0.0001	0.0003	08/13/15 10:35	mfm
Silver, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.03	08/04/15 15:09	jjc
Sodium, dissolved	M200.7 ICP	1	1.5		*	mg/L	0.2	1	08/04/15 15:09	jjc
Strontium, dissolved	M200.7 ICP	1	7.220		*	mg/L	0.005	0.03	08/04/15 15:09	jjc
Sulfur, dissolved	M200.7 ICP	1	284		*	mg/L	0.3	1	08/04/15 15:09	jjc
Thallium, dissolved	M200.8 ICP-MS	1	0.0002	B	*	mg/L	0.0001	0.0005	08/18/15 13:58	msh
Tin, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/04/15 15:09	jjc
Titanium, dissolved	M200.7 ICP	1		U	*	mg/L	0.005	0.03	08/04/15 15:09	jjc
Vanadium, dissolved	M200.7 ICP	1	0.005	B	*	mg/L	0.005	0.03	08/04/15 15:09	jjc
Zinc, dissolved	M200.7 ICP	1	2.28		*	mg/L	0.01	0.05	08/04/15 15:09	jjc

Arizona license number: **AZ0102**

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/1700-2500/KINETIC

ACZ Sample ID: **L25803-05**

Date Sampled: 06/19/15 00:00

Date Received: 07/31/15

Sample Matrix: Leachate

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1	5.48		*	mg/L	0.03	0.2	08/04/15 15:12	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0004	0.002	08/11/15 21:11	mfm
Arsenic, dissolved	M200.8 ICP-MS	2		U	*	mg/L	0.0004	0.002	08/13/15 10:38	mfm
Barium, dissolved	M200.7 ICP	1	0.043		*	mg/L	0.003	0.02	08/04/15 15:12	jjc
Beryllium, dissolved	M200.8 ICP-MS	2	0.0033		*	mg/L	0.0001	0.0005	08/13/15 10:38	mfm
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/04/15 15:12	jjc
Boron, dissolved	M200.7 ICP	1	0.03	B	*	mg/L	0.01	0.05	08/04/15 15:12	jjc
Cadmium, dissolved	M200.8 ICP-MS	2	0.0110		*	mg/L	0.0002	0.001	08/13/15 10:38	mfm
Calcium, dissolved	M200.7 ICP	1	116		*	mg/L	0.1	0.5	08/04/15 15:12	jjc
Chromium, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	08/04/15 15:12	jjc
Cobalt, dissolved	M200.7 ICP	1	0.12		*	mg/L	0.01	0.05	08/04/15 15:12	jjc
Copper, dissolved	M200.7 ICP	1	0.35		*	mg/L	0.01	0.05	08/04/15 15:12	jjc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/04/15 15:12	jjc
Iron, dissolved	M200.7 ICP	1	19.90		*	mg/L	0.02	0.05	08/04/15 15:12	jjc
Lead, dissolved	M200.8 ICP-MS	2	0.5502		*	mg/L	0.0002	0.001	08/13/15 10:38	mfm
Lithium, dissolved	M200.7 ICP	1	0.012	B	*	mg/L	0.008	0.04	08/04/15 15:12	jjc
Magnesium, dissolved	M200.7 ICP	1	53		*	mg/L	0.2	1	08/04/15 15:12	jjc
Manganese, dissolved	M200.7 ICP	1	29.300		*	mg/L	0.005	0.03	08/04/15 15:12	jjc
Mercury, dissolved	M245.1 CVAA	1		UH	*	mg/L	0.0002	0.001	08/10/15 13:11	nco
Molybdenum, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.1	08/04/15 15:12	jjc
Nickel, dissolved	M200.7 ICP	1	0.062		*	mg/L	0.008	0.04	08/04/15 15:12	jjc
Potassium, dissolved	M200.7 ICP	1	8.3		*	mg/L	0.2	1	08/04/15 15:12	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/04/15 15:12	jjc
Selenium, dissolved	M200.8 ICP-MS	2	0.0074		*	mg/L	0.0002	0.0005	08/13/15 10:38	mfm
Silver, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.03	08/04/15 15:12	jjc
Sodium, dissolved	M200.7 ICP	1	1.1		*	mg/L	0.2	1	08/04/15 15:12	jjc
Strontium, dissolved	M200.7 ICP	1	7.200		*	mg/L	0.005	0.03	08/04/15 15:12	jjc
Sulfur, dissolved	M200.7 ICP	1	252		*	mg/L	0.3	1	08/04/15 15:12	jjc
Thallium, dissolved	M200.8 ICP-MS	2	0.0002	B	*	mg/L	0.0002	0.001	08/13/15 10:38	mfm
Tin, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/04/15 15:12	jjc
Titanium, dissolved	M200.7 ICP	1		U	*	mg/L	0.005	0.03	08/04/15 15:12	jjc
Vanadium, dissolved	M200.7 ICP	1		U	*	mg/L	0.005	0.03	08/04/15 15:12	jjc
Zinc, dissolved	M200.7 ICP	1	1.57		*	mg/L	0.01	0.05	08/04/15 15:12	jjc

Arizona license number: AZ0102

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC-15-1/100-300/STATIC C

ACZ Sample ID: **L25803-06**

Date Sampled: 06/15/15 00:00

Date Received: 07/31/15

Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1	11.80		*	mg/L	0.03	0.2	08/04/15 15:15	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0004	0.002	08/11/15 21:14	mfm
Arsenic, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0002	0.001	08/13/15 10:41	mfm
Barium, dissolved	M200.7 ICP	1	0.043		*	mg/L	0.003	0.02	08/04/15 15:15	jjc
Beryllium, dissolved	M200.8 ICP-MS	1	0.00117		*	mg/L	0.00005	0.0003	08/13/15 10:41	mfm
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/04/15 15:15	jjc
Boron, dissolved	M200.7 ICP	1	0.09		*	mg/L	0.01	0.05	08/04/15 15:15	jjc
Cadmium, dissolved	M200.8 ICP-MS	1	0.0018		*	mg/L	0.0001	0.0005	08/13/15 10:41	mfm
Calcium, dissolved	M200.7 ICP	1	2.2		*	mg/L	0.1	0.5	08/04/15 15:15	jjc
Chromium, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	08/04/15 15:15	jjc
Cobalt, dissolved	M200.7 ICP	1	0.04	B	*	mg/L	0.01	0.05	08/04/15 15:15	jjc
Copper, dissolved	M200.7 ICP	1	0.22		*	mg/L	0.01	0.05	08/04/15 15:15	jjc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/04/15 15:15	jjc
Iron, dissolved	M200.7 ICP	1	1.40		*	mg/L	0.02	0.05	08/04/15 15:15	jjc
Lead, dissolved	M200.8 ICP-MS	1	0.0007		*	mg/L	0.0001	0.0005	08/11/15 21:14	mfm
Lithium, dissolved	M200.7 ICP	1	0.015	B	*	mg/L	0.008	0.04	08/04/15 15:15	jjc
Magnesium, dissolved	M200.7 ICP	1	0.7	B	*	mg/L	0.2	1	08/04/15 15:15	jjc
Manganese, dissolved	M200.7 ICP	1	0.238		*	mg/L	0.005	0.03	08/04/15 15:15	jjc
Mercury, dissolved	M245.1 CVAA	1		UH	*	mg/L	0.0002	0.001	08/10/15 13:13	nco
Molybdenum, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.1	08/04/15 15:15	jjc
Nickel, dissolved	M200.7 ICP	1	0.021	B	*	mg/L	0.008	0.04	08/04/15 15:15	jjc
Potassium, dissolved	M200.7 ICP	1	11.1		*	mg/L	0.2	1	08/04/15 15:15	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/04/15 15:15	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0062		*	mg/L	0.0001	0.0003	08/13/15 10:41	mfm
Silver, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.03	08/04/15 15:15	jjc
Sodium, dissolved	M200.7 ICP	1	0.8	B	*	mg/L	0.2	1	08/04/15 15:15	jjc
Strontium, dissolved	M200.7 ICP	1	0.526		*	mg/L	0.005	0.03	08/04/15 15:15	jjc
Sulfur, dissolved	M200.7 ICP	1	55.5		*	mg/L	0.3	1	08/04/15 15:15	jjc
Thallium, dissolved	M200.8 ICP-MS	1	0.0014		*	mg/L	0.0001	0.0005	08/13/15 10:41	mfm
Tin, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/04/15 15:15	jjc
Titanium, dissolved	M200.7 ICP	1		U	*	mg/L	0.005	0.03	08/04/15 15:15	jjc
Vanadium, dissolved	M200.7 ICP	1		U	*	mg/L	0.005	0.03	08/04/15 15:15	jjc
Zinc, dissolved	M200.7 ICP	1	0.10		*	mg/L	0.01	0.05	08/04/15 15:15	jjc

Arizona license number: **AZ0102**

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC-15-1/300-500/STATIC C

ACZ Sample ID: **L25803-07**

Date Sampled: 06/15/15 00:00

Date Received: 07/31/15

Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1	8.02		*	mg/L	0.03	0.2	08/04/15 15:18	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0004	0.002	08/11/15 21:17	mfm
Arsenic, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0002	0.001	08/13/15 10:44	mfm
Barium, dissolved	M200.7 ICP	1	0.042		*	mg/L	0.003	0.02	08/04/15 15:18	jjc
Beryllium, dissolved	M200.8 ICP-MS	1	0.00113		*	mg/L	0.00005	0.0003	08/13/15 10:44	mfm
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/04/15 15:18	jjc
Boron, dissolved	M200.7 ICP	1	0.08		*	mg/L	0.01	0.05	08/04/15 15:18	jjc
Cadmium, dissolved	M200.8 ICP-MS	1	0.0021		*	mg/L	0.0001	0.0005	08/13/15 10:44	mfm
Calcium, dissolved	M200.7 ICP	1	1.4		*	mg/L	0.1	0.5	08/04/15 15:18	jjc
Chromium, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	08/04/15 15:18	jjc
Cobalt, dissolved	M200.7 ICP	1	0.03	B	*	mg/L	0.01	0.05	08/04/15 15:18	jjc
Copper, dissolved	M200.7 ICP	1	0.33		*	mg/L	0.01	0.05	08/04/15 15:18	jjc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/04/15 15:18	jjc
Iron, dissolved	M200.7 ICP	1	0.61		*	mg/L	0.02	0.05	08/04/15 15:18	jjc
Lead, dissolved	M200.8 ICP-MS	1	0.0005		*	mg/L	0.0001	0.0005	08/11/15 21:17	mfm
Lithium, dissolved	M200.7 ICP	1	0.014	B	*	mg/L	0.008	0.04	08/04/15 15:18	jjc
Magnesium, dissolved	M200.7 ICP	1	0.6	B	*	mg/L	0.2	1	08/04/15 15:18	jjc
Manganese, dissolved	M200.7 ICP	1	0.075		*	mg/L	0.005	0.03	08/04/15 15:18	jjc
Mercury, dissolved	M245.1 CVAA	1		UH	*	mg/L	0.0002	0.001	08/10/15 13:19	nco
Molybdenum, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.1	08/04/15 15:18	jjc
Nickel, dissolved	M200.7 ICP	1	0.016	B	*	mg/L	0.008	0.04	08/04/15 15:18	jjc
Potassium, dissolved	M200.7 ICP	1	10.7		*	mg/L	0.2	1	08/04/15 15:18	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/04/15 15:18	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0047		*	mg/L	0.0001	0.0003	08/13/15 10:44	mfm
Silver, dissolved	M200.7 ICP	1	0.01	B	*	mg/L	0.01	0.03	08/04/15 15:18	jjc
Sodium, dissolved	M200.7 ICP	1	0.7	B	*	mg/L	0.2	1	08/04/15 15:18	jjc
Strontium, dissolved	M200.7 ICP	1	1.400		*	mg/L	0.005	0.03	08/04/15 15:18	jjc
Sulfur, dissolved	M200.7 ICP	1	39.8		*	mg/L	0.3	1	08/04/15 15:18	jjc
Thallium, dissolved	M200.8 ICP-MS	1	0.0009		*	mg/L	0.0001	0.0005	08/18/15 14:07	msh
Tin, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/04/15 15:18	jjc
Titanium, dissolved	M200.7 ICP	1		U	*	mg/L	0.005	0.03	08/04/15 15:18	jjc
Vanadium, dissolved	M200.7 ICP	1		U	*	mg/L	0.005	0.03	08/04/15 15:18	jjc
Zinc, dissolved	M200.7 ICP	1	0.12		*	mg/L	0.01	0.05	08/04/15 15:18	jjc

Arizona license number: **AZ0102**

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC-15-1/500-700/STATIC C

ACZ Sample ID: **L25803-08**

Date Sampled: 06/15/15 00:00

Date Received: 07/31/15

Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1	8.24		*	mg/L	0.03	0.2	08/04/15 15:28	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0004	0.002	08/11/15 21:26	mfm
Arsenic, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0002	0.001	08/13/15 11:49	mfm
Barium, dissolved	M200.7 ICP	1	0.045		*	mg/L	0.003	0.02	08/04/15 15:28	jjc
Beryllium, dissolved	M200.8 ICP-MS	1	0.00136		*	mg/L	0.00005	0.0003	08/13/15 11:49	mfm
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/04/15 15:28	jjc
Boron, dissolved	M200.7 ICP	1	0.11		*	mg/L	0.01	0.05	08/04/15 15:28	jjc
Cadmium, dissolved	M200.8 ICP-MS	1	0.0057		*	mg/L	0.0001	0.0005	08/13/15 11:49	mfm
Calcium, dissolved	M200.7 ICP	1	1		*	mg/L	0.1	0.5	08/04/15 15:28	jjc
Chromium, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	08/04/15 15:28	jjc
Cobalt, dissolved	M200.7 ICP	1	0.02	B	*	mg/L	0.01	0.05	08/04/15 15:28	jjc
Copper, dissolved	M200.7 ICP	1	0.51		*	mg/L	0.01	0.05	08/04/15 15:28	jjc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/04/15 15:28	jjc
Iron, dissolved	M200.7 ICP	1	0.50		*	mg/L	0.02	0.05	08/04/15 15:28	jjc
Lead, dissolved	M200.8 ICP-MS	1	0.0127		*	mg/L	0.0001	0.0005	08/11/15 21:26	mfm
Lithium, dissolved	M200.7 ICP	1	0.013	B	*	mg/L	0.008	0.04	08/04/15 15:28	jjc
Magnesium, dissolved	M200.7 ICP	1	0.5	B	*	mg/L	0.2	1	08/04/15 15:28	jjc
Manganese, dissolved	M200.7 ICP	1	0.095		*	mg/L	0.005	0.03	08/04/15 15:28	jjc
Mercury, dissolved	M245.1 CVAA	1	0.0002	BH	*	mg/L	0.0002	0.001	08/10/15 13:21	nco
Molybdenum, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.1	08/04/15 15:28	jjc
Nickel, dissolved	M200.7 ICP	1	0.012	B	*	mg/L	0.008	0.04	08/04/15 15:28	jjc
Potassium, dissolved	M200.7 ICP	1	10.5		*	mg/L	0.2	1	08/04/15 15:28	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/04/15 15:28	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0078		*	mg/L	0.0001	0.0003	08/18/15 14:10	msh
Silver, dissolved	M200.7 ICP	1	0.01	B	*	mg/L	0.01	0.03	08/04/15 15:28	jjc
Sodium, dissolved	M200.7 ICP	1	0.9	B	*	mg/L	0.2	1	08/04/15 15:28	jjc
Strontium, dissolved	M200.7 ICP	1	0.764		*	mg/L	0.005	0.03	08/04/15 15:28	jjc
Sulfur, dissolved	M200.7 ICP	1	38.4		*	mg/L	0.3	1	08/04/15 15:28	jjc
Thallium, dissolved	M200.8 ICP-MS	1	0.0008		*	mg/L	0.0001	0.0005	08/13/15 11:49	mfm
Tin, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/04/15 15:28	jjc
Titanium, dissolved	M200.7 ICP	1		U	*	mg/L	0.005	0.03	08/04/15 15:28	jjc
Vanadium, dissolved	M200.7 ICP	1		U	*	mg/L	0.005	0.03	08/04/15 15:28	jjc
Zinc, dissolved	M200.7 ICP	1	0.24		*	mg/L	0.01	0.05	08/04/15 15:28	jjc

Arizona license number: AZ0102

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC-15-1/700-900/STATIC C

ACZ Sample ID: **L25803-09**

Date Sampled: 06/15/15 00:00

Date Received: 07/31/15

Sample Matrix: Leachate

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1	19.10		*	mg/L	0.03	0.2	08/04/15 15:31	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0004	0.002	08/11/15 21:29	mfm
Arsenic, dissolved	M200.8 ICP-MS	1	0.0011		*	mg/L	0.0002	0.001	08/13/15 11:52	mfm
Barium, dissolved	M200.7 ICP	1	0.048		*	mg/L	0.003	0.02	08/04/15 15:31	jjc
Beryllium, dissolved	M200.8 ICP-MS	1	0.00177		*	mg/L	0.00005	0.0003	08/13/15 11:52	mfm
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/04/15 15:31	jjc
Boron, dissolved	M200.7 ICP	1	0.14		*	mg/L	0.01	0.05	08/04/15 15:31	jjc
Cadmium, dissolved	M200.8 ICP-MS	1	0.0741		*	mg/L	0.0001	0.0005	08/13/15 11:52	mfm
Calcium, dissolved	M200.7 ICP	1	1.3		*	mg/L	0.1	0.5	08/04/15 15:31	jjc
Chromium, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	08/04/15 15:31	jjc
Cobalt, dissolved	M200.7 ICP	1	0.10		*	mg/L	0.01	0.05	08/04/15 15:31	jjc
Copper, dissolved	M200.7 ICP	1	0.96		*	mg/L	0.01	0.05	08/04/15 15:31	jjc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/04/15 15:31	jjc
Iron, dissolved	M200.7 ICP	1	18.0		*	mg/L	0.02	0.05	08/04/15 15:31	jjc
Lead, dissolved	M200.8 ICP-MS	1	0.1483		*	mg/L	0.0001	0.0005	08/11/15 21:29	mfm
Lithium, dissolved	M200.7 ICP	1	0.018	B	*	mg/L	0.008	0.04	08/04/15 15:31	jjc
Magnesium, dissolved	M200.7 ICP	1	0.8	B	*	mg/L	0.2	1	08/04/15 15:31	jjc
Manganese, dissolved	M200.7 ICP	1	0.296		*	mg/L	0.005	0.03	08/04/15 15:31	jjc
Mercury, dissolved	M245.1 CVAA	1		UH	*	mg/L	0.0002	0.001	08/10/15 13:23	nco
Molybdenum, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.1	08/04/15 15:31	jjc
Nickel, dissolved	M200.7 ICP	1	0.039	B	*	mg/L	0.008	0.04	08/04/15 15:31	jjc
Potassium, dissolved	M200.7 ICP	1	8.7		*	mg/L	0.2	1	08/04/15 15:31	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/04/15 15:31	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0112		*	mg/L	0.0001	0.0003	08/18/15 14:14	msh
Silver, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.03	08/04/15 15:31	jjc
Sodium, dissolved	M200.7 ICP	1	2.2		*	mg/L	0.2	1	08/04/15 15:31	jjc
Strontium, dissolved	M200.7 ICP	1	1.020		*	mg/L	0.005	0.03	08/04/15 15:31	jjc
Sulfur, dissolved	M200.7 ICP	1	142		*	mg/L	0.3	1	08/04/15 15:31	jjc
Thallium, dissolved	M200.8 ICP-MS	1	0.0012		*	mg/L	0.0001	0.0005	08/13/15 11:52	mfm
Tin, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/04/15 15:31	jjc
Titanium, dissolved	M200.7 ICP	1		U	*	mg/L	0.005	0.03	08/04/15 15:31	jjc
Vanadium, dissolved	M200.7 ICP	1	0.006	B	*	mg/L	0.005	0.03	08/04/15 15:31	jjc
Zinc, dissolved	M200.7 ICP	1	4.52		*	mg/L	0.01	0.05	08/04/15 15:31	jjc

Arizona license number: AZ0102

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC-15-1/900-1100/STATIC C

ACZ Sample ID: **L25803-10**

Date Sampled: 06/15/15 00:00

Date Received: 07/31/15

Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	5	21		*	mg/L	0.2	0.8	08/05/15 14:20	aeb
Antimony, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0004	0.002	08/11/15 21:32	mfm
Arsenic, dissolved	M200.8 ICP-MS	1	0.0021		*	mg/L	0.0002	0.001	08/13/15 11:55	mfm
Barium, dissolved	M200.7 ICP	5	0.04	B	*	mg/L	0.02	0.08	08/05/15 14:20	aeb
Beryllium, dissolved	M200.8 ICP-MS	1	0.00279		*	mg/L	0.00005	0.0003	08/13/15 11:55	mfm
Bismuth, dissolved	M200.7 ICP	5		U	*	mg/L	0.2	1	08/05/15 14:20	aeb
Boron, dissolved	M200.7 ICP	5	0.08	B	*	mg/L	0.05	0.3	08/05/15 14:20	aeb
Cadmium, dissolved	M200.8 ICP-MS	1	0.0401		*	mg/L	0.0001	0.0005	08/13/15 11:55	mfm
Calcium, dissolved	M200.7 ICP	5	23.1		*	mg/L	0.5	3	08/05/15 14:20	aeb
Chromium, dissolved	M200.7 ICP	5		U	*	mg/L	0.05	0.3	08/05/15 14:20	aeb
Cobalt, dissolved	M200.7 ICP	5	0.14	B	*	mg/L	0.05	0.3	08/05/15 14:20	aeb
Copper, dissolved	M200.7 ICP	5	0.91		*	mg/L	0.05	0.3	08/05/15 14:20	aeb
Gallium, dissolved	M200.7 ICP	5		U	*	mg/L	0.5	3	08/05/15 14:20	aeb
Iron, dissolved	M200.7 ICP	5	72.2		*	mg/L	0.1	0.3	08/05/15 14:20	aeb
Lead, dissolved	M200.8 ICP-MS	1	0.2921		*	mg/L	0.0001	0.0005	08/11/15 21:32	mfm
Lithium, dissolved	M200.7 ICP	5		U	*	mg/L	0.04	0.2	08/05/15 14:20	aeb
Magnesium, dissolved	M200.7 ICP	5	3	B	*	mg/L	1	5	08/05/15 14:20	aeb
Manganese, dissolved	M200.7 ICP	5	0.63		*	mg/L	0.03	0.1	08/05/15 14:20	aeb
Mercury, dissolved	M245.1 CVAA	1		UH	*	mg/L	0.0002	0.001	08/10/15 13:25	nco
Molybdenum, dissolved	M200.7 ICP	5		U	*	mg/L	0.1	0.5	08/05/15 14:20	aeb
Nickel, dissolved	M200.7 ICP	5	0.07	B	*	mg/L	0.04	0.2	08/05/15 14:20	aeb
Potassium, dissolved	M200.7 ICP	5	13		*	mg/L	1	5	08/05/15 14:20	aeb
Scandium, dissolved	M200.7 ICP	5		U	*	mg/L	0.5	3	08/05/15 14:20	aeb
Selenium, dissolved	M200.8 ICP-MS	1	0.0186		*	mg/L	0.0001	0.0003	08/18/15 14:17	msh
Silver, dissolved	M200.7 ICP	5		U	*	mg/L	0.05	0.1	08/05/15 14:20	aeb
Sodium, dissolved	M200.7 ICP	5	3	B	*	mg/L	1	5	08/05/15 14:20	aeb
Strontium, dissolved	M200.7 ICP	5	1.27		*	mg/L	0.03	0.1	08/05/15 14:20	aeb
Sulfur, dissolved	M200.7 ICP	5	222		*	mg/L	1	6	08/05/15 14:20	aeb
Thallium, dissolved	M200.8 ICP-MS	1	0.0017		*	mg/L	0.0001	0.0005	08/13/15 11:55	mfm
Tin, dissolved	M200.7 ICP	5		U	*	mg/L	0.2	1	08/05/15 14:20	aeb
Titanium, dissolved	M200.7 ICP	5		U	*	mg/L	0.03	0.1	08/05/15 14:20	aeb
Vanadium, dissolved	M200.7 ICP	5		U	*	mg/L	0.03	0.1	08/05/15 14:20	aeb
Zinc, dissolved	M200.7 ICP	5	5.09		*	mg/L	0.05	0.3	08/05/15 14:20	aeb

Arizona license number: AZ0102

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC-15-1/1100-1300/STATIC C

ACZ Sample ID: **L25803-11**

Date Sampled: 06/15/15 00:00

Date Received: 07/31/15

Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1	18.90		*	mg/L	0.03	0.2	08/04/15 15:37	jic
Antimony, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0004	0.002	08/11/15 21:35	mfm
Arsenic, dissolved	M200.8 ICP-MS	1	0.0020		*	mg/L	0.0002	0.001	08/11/15 21:35	mfm
Barium, dissolved	M200.7 ICP	1	0.039		*	mg/L	0.003	0.02	08/04/15 15:37	jic
Beryllium, dissolved	M200.8 ICP-MS	1	0.00292		*	mg/L	0.00005	0.0003	08/11/15 21:35	mfm
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/04/15 15:37	jic
Boron, dissolved	M200.7 ICP	1	0.04	B	*	mg/L	0.01	0.05	08/04/15 15:37	jic
Cadmium, dissolved	M200.8 ICP-MS	1	0.0419		*	mg/L	0.0001	0.0005	08/11/15 21:35	mfm
Calcium, dissolved	M200.7 ICP	1	51.2		*	mg/L	0.1	0.5	08/04/15 15:37	jic
Chromium, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	08/04/15 15:37	jic
Cobalt, dissolved	M200.7 ICP	1	0.14		*	mg/L	0.01	0.05	08/04/15 15:37	jic
Copper, dissolved	M200.7 ICP	1	0.90		*	mg/L	0.01	0.05	08/04/15 15:37	jic
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/04/15 15:37	jic
Iron, dissolved	M200.7 ICP	1	111		*	mg/L	0.02	0.05	08/04/15 15:37	jic
Lead, dissolved	M200.8 ICP-MS	5	1.1300		*	mg/L	0.0005	0.003	08/13/15 11:58	mfm
Lithium, dissolved	M200.7 ICP	1	0.022	B	*	mg/L	0.008	0.04	08/04/15 15:37	jic
Magnesium, dissolved	M200.7 ICP	1	1.3		*	mg/L	0.2	1	08/04/15 15:37	jic
Manganese, dissolved	M200.7 ICP	1	0.373		*	mg/L	0.005	0.03	08/04/15 15:37	jic
Mercury, dissolved	M245.1 CVAA	1		UH	*	mg/L	0.0002	0.001	08/10/15 13:27	nco
Molybdenum, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.1	08/04/15 15:37	jic
Nickel, dissolved	M200.7 ICP	1	0.062		*	mg/L	0.008	0.04	08/04/15 15:37	jic
Potassium, dissolved	M200.7 ICP	1	11.8		*	mg/L	0.2	1	08/04/15 15:37	jic
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/04/15 15:37	jic
Selenium, dissolved	M200.8 ICP-MS	1	0.0177		*	mg/L	0.0001	0.0003	08/11/15 21:35	mfm
Silver, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.03	08/04/15 15:37	jic
Sodium, dissolved	M200.7 ICP	1	2.3		*	mg/L	0.2	1	08/04/15 15:37	jic
Strontium, dissolved	M200.7 ICP	1	7.810		*	mg/L	0.005	0.03	08/04/15 15:37	jic
Sulfur, dissolved	M200.7 ICP	1	264		*	mg/L	0.3	1	08/04/15 15:37	jic
Thallium, dissolved	M200.8 ICP-MS	1	0.0010		*	mg/L	0.0001	0.0005	08/11/15 21:35	mfm
Tin, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/04/15 15:37	jic
Titanium, dissolved	M200.7 ICP	1	0.016	B	*	mg/L	0.005	0.03	08/04/15 15:37	jic
Vanadium, dissolved	M200.7 ICP	1	0.014	B	*	mg/L	0.005	0.03	08/04/15 15:37	jic
Zinc, dissolved	M200.7 ICP	1	6.36		*	mg/L	0.01	0.05	08/04/15 15:37	jic

Arizona license number: **AZ0102**

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC-15-1/1300-1500/STATIC C

ACZ Sample ID: **L25803-12**

Date Sampled: 06/15/15 00:00

Date Received: 07/31/15

Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1	17.0		*	mg/L	0.03	0.2	08/04/15 15:47	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0004	0.002	08/11/15 21:38	mfm
Arsenic, dissolved	M200.8 ICP-MS	1	0.0010		*	mg/L	0.0002	0.001	08/11/15 21:38	mfm
Barium, dissolved	M200.7 ICP	1	0.074		*	mg/L	0.003	0.02	08/04/15 15:47	jjc
Beryllium, dissolved	M200.8 ICP-MS	1	0.00334		*	mg/L	0.00005	0.0003	08/11/15 21:38	mfm
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/04/15 15:47	jjc
Boron, dissolved	M200.7 ICP	1	0.03	B	*	mg/L	0.01	0.05	08/04/15 15:47	jjc
Cadmium, dissolved	M200.8 ICP-MS	1	0.0138		*	mg/L	0.0001	0.0005	08/11/15 21:38	mfm
Calcium, dissolved	M200.7 ICP	1	19.7		*	mg/L	0.1	0.5	08/04/15 15:47	jjc
Chromium, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	08/04/15 15:47	jjc
Cobalt, dissolved	M200.7 ICP	1	0.11		*	mg/L	0.01	0.05	08/04/15 15:47	jjc
Copper, dissolved	M200.7 ICP	1	0.43		*	mg/L	0.01	0.05	08/04/15 15:47	jjc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/04/15 15:47	jjc
Iron, dissolved	M200.7 ICP	1	126		*	mg/L	0.02	0.05	08/04/15 15:47	jjc
Lead, dissolved	M200.8 ICP-MS	5	0.8965		*	mg/L	0.0005	0.003	08/13/15 12:01	mfm
Lithium, dissolved	M200.7 ICP	1	0.031	B	*	mg/L	0.008	0.04	08/04/15 15:47	jjc
Magnesium, dissolved	M200.7 ICP	1	2		*	mg/L	0.2	1	08/04/15 15:47	jjc
Manganese, dissolved	M200.7 ICP	1	13.300		*	mg/L	0.005	0.03	08/04/15 15:47	jjc
Mercury, dissolved	M245.1 CVAA	1		UH	*	mg/L	0.0002	0.001	08/10/15 13:29	nco
Molybdenum, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.1	08/04/15 15:47	jjc
Nickel, dissolved	M200.7 ICP	1	0.063		*	mg/L	0.008	0.04	08/04/15 15:47	jjc
Potassium, dissolved	M200.7 ICP	1	16		*	mg/L	0.2	1	08/04/15 15:47	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/04/15 15:47	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0146		*	mg/L	0.0001	0.0003	08/11/15 21:38	mfm
Silver, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.03	08/04/15 15:47	jjc
Sodium, dissolved	M200.7 ICP	1	3.9		*	mg/L	0.2	1	08/04/15 15:47	jjc
Strontium, dissolved	M200.7 ICP	1	9.910		*	mg/L	0.005	0.03	08/04/15 15:47	jjc
Sulfur, dissolved	M200.7 ICP	1	287		*	mg/L	0.3	1	08/04/15 15:47	jjc
Thallium, dissolved	M200.8 ICP-MS	1	0.0006		*	mg/L	0.0001	0.0005	08/11/15 21:38	mfm
Tin, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/04/15 15:47	jjc
Titanium, dissolved	M200.7 ICP	1	0.007	B	*	mg/L	0.005	0.03	08/04/15 15:47	jjc
Vanadium, dissolved	M200.7 ICP	1	0.012	B	*	mg/L	0.005	0.03	08/04/15 15:47	jjc
Zinc, dissolved	M200.7 ICP	1	2.48		*	mg/L	0.01	0.05	08/04/15 15:47	jjc

Arizona license number: AZ0102

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC-15-1/1500-1700/STATIC C

ACZ Sample ID: **L25803-13**

Date Sampled: 06/15/15 00:00

Date Received: 07/31/15

Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1	17.50		*	mg/L	0.03	0.2	08/04/15 15:50	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0004	0.002	08/11/15 21:41	mfm
Arsenic, dissolved	M200.8 ICP-MS	1	0.0007	B	*	mg/L	0.0002	0.001	08/11/15 21:41	mfm
Barium, dissolved	M200.7 ICP	1	0.067		*	mg/L	0.003	0.02	08/04/15 15:50	jjc
Beryllium, dissolved	M200.8 ICP-MS	1	0.00647		*	mg/L	0.00005	0.0003	08/11/15 21:41	mfm
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/04/15 15:50	jjc
Boron, dissolved	M200.7 ICP	1	0.07		*	mg/L	0.01	0.05	08/04/15 15:50	jjc
Cadmium, dissolved	M200.8 ICP-MS	1	0.0080		*	mg/L	0.0001	0.0005	08/11/15 21:41	mfm
Calcium, dissolved	M200.7 ICP	1	46.1		*	mg/L	0.1	0.5	08/04/15 15:50	jjc
Chromium, dissolved	M200.7 ICP	1	0.01	B	*	mg/L	0.01	0.05	08/04/15 15:50	jjc
Cobalt, dissolved	M200.7 ICP	1	0.11		*	mg/L	0.01	0.05	08/04/15 15:50	jjc
Copper, dissolved	M200.7 ICP	1	0.42		*	mg/L	0.01	0.05	08/04/15 15:50	jjc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/04/15 15:50	jjc
Iron, dissolved	M200.7 ICP	1	151		*	mg/L	0.02	0.05	08/04/15 15:50	jjc
Lead, dissolved	M200.8 ICP-MS	2	0.5178		*	mg/L	0.0002	0.001	08/13/15 12:10	mfm
Lithium, dissolved	M200.7 ICP	1	0.036	B	*	mg/L	0.008	0.04	08/04/15 15:50	jjc
Magnesium, dissolved	M200.7 ICP	1	4.5		*	mg/L	0.2	1	08/04/15 15:50	jjc
Manganese, dissolved	M200.7 ICP	1	47.600		*	mg/L	0.005	0.03	08/04/15 15:50	jjc
Mercury, dissolved	M245.1 CVAA	1		UH	*	mg/L	0.0002	0.001	08/10/15 13:31	nco
Molybdenum, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.1	08/04/15 15:50	jjc
Nickel, dissolved	M200.7 ICP	1	0.093		*	mg/L	0.008	0.04	08/04/15 15:50	jjc
Potassium, dissolved	M200.7 ICP	1	18.2		*	mg/L	0.2	1	08/04/15 15:50	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/04/15 15:50	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0109		*	mg/L	0.0001	0.0003	08/11/15 21:41	mfm
Silver, dissolved	M200.7 ICP	1	0.01	B	*	mg/L	0.01	0.03	08/04/15 15:50	jjc
Sodium, dissolved	M200.7 ICP	1	3.5		*	mg/L	0.2	1	08/04/15 15:50	jjc
Strontium, dissolved	M200.7 ICP	1	12.300		*	mg/L	0.005	0.03	08/04/15 15:50	jjc
Sulfur, dissolved	M200.7 ICP	1	322		*	mg/L	0.3	1	08/04/15 15:50	jjc
Thallium, dissolved	M200.8 ICP-MS	1	0.0006		*	mg/L	0.0001	0.0005	08/11/15 21:41	mfm
Tin, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/04/15 15:50	jjc
Titanium, dissolved	M200.7 ICP	1	0.017	B	*	mg/L	0.005	0.03	08/04/15 15:50	jjc
Vanadium, dissolved	M200.7 ICP	1	0.014	B	*	mg/L	0.005	0.03	08/04/15 15:50	jjc
Zinc, dissolved	M200.7 ICP	1	2.05		*	mg/L	0.01	0.05	08/04/15 15:50	jjc

Arizona license number: **AZ0102**

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/100-900/KINETIC C

ACZ Sample ID: **L25803-14**

Date Sampled: 06/15/15 00:00

Date Received: 07/31/15

Sample Matrix: Leachate

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1	7.83		*	mg/L	0.03	0.2	08/04/15 15:53	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0004	0.002	08/11/15 21:43	mfm
Arsenic, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0002	0.001	08/11/15 21:43	mfm
Barium, dissolved	M200.7 ICP	1	0.034		*	mg/L	0.003	0.02	08/04/15 15:53	jjc
Beryllium, dissolved	M200.8 ICP-MS	1	0.00082		*	mg/L	0.00005	0.0003	08/11/15 21:43	mfm
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/04/15 15:53	jjc
Boron, dissolved	M200.7 ICP	1	0.03	B	*	mg/L	0.01	0.05	08/04/15 15:53	jjc
Cadmium, dissolved	M200.8 ICP-MS	1	0.0082		*	mg/L	0.0001	0.0005	08/11/15 21:43	mfm
Calcium, dissolved	M200.7 ICP	1	0.6		*	mg/L	0.1	0.5	08/04/15 15:53	jjc
Chromium, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	08/04/15 15:53	jjc
Cobalt, dissolved	M200.7 ICP	1	0.08		*	mg/L	0.01	0.05	08/04/15 15:53	jjc
Copper, dissolved	M200.7 ICP	1	0.87		*	mg/L	0.01	0.05	08/04/15 15:53	jjc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/04/15 15:53	jjc
Iron, dissolved	M200.7 ICP	1	6.12		*	mg/L	0.02	0.05	08/04/15 15:53	jjc
Lead, dissolved	M200.8 ICP-MS	1	0.0054		*	mg/L	0.0001	0.0005	08/11/15 21:43	mfm
Lithium, dissolved	M200.7 ICP	1	0.008	B	*	mg/L	0.008	0.04	08/04/15 15:53	jjc
Magnesium, dissolved	M200.7 ICP	1	0.3	B	*	mg/L	0.2	1	08/04/15 15:53	jjc
Manganese, dissolved	M200.7 ICP	1	0.113		*	mg/L	0.005	0.03	08/04/15 15:53	jjc
Mercury, dissolved	M245.1 CVAA	1		UH	*	mg/L	0.0002	0.001	08/10/15 13:33	nco
Molybdenum, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.1	08/04/15 15:53	jjc
Nickel, dissolved	M200.7 ICP	1	0.027	B	*	mg/L	0.008	0.04	08/04/15 15:53	jjc
Potassium, dissolved	M200.7 ICP	1	6.2		*	mg/L	0.2	1	08/04/15 15:53	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/04/15 15:53	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0059		*	mg/L	0.0001	0.0003	08/11/15 21:43	mfm
Silver, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.03	08/04/15 15:53	jjc
Sodium, dissolved	M200.7 ICP	1	0.6	B	*	mg/L	0.2	1	08/04/15 15:53	jjc
Strontium, dissolved	M200.7 ICP	1	0.378		*	mg/L	0.005	0.03	08/04/15 15:53	jjc
Sulfur, dissolved	M200.7 ICP	1	65.2		*	mg/L	0.3	1	08/04/15 15:53	jjc
Thallium, dissolved	M200.8 ICP-MS	1	0.0008		*	mg/L	0.0001	0.0005	08/11/15 21:43	mfm
Tin, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/04/15 15:53	jjc
Titanium, dissolved	M200.7 ICP	1		U	*	mg/L	0.005	0.03	08/04/15 15:53	jjc
Vanadium, dissolved	M200.7 ICP	1		U	*	mg/L	0.005	0.03	08/04/15 15:53	jjc
Zinc, dissolved	M200.7 ICP	1	0.40		*	mg/L	0.01	0.05	08/04/15 15:53	jjc

Arizona license number: AZ0102

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/900-1700/KINETIC C

ACZ Sample ID: **L25803-15**

Date Sampled: 06/15/15 00:00

Date Received: 07/31/15

Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1	8.72		*	mg/L	0.03	0.2	08/04/15 15:56	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0004	0.002	08/11/15 21:46	mfm
Arsenic, dissolved	M200.8 ICP-MS	1	0.0014		*	mg/L	0.0002	0.001	08/11/15 21:46	mfm
Barium, dissolved	M200.7 ICP	1	0.071		*	mg/L	0.003	0.02	08/04/15 15:56	jjc
Beryllium, dissolved	M200.8 ICP-MS	1	0.00238		*	mg/L	0.00005	0.0003	08/11/15 21:46	mfm
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/04/15 15:56	jjc
Boron, dissolved	M200.7 ICP	1	0.03	B	*	mg/L	0.01	0.05	08/04/15 15:56	jjc
Cadmium, dissolved	M200.8 ICP-MS	1	0.0184		*	mg/L	0.0001	0.0005	08/11/15 21:46	mfm
Calcium, dissolved	M200.7 ICP	1	20.4		*	mg/L	0.1	0.5	08/04/15 15:56	jjc
Chromium, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	08/04/15 15:56	jjc
Cobalt, dissolved	M200.7 ICP	1	0.12		*	mg/L	0.01	0.05	08/04/15 15:56	jjc
Copper, dissolved	M200.7 ICP	1	0.53		*	mg/L	0.01	0.05	08/04/15 15:56	jjc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/04/15 15:56	jjc
Iron, dissolved	M200.7 ICP	1	77.20		*	mg/L	0.02	0.05	08/04/15 15:56	jjc
Lead, dissolved	M200.8 ICP-MS	5	0.8985		*	mg/L	0.0005	0.003	08/13/15 12:13	mfm
Lithium, dissolved	M200.7 ICP	1	0.015	B	*	mg/L	0.008	0.04	08/04/15 15:56	jjc
Magnesium, dissolved	M200.7 ICP	1	1.4		*	mg/L	0.2	1	08/04/15 15:56	jjc
Manganese, dissolved	M200.7 ICP	1	9.480		*	mg/L	0.005	0.03	08/04/15 15:56	jjc
Mercury, dissolved	M245.1 CVAA	1		UH	*	mg/L	0.0002	0.001	08/10/15 13:35	nco
Molybdenum, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.1	08/04/15 15:56	jjc
Nickel, dissolved	M200.7 ICP	1	0.048		*	mg/L	0.008	0.04	08/04/15 15:56	jjc
Potassium, dissolved	M200.7 ICP	1	6.2		*	mg/L	0.2	1	08/04/15 15:56	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/04/15 15:56	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0106		*	mg/L	0.0001	0.0003	08/11/15 21:46	mfm
Silver, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.03	08/04/15 15:56	jjc
Sodium, dissolved	M200.7 ICP	1	1.5		*	mg/L	0.2	1	08/04/15 15:56	jjc
Strontium, dissolved	M200.7 ICP	1	4.480		*	mg/L	0.005	0.03	08/04/15 15:56	jjc
Sulfur, dissolved	M200.7 ICP	1	196		*	mg/L	0.3	1	08/04/15 15:56	jjc
Thallium, dissolved	M200.8 ICP-MS	1	0.0006		*	mg/L	0.0001	0.0005	08/11/15 21:46	mfm
Tin, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/04/15 15:56	jjc
Titanium, dissolved	M200.7 ICP	1	0.009	B	*	mg/L	0.005	0.03	08/04/15 15:56	jjc
Vanadium, dissolved	M200.7 ICP	1	0.011	B	*	mg/L	0.005	0.03	08/04/15 15:56	jjc
Zinc, dissolved	M200.7 ICP	1	2.73		*	mg/L	0.01	0.05	08/04/15 15:56	jjc

Arizona license number: AZ0102

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/2500-2700/STATIC

ACZ Sample ID: **L25803-16**

Date Sampled: 06/29/15 00:00

Date Received: 07/31/15

Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1	4.25		*	mg/L	0.03	0.2	08/04/15 16:06	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0004	0.002	08/11/15 21:49	mfm
Arsenic, dissolved	M200.8 ICP-MS	1	0.0003	B	*	mg/L	0.0002	0.001	08/11/15 21:49	mfm
Barium, dissolved	M200.7 ICP	1	0.022		*	mg/L	0.003	0.02	08/04/15 16:06	jjc
Beryllium, dissolved	M200.8 ICP-MS	1	0.00150		*	mg/L	0.00005	0.0003	08/11/15 21:49	mfm
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/04/15 16:06	jjc
Boron, dissolved	M200.7 ICP	1	0.08		*	mg/L	0.01	0.05	08/04/15 16:06	jjc
Cadmium, dissolved	M200.8 ICP-MS	1	0.0174		*	mg/L	0.0001	0.0005	08/11/15 21:49	mfm
Calcium, dissolved	M200.7 ICP	1	592		*	mg/L	0.1	0.5	08/04/15 16:06	jjc
Chromium, dissolved	M200.7 ICP	1	0.01	B	*	mg/L	0.01	0.05	08/04/15 16:06	jjc
Cobalt, dissolved	M200.7 ICP	1	0.06		*	mg/L	0.01	0.05	08/04/15 16:06	jjc
Copper, dissolved	M200.7 ICP	1	0.29		*	mg/L	0.01	0.05	08/04/15 16:06	jjc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/04/15 16:06	jjc
Iron, dissolved	M200.7 ICP	1	22.10		*	mg/L	0.02	0.05	08/04/15 16:06	jjc
Lead, dissolved	M200.8 ICP-MS	2	0.6532		*	mg/L	0.0002	0.001	08/13/15 12:15	mfm
Lithium, dissolved	M200.7 ICP	1	0.017	B	*	mg/L	0.008	0.04	08/04/15 16:06	jjc
Magnesium, dissolved	M200.7 ICP	1	53.6		*	mg/L	0.2	1	08/04/15 16:06	jjc
Manganese, dissolved	M200.7 ICP	1	8.050		*	mg/L	0.005	0.03	08/04/15 16:06	jjc
Mercury, dissolved	M245.1 CVAA	1		UH	*	mg/L	0.0002	0.001	08/10/15 13:37	nco
Molybdenum, dissolved	M200.7 ICP	1	0.31		*	mg/L	0.02	0.1	08/04/15 16:06	jjc
Nickel, dissolved	M200.7 ICP	1	0.042		*	mg/L	0.008	0.04	08/04/15 16:06	jjc
Potassium, dissolved	M200.7 ICP	1	6.3		*	mg/L	0.2	1	08/04/15 16:06	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/04/15 16:06	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0158		*	mg/L	0.0001	0.0003	08/11/15 21:49	mfm
Silver, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.03	08/04/15 16:06	jjc
Sodium, dissolved	M200.7 ICP	1	1.3		*	mg/L	0.2	1	08/04/15 16:06	jjc
Strontium, dissolved	M200.7 ICP	1	6.620		*	mg/L	0.005	0.03	08/04/15 16:06	jjc
Sulfur, dissolved	M200.7 ICP	2	613		*	mg/L	0.5	3	08/05/15 14:24	aeb
Thallium, dissolved	M200.8 ICP-MS	1	0.0002	B	*	mg/L	0.0001	0.0005	08/11/15 21:49	mfm
Tin, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/04/15 16:06	jjc
Titanium, dissolved	M200.7 ICP	2	0.02	B	*	mg/L	0.01	0.05	08/05/15 14:24	aeb
Vanadium, dissolved	M200.7 ICP	1	0.045		*	mg/L	0.005	0.03	08/04/15 16:06	jjc
Zinc, dissolved	M200.7 ICP	1	2.72		*	mg/L	0.01	0.05	08/04/15 16:06	jjc

Arizona license number: AZ0102

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/2700-2900/STATIC

ACZ Sample ID: **L25803-17**

Date Sampled: 06/29/15 00:00

Date Received: 07/31/15

Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1	5.91		*	mg/L	0.03	0.2	08/04/15 16:09	jic
Antimony, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0004	0.002	08/11/15 21:52	mfm
Arsenic, dissolved	M200.8 ICP-MS	1	0.0003	B	*	mg/L	0.0002	0.001	08/11/15 21:52	mfm
Barium, dissolved	M200.7 ICP	1	0.029		*	mg/L	0.003	0.02	08/04/15 16:09	jic
Beryllium, dissolved	M200.8 ICP-MS	1	0.00254		*	mg/L	0.00005	0.0003	08/11/15 21:52	mfm
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/04/15 16:09	jic
Boron, dissolved	M200.7 ICP	1	0.03	B	*	mg/L	0.01	0.05	08/04/15 16:09	jic
Cadmium, dissolved	M200.8 ICP-MS	1	0.0030		*	mg/L	0.0001	0.0005	08/11/15 21:52	mfm
Calcium, dissolved	M200.7 ICP	1	541		*	mg/L	0.1	0.5	08/04/15 16:09	jic
Chromium, dissolved	M200.7 ICP	1	0.01	B	*	mg/L	0.01	0.05	08/04/15 16:09	jic
Cobalt, dissolved	M200.7 ICP	1	0.05		*	mg/L	0.01	0.05	08/04/15 16:09	jic
Copper, dissolved	M200.7 ICP	1	0.02	B	*	mg/L	0.01	0.05	08/04/15 16:09	jic
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/04/15 16:09	jic
Iron, dissolved	M200.7 ICP	1	0.98		*	mg/L	0.02	0.05	08/04/15 16:09	jic
Lead, dissolved	M200.8 ICP-MS	1	0.0616		*	mg/L	0.0001	0.0005	08/11/15 21:52	mfm
Lithium, dissolved	M200.7 ICP	1	0.014	B	*	mg/L	0.008	0.04	08/04/15 16:09	jic
Magnesium, dissolved	M200.7 ICP	1	62		*	mg/L	0.2	1	08/04/15 16:09	jic
Manganese, dissolved	M200.7 ICP	1	6.950		*	mg/L	0.005	0.03	08/04/15 16:09	jic
Mercury, dissolved	M245.1 CVAA	1		UH	*	mg/L	0.0002	0.001	08/10/15 13:44	nco
Molybdenum, dissolved	M200.7 ICP	1	1.03		*	mg/L	0.02	0.1	08/04/15 16:09	jic
Nickel, dissolved	M200.7 ICP	1	0.045		*	mg/L	0.008	0.04	08/04/15 16:09	jic
Potassium, dissolved	M200.7 ICP	1	7.6		*	mg/L	0.2	1	08/04/15 16:09	jic
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/04/15 16:09	jic
Selenium, dissolved	M200.8 ICP-MS	1	0.0191		*	mg/L	0.0001	0.0003	08/11/15 21:52	mfm
Silver, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.03	08/04/15 16:09	jic
Sodium, dissolved	M200.7 ICP	1	2		*	mg/L	0.2	1	08/04/15 16:09	jic
Strontium, dissolved	M200.7 ICP	1	7.440		*	mg/L	0.005	0.03	08/04/15 16:09	jic
Sulfur, dissolved	M200.7 ICP	2	539		*	mg/L	0.5	3	08/05/15 14:27	aeb
Thallium, dissolved	M200.8 ICP-MS	1	0.0001	B	*	mg/L	0.0001	0.0005	08/11/15 21:52	mfm
Tin, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/04/15 16:09	jic
Titanium, dissolved	M200.7 ICP	2	0.01	B	*	mg/L	0.01	0.05	08/05/15 14:27	aeb
Vanadium, dissolved	M200.7 ICP	1	0.184		*	mg/L	0.005	0.03	08/04/15 16:09	jic
Zinc, dissolved	M200.7 ICP	1	0.50		*	mg/L	0.01	0.05	08/04/15 16:09	jic

Arizona license number: **AZ0102**

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/2900-3100/STATIC

ACZ Sample ID: **L25803-18**

Date Sampled: 06/29/15 00:00

Date Received: 07/31/15

Sample Matrix: Leachate

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1	0.24		*	mg/L	0.03	0.2	08/04/15 16:12	jjc
Antimony, dissolved	M200.8 ICP-MS	1	0.0005	B	*	mg/L	0.0004	0.002	08/11/15 22:07	mfm
Arsenic, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0002	0.001	08/11/15 22:07	mfm
Barium, dissolved	M200.7 ICP	1	0.044		*	mg/L	0.003	0.02	08/04/15 16:12	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.00005	0.0003	08/11/15 22:07	mfm
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/04/15 16:12	jjc
Boron, dissolved	M200.7 ICP	1	0.13		*	mg/L	0.01	0.05	08/04/15 16:12	jjc
Cadmium, dissolved	M200.8 ICP-MS	1	0.0002	B	*	mg/L	0.0001	0.0005	08/11/15 22:07	mfm
Calcium, dissolved	M200.7 ICP	1	516		*	mg/L	0.1	0.5	08/04/15 16:12	jjc
Chromium, dissolved	M200.7 ICP	1	0.01	B	*	mg/L	0.01	0.05	08/04/15 16:12	jjc
Cobalt, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	08/04/15 16:12	jjc
Copper, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	08/04/15 16:12	jjc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/04/15 16:12	jjc
Iron, dissolved	M200.7 ICP	1	0.06		*	mg/L	0.02	0.05	08/04/15 16:12	jjc
Lead, dissolved	M200.8 ICP-MS	1	0.0002	B	*	mg/L	0.0001	0.0005	08/11/15 22:07	mfm
Lithium, dissolved	M200.7 ICP	1	0.012	B	*	mg/L	0.008	0.04	08/04/15 16:12	jjc
Magnesium, dissolved	M200.7 ICP	1		U	*	mg/L	0.2	1	08/04/15 16:12	jjc
Manganese, dissolved	M200.7 ICP	1	0.022	B	*	mg/L	0.005	0.03	08/04/15 16:12	jjc
Mercury, dissolved	M245.1 CVAA	1		UH	*	mg/L	0.0002	0.001	08/10/15 13:46	nco
Molybdenum, dissolved	M200.7 ICP	1	1.43		*	mg/L	0.02	0.1	08/04/15 16:12	jjc
Nickel, dissolved	M200.7 ICP	1		U	*	mg/L	0.008	0.04	08/04/15 16:12	jjc
Potassium, dissolved	M200.7 ICP	1	5.1		*	mg/L	0.2	1	08/04/15 16:12	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/04/15 16:12	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0043		*	mg/L	0.0001	0.0003	08/18/15 14:20	msh
Silver, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.03	08/04/15 16:12	jjc
Sodium, dissolved	M200.7 ICP	1	2.3		*	mg/L	0.2	1	08/04/15 16:12	jjc
Strontium, dissolved	M200.7 ICP	1	7.710		*	mg/L	0.005	0.03	08/04/15 16:12	jjc
Sulfur, dissolved	M200.7 ICP	1	411		*	mg/L	0.3	1	08/04/15 16:12	jjc
Thallium, dissolved	M200.8 ICP-MS	1	0.0001	B	*	mg/L	0.0001	0.0005	08/11/15 22:07	mfm
Tin, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/04/15 16:12	jjc
Titanium, dissolved	M200.7 ICP	2		U	*	mg/L	0.01	0.05	08/05/15 14:30	aeb
Vanadium, dissolved	M200.7 ICP	1		U	*	mg/L	0.005	0.03	08/04/15 16:12	jjc
Zinc, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	08/04/15 16:12	jjc

Arizona license number: AZ0102

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/3100-3300/STATIC

ACZ Sample ID: **L25803-19**

Date Sampled: 06/29/15 00:00

Date Received: 07/31/15

Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1	0.23		*	mg/L	0.03	0.2	08/04/15 16:16	jjc
Antimony, dissolved	M200.8 ICP-MS	1	0.0008	B	*	mg/L	0.0004	0.002	08/11/15 22:10	mfm
Arsenic, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0002	0.001	08/11/15 22:10	mfm
Barium, dissolved	M200.7 ICP	1	0.061		*	mg/L	0.003	0.02	08/04/15 16:16	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.00005	0.0003	08/11/15 22:10	mfm
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/04/15 16:16	jjc
Boron, dissolved	M200.7 ICP	1	0.03	B	*	mg/L	0.01	0.05	08/04/15 16:16	jjc
Cadmium, dissolved	M200.8 ICP-MS	1	0.0001	B	*	mg/L	0.0001	0.0005	08/11/15 22:10	mfm
Calcium, dissolved	M200.7 ICP	1	354		*	mg/L	0.1	0.5	08/04/15 16:16	jjc
Chromium, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	08/04/15 16:16	jjc
Cobalt, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	08/04/15 16:16	jjc
Copper, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	08/04/15 16:16	jjc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/04/15 16:16	jjc
Iron, dissolved	M200.7 ICP	1	0.07		*	mg/L	0.02	0.05	08/04/15 16:16	jjc
Lead, dissolved	M200.8 ICP-MS	1	0.0002	B	*	mg/L	0.0001	0.0005	08/11/15 22:10	mfm
Lithium, dissolved	M200.7 ICP	1	0.012	B	*	mg/L	0.008	0.04	08/04/15 16:16	jjc
Magnesium, dissolved	M200.7 ICP	1	4		*	mg/L	0.2	1	08/04/15 16:16	jjc
Manganese, dissolved	M200.7 ICP	1	0.032		*	mg/L	0.005	0.03	08/04/15 16:16	jjc
Mercury, dissolved	M245.1 CVAA	1		UH	*	mg/L	0.0002	0.001	08/10/15 13:48	nco
Molybdenum, dissolved	M200.7 ICP	1	0.36		*	mg/L	0.02	0.1	08/04/15 16:16	jjc
Nickel, dissolved	M200.7 ICP	1		U	*	mg/L	0.008	0.04	08/04/15 16:16	jjc
Potassium, dissolved	M200.7 ICP	1	5.7		*	mg/L	0.2	1	08/04/15 16:16	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/04/15 16:16	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0017		*	mg/L	0.0001	0.0003	08/18/15 14:30	msh
Silver, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.03	08/04/15 16:16	jjc
Sodium, dissolved	M200.7 ICP	1	3.1		*	mg/L	0.2	1	08/04/15 16:16	jjc
Strontium, dissolved	M200.7 ICP	1	7.400		*	mg/L	0.005	0.03	08/04/15 16:16	jjc
Sulfur, dissolved	M200.7 ICP	1	280		*	mg/L	0.3	1	08/04/15 16:16	jjc
Thallium, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	08/11/15 22:10	mfm
Tin, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/04/15 16:16	jjc
Titanium, dissolved	M200.7 ICP	1		U	*	mg/L	0.005	0.03	08/04/15 16:16	jjc
Vanadium, dissolved	M200.7 ICP	1	0.010	B	*	mg/L	0.005	0.03	08/04/15 16:16	jjc
Zinc, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	08/04/15 16:16	jjc

Arizona license number: AZ0102

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/2500-3300/KINETIC

ACZ Sample ID: **L25803-20**

Date Sampled: 06/29/15 00:00

Date Received: 07/31/15

Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1	0.18	B	*	mg/L	0.03	0.2	08/04/15 16:19	jic
Antimony, dissolved	M200.8 ICP-MS	1	0.0008	B	*	mg/L	0.0004	0.002	08/11/15 22:13	mfm
Arsenic, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0002	0.001	08/11/15 22:13	mfm
Barium, dissolved	M200.7 ICP	1	0.060		*	mg/L	0.003	0.02	08/04/15 16:19	jic
Beryllium, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.00005	0.0003	08/11/15 22:13	mfm
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/04/15 16:19	jic
Boron, dissolved	M200.7 ICP	1	0.16		*	mg/L	0.01	0.05	08/04/15 16:19	jic
Cadmium, dissolved	M200.8 ICP-MS	1	0.0001	B	*	mg/L	0.0001	0.0005	08/11/15 22:13	mfm
Calcium, dissolved	M200.7 ICP	1	427		*	mg/L	0.1	0.5	08/04/15 16:19	jic
Chromium, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	08/04/15 16:19	jic
Cobalt, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	08/04/15 16:19	jic
Copper, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	08/04/15 16:19	jic
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/04/15 16:19	jic
Iron, dissolved	M200.7 ICP	1	0.04	B	*	mg/L	0.02	0.05	08/04/15 16:19	jic
Lead, dissolved	M200.8 ICP-MS	1	0.0004	B	*	mg/L	0.0001	0.0005	08/11/15 22:13	mfm
Lithium, dissolved	M200.7 ICP	1	0.011	B	*	mg/L	0.008	0.04	08/04/15 16:19	jic
Magnesium, dissolved	M200.7 ICP	1	0.3	B	*	mg/L	0.2	1	08/04/15 16:19	jic
Manganese, dissolved	M200.7 ICP	1	0.007	B	*	mg/L	0.005	0.03	08/04/15 16:19	jic
Mercury, dissolved	M245.1 CVAA	1		UH	*	mg/L	0.0002	0.001	08/10/15 13:54	nco
Molybdenum, dissolved	M200.7 ICP	1	0.86		*	mg/L	0.02	0.1	08/04/15 16:19	jic
Nickel, dissolved	M200.7 ICP	1		U	*	mg/L	0.008	0.04	08/04/15 16:19	jic
Potassium, dissolved	M200.7 ICP	1	4.3		*	mg/L	0.2	1	08/04/15 16:19	jic
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	08/04/15 16:19	jic
Selenium, dissolved	M200.8 ICP-MS	1	0.0067		*	mg/L	0.0001	0.0003	08/11/15 22:13	mfm
Silver, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.03	08/04/15 16:19	jic
Sodium, dissolved	M200.7 ICP	1	1.8		*	mg/L	0.2	1	08/04/15 16:19	jic
Strontium, dissolved	M200.7 ICP	1	6.780		*	mg/L	0.005	0.03	08/04/15 16:19	jic
Sulfur, dissolved	M200.7 ICP	1	334		*	mg/L	0.3	1	08/04/15 16:19	jic
Thallium, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0001	0.0005	08/11/15 22:13	mfm
Tin, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	08/04/15 16:19	jic
Titanium, dissolved	M200.7 ICP	1		U	*	mg/L	0.005	0.03	08/04/15 16:19	jic
Vanadium, dissolved	M200.7 ICP	1		U	*	mg/L	0.005	0.03	08/04/15 16:19	jic
Zinc, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	08/04/15 16:19	jic

Arizona license number: **AZ0102**



Report Header Explanations

<i>Batch</i>	A distinct set of samples analyzed at a specific time
<i>Found</i>	Value of the QC Type of interest
<i>Limit</i>	Upper limit for RPD, in %.
<i>Lower</i>	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
<i>MDL</i>	Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #5). Allows for instrument and annual fluctuations.
<i>PCN/SCN</i>	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
<i>PQL</i>	Practical Quantitation Limit. Synonymous with the EPA term "minimum level".
<i>QC</i>	True Value of the Control Sample or the amount added to the Spike
<i>Rec</i>	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
<i>RPD</i>	Relative Percent Difference, calculation used for Duplicate QC Types
<i>Upper</i>	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
<i>Sample</i>	Value of the Sample of interest

QC Sample Types

<i>AS</i>	Analytical Spike (Post Digestion)	<i>LCSWD</i>	Laboratory Control Sample - Water Duplicate
<i>ASD</i>	Analytical Spike (Post Digestion) Duplicate	<i>LFB</i>	Laboratory Fortified Blank
<i>CCB</i>	Continuing Calibration Blank	<i>LFM</i>	Laboratory Fortified Matrix
<i>CCV</i>	Continuing Calibration Verification standard	<i>LFMD</i>	Laboratory Fortified Matrix Duplicate
<i>DUP</i>	Sample Duplicate	<i>LRB</i>	Laboratory Reagent Blank
<i>ICB</i>	Initial Calibration Blank	<i>MS</i>	Matrix Spike
<i>ICV</i>	Initial Calibration Verification standard	<i>MSD</i>	Matrix Spike Duplicate
<i>ICSAB</i>	Inter-element Correction Standard - A plus B solutions	<i>PBS</i>	Prep Blank - Soil
<i>LCSS</i>	Laboratory Control Sample - Soil	<i>PBW</i>	Prep Blank - Water
<i>LCSSD</i>	Laboratory Control Sample - Soil Duplicate	<i>PQV</i>	Practical Quantitation Verification standard
<i>LCSW</i>	Laboratory Control Sample - Water	<i>SDL</i>	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3)	EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste.
(5)	Standard Methods for the Examination of Water and Wastewater.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3)	Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5)	If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click:

<http://www.acz.com/public/extquallist.pdf>

Adrian Brown Consultants, Inc.

ACZ Project ID: **L25803**

Aluminum, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG387914													
WG387914ICV	ICV	08/04/15 14:31	II150716-1	2		1.974	mg/L	99	95	105			
WG387914ICB	ICB	08/04/15 14:37				U	mg/L		-0.09	0.09			
WG387914LFB	LFB	08/04/15 14:49	II150707-8	1.0015		1.083	mg/L	108	85	115			
L25803-01AS	AS	08/04/15 14:56	II150707-8	1.0015	10.5	11.16	mg/L	66	85	115			M3
L25803-01ASD	ASD	08/04/15 14:59	II150707-8	1.0015	10.5	11.2	mg/L	70	85	115	0	20	M3
L25803-11AS	AS	08/04/15 15:40	II150707-8	1.0015	18.9	19.13	mg/L	23	85	115			M3
L25803-11ASD	ASD	08/04/15 15:43	II150707-8	1.0015	18.9	19.06	mg/L	16	85	115	0	20	M3
WG387967													
WG387967ICV	ICV	08/05/15 12:43	II150716-1	2		1.976	mg/L	99	95	105			
WG387967ICB	ICB	08/05/15 12:49				U	mg/L		-0.09	0.09			
WG387967LFB	LFB	08/05/15 13:02	II150707-8	1.0015		1.09	mg/L	109	85	115			
L25791-07AS	AS	08/05/15 14:02	II150707-8	1.0015	U	1.087	mg/L	109	85	115			
L25791-07ASD	ASD	08/05/15 14:05	II150707-8	1.0015	U	1.107	mg/L	111	85	115	2	20	

Antimony, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG388331													
WG388331ICV	ICV	08/11/15 20:45	MS150601-9	.02		.01876	mg/L	94	90	110			
WG388331ICB	ICB	08/11/15 20:48				U	mg/L		-0.0012	0.0012			
WG388331LFB	LFB	08/11/15 20:51	MS150810-2	.01001		.01004	mg/L	100	85	115			
L25803-04AS	AS	08/11/15 21:06	MS150810-2	.01001	U	.01006	mg/L	100	70	130			
L25803-04ASD	ASD	08/11/15 21:08	MS150810-2	.01001	U	.00953	mg/L	95	70	130	5	20	
L25803-17AS	AS	08/11/15 22:01	MS150810-2	.01001	U	.01104	mg/L	110	70	130			
L25803-17ASD	ASD	08/11/15 22:04	MS150810-2	.01001	U	.00994	mg/L	99	70	130	10	20	

Arsenic, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG388331													
WG388331ICV	ICV	08/11/15 20:45	MS150601-9	.05		.05231	mg/L	105	90	110			
WG388331ICB	ICB	08/11/15 20:48				U	mg/L		-0.0006	0.0006			
WG388331LFB	LFB	08/11/15 20:51	MS150810-2	.0501		.05008	mg/L	100	85	115			
L25803-17AS	AS	08/11/15 22:01	MS150810-2	.0501	.0003	.05362	mg/L	106	70	130			
L25803-17ASD	ASD	08/11/15 22:04	MS150810-2	.0501	.0003	.05136	mg/L	102	70	130	4	20	
WG388431													
WG388431ICV	ICV	08/13/15 10:11	MS150601-9	.05		.0532	mg/L	106	90	110			
WG388431ICB	ICB	08/13/15 10:14				U	mg/L		-0.0006	0.0006			
WG388431LFB	LFB	08/13/15 10:17	MS150810-2	.0501		.04859	mg/L	97	85	115			
L25803-01AS	AS	08/13/15 10:23	MS150810-2	.2505	U	.2591	mg/L	103	70	130			
L25803-01ASD	ASD	08/13/15 10:26	MS150810-2	.2505	U	.2619	mg/L	105	70	130	1	20	
WG388431ICV1	ICV	08/13/15 11:43	MS150601-9	.05		.05394	mg/L	108	90	110			
WG388431ICB1	ICB	08/13/15 11:46				U	mg/L		-0.0006	0.0006			
L25803-12AS	AS	08/13/15 12:04	MS150810-2	.2505	.001	.2464	mg/L	98	70	130			
L25803-12ASD	ASD	08/13/15 12:07	MS150810-2	.2505	.001	.2505	mg/L	100	70	130	2	20	

Adrian Brown Consultants, Inc.

ACZ Project ID: **L25803**

Barium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG387914													
WG387914ICV	ICV	08/04/15 14:31	II150716-1	2		1.9715	mg/L	99	95	105			
WG387914ICB	ICB	08/04/15 14:37				U	mg/L		-0.009	0.009			
WG387914LFB	LFB	08/04/15 14:49	II150707-8	.5		.5015	mg/L	100	85	115			
L25803-01AS	AS	08/04/15 14:56	II150707-8	.5	.035	.5252	mg/L	98	85	115			
L25803-01ASD	ASD	08/04/15 14:59	II150707-8	.5	.035	.5264	mg/L	98	85	115	0	20	
L25803-11AS	AS	08/04/15 15:40	II150707-8	.5	.039	.5046	mg/L	93	85	115			
L25803-11ASD	ASD	08/04/15 15:43	II150707-8	.5	.039	.5005	mg/L	92	85	115	1	20	
WG387967													
WG387967ICV	ICV	08/05/15 12:43	II150716-1	2		1.9742	mg/L	99	95	105			
WG387967ICB	ICB	08/05/15 12:49				U	mg/L		-0.009	0.009			
WG387967LFB	LFB	08/05/15 13:02	II150707-8	.5		.5004	mg/L	100	85	115			
L25791-07AS	AS	08/05/15 14:02	II150707-8	.5	.01	.5034	mg/L	99	85	115			
L25791-07ASD	ASD	08/05/15 14:05	II150707-8	.5	.01	.5049	mg/L	99	85	115	0	20	

Beryllium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG388331													
WG388331ICV	ICV	08/11/15 20:45	MS150601-9	.05		.04941	mg/L	99	90	110			
WG388331ICB	ICB	08/11/15 20:48				U	mg/L		-0.00015	0.00015			
WG388331LFB	LFB	08/11/15 20:51	MS150810-2	.0501		.04915	mg/L	98	85	115			
L25803-17AS	AS	08/11/15 22:01	MS150810-2	.0501	.00254	.04466	mg/L	84	70	130			
L25803-17ASD	ASD	08/11/15 22:04	MS150810-2	.0501	.00254	.04263	mg/L	80	70	130	5	20	
WG388431													
WG388431ICV	ICV	08/13/15 10:11	MS150601-9	.05		.04896	mg/L	98	90	110			
WG388431ICB	ICB	08/13/15 10:14				U	mg/L		-0.00015	0.00015			
WG388431LFB	LFB	08/13/15 10:17	MS150810-2	.0501		.04613	mg/L	92	85	115			
L25803-01AS	AS	08/13/15 10:23	MS150810-2	.2505	.0051	.2465	mg/L	96	70	130			
L25803-01ASD	ASD	08/13/15 10:26	MS150810-2	.2505	.0051	.2489	mg/L	97	70	130	1	20	
WG388431ICV1	ICV	08/13/15 11:43	MS150601-9	.05		.04894	mg/L	98	90	110			
WG388431ICB1	ICB	08/13/15 11:46				U	mg/L		-0.00015	0.00015			
L25803-12AS	AS	08/13/15 12:04	MS150810-2	.2505	.0036	.23685	mg/L	93	70	130			
L25803-12ASD	ASD	08/13/15 12:07	MS150810-2	.2505	.0036	.22975	mg/L	90	70	130	3	20	

Adrian Brown Consultants, Inc.

ACZ Project ID: **L25803**

Bismuth, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG387914													
WG387914ICV	ICV	08/04/15 14:31	II150716-1	2		1.984	mg/L	99	95	105			
WG387914ICB	ICB	08/04/15 14:37				U	mg/L		-0.12	0.12			
WG387914LFB	LFB	08/04/15 14:49	II150707-8	1		.999	mg/L	100	85	115			
L25803-01AS	AS	08/04/15 14:56	II150707-8	1	U	.956	mg/L	96	85	115			
L25803-01ASD	ASD	08/04/15 14:59	II150707-8	1	U	.951	mg/L	95	85	115	1	20	
L25803-11AS	AS	08/04/15 15:40	II150707-8	1	U	.903	mg/L	90	85	115			
L25803-11ASD	ASD	08/04/15 15:43	II150707-8	1	U	.917	mg/L	92	85	115	2	20	
WG387967													
WG387967ICV	ICV	08/05/15 12:43	II150716-1	2		1.994	mg/L	100	95	105			
WG387967ICB	ICB	08/05/15 12:49				U	mg/L		-0.12	0.12			
WG387967LFB	LFB	08/05/15 13:02	II150707-8	1		1.012	mg/L	101	85	115			
L25791-07AS	AS	08/05/15 14:02	II150707-8	1	U	1.007	mg/L	101	85	115			
L25791-07ASD	ASD	08/05/15 14:05	II150707-8	1	U	1.004	mg/L	100	85	115	0	20	

Boron, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG387914													
WG387914ICV	ICV	08/04/15 14:31	II150716-1	2		1.991	mg/L	100	95	105			
WG387914ICB	ICB	08/04/15 14:37				U	mg/L		-0.03	0.03			
WG387914LFB	LFB	08/04/15 14:49	II150707-8	.5005		.518	mg/L	103	85	115			
L25803-01AS	AS	08/04/15 14:56	II150707-8	.5005	.05	.552	mg/L	100	85	115			
L25803-01ASD	ASD	08/04/15 14:59	II150707-8	.5005	.05	.553	mg/L	100	85	115	0	20	
L25803-11AS	AS	08/04/15 15:40	II150707-8	.5005	.04	.519	mg/L	96	85	115			
L25803-11ASD	ASD	08/04/15 15:43	II150707-8	.5005	.04	.511	mg/L	94	85	115	2	20	
WG387967													
WG387967ICV	ICV	08/05/15 12:43	II150716-1	2		1.986	mg/L	99	95	105			
WG387967ICB	ICB	08/05/15 12:49				U	mg/L		-0.03	0.03			
WG387967LFB	LFB	08/05/15 13:02	II150707-8	.5005		.513	mg/L	102	85	115			
L25791-07AS	AS	08/05/15 14:02	II150707-8	.5005	.01	.524	mg/L	103	85	115			
L25791-07ASD	ASD	08/05/15 14:05	II150707-8	.5005	.01	.524	mg/L	103	85	115	0	20	

Adrian Brown Consultants, Inc.

ACZ Project ID: **L25803**

Cadmium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG388331													
WG388331ICV	ICV	08/11/15 20:45	MS150601-9	.05		.05175	mg/L	104	90	110			
WG388331ICB	ICB	08/11/15 20:48				U	mg/L		-0.0003	0.0003			
WG388331LFB	LFB	08/11/15 20:51	MS150810-2	.05005		.04917	mg/L	98	85	115			
L25803-17AS	AS	08/11/15 22:01	MS150810-2	.05005	.003	.04906	mg/L	92	70	130			
L25803-17ASD	ASD	08/11/15 22:04	MS150810-2	.05005	.003	.04636	mg/L	87	70	130	6	20	
WG388431													
WG388431ICV	ICV	08/13/15 10:11	MS150601-9	.05		.05049	mg/L	101	90	110			
WG388431ICB	ICB	08/13/15 10:14				U	mg/L		-0.0003	0.0003			
WG388431LFB	LFB	08/13/15 10:17	MS150810-2	.05005		.04985	mg/L	100	85	115			
L25803-01AS	AS	08/13/15 10:23	MS150810-2	.25025	.025	.2785	mg/L	101	70	130			
L25803-01ASD	ASD	08/13/15 10:26	MS150810-2	.25025	.025	.2805	mg/L	102	70	130	1	20	
WG388431ICV1	ICV	08/13/15 11:43	MS150601-9	.05		.05103	mg/L	102	90	110			
WG388431ICB1	ICB	08/13/15 11:46				U	mg/L		-0.0003	0.0003			
L25803-12AS	AS	08/13/15 12:04	MS150810-2	.25025	.0136	.25895	mg/L	98	70	130			
L25803-12ASD	ASD	08/13/15 12:07	MS150810-2	.25025	.0136	.25205	mg/L	95	70	130	3	20	

Calcium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG387914													
WG387914ICV	ICV	08/04/15 14:31	II150716-1	100		99.52	mg/L	100	95	105			
WG387914ICB	ICB	08/04/15 14:37				U	mg/L		-0.3	0.3			
WG387914LFB	LFB	08/04/15 14:49	II150707-8	68.01261		71.46	mg/L	105	85	115			
L25803-01AS	AS	08/04/15 14:56	II150707-8	68.01261	102	168.5	mg/L	98	85	115			
L25803-01ASD	ASD	08/04/15 14:59	II150707-8	68.01261	102	168.3	mg/L	97	85	115	0	20	
L25803-11AS	AS	08/04/15 15:40	II150707-8	68.01261	51.2	116.4	mg/L	96	85	115			
L25803-11ASD	ASD	08/04/15 15:43	II150707-8	68.01261	51.2	115.2	mg/L	94	85	115	1	20	
WG387967													
WG387967ICV	ICV	08/05/15 12:43	II150716-1	100		99.76	mg/L	100	95	105			
WG387967ICB	ICB	08/05/15 12:49				U	mg/L		-0.3	0.3			
WG387967LFB	LFB	08/05/15 13:02	II150707-8	68.01261		71.06	mg/L	104	85	115			
L25791-07AS	AS	08/05/15 14:02	II150707-8	68.01261	518	570.7	mg/L	77	85	115			M3
L25791-07ASD	ASD	08/05/15 14:05	II150707-8	68.01261	518	566.1	mg/L	71	85	115	1	20	M3

Adrian Brown Consultants, Inc.

ACZ Project ID: **L25803**

Chromium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG387914													
WG387914ICV	ICV	08/04/15 14:31	II150716-1	2		1.963	mg/L	98	95	105			
WG387914ICB	ICB	08/04/15 14:37				U	mg/L		-0.03	0.03			
WG387914LFB	LFB	08/04/15 14:49	II150707-8	.5005		.498	mg/L	100	85	115			
L25803-01AS	AS	08/04/15 14:56	II150707-8	.5005	U	.493	mg/L	99	85	115			
L25803-01ASD	ASD	08/04/15 14:59	II150707-8	.5005	U	.49	mg/L	98	85	115	1	20	
L25803-11AS	AS	08/04/15 15:40	II150707-8	.5005	U	.463	mg/L	93	85	115			
L25803-11ASD	ASD	08/04/15 15:43	II150707-8	.5005	U	.455	mg/L	91	85	115	2	20	
WG387967													
WG387967ICV	ICV	08/05/15 12:43	II150716-1	2		1.976	mg/L	99	95	105			
WG387967ICB	ICB	08/05/15 12:49				U	mg/L		-0.03	0.03			
WG387967LFB	LFB	08/05/15 13:02	II150707-8	.5005		.494	mg/L	99	85	115			
L25791-07AS	AS	08/05/15 14:02	II150707-8	.5005	U	.48	mg/L	96	85	115			
L25791-07ASD	ASD	08/05/15 14:05	II150707-8	.5005	U	.474	mg/L	95	85	115	1	20	

Cobalt, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG387914													
WG387914ICV	ICV	08/04/15 14:31	II150716-1	2.002		1.904	mg/L	95	95	105			
WG387914ICB	ICB	08/04/15 14:37				U	mg/L		-0.03	0.03			
WG387914LFB	LFB	08/04/15 14:49	II150707-8	.5005		.499	mg/L	100	85	115			
L25803-01AS	AS	08/04/15 14:56	II150707-8	.5005	.1	.573	mg/L	95	85	115			
L25803-01ASD	ASD	08/04/15 14:59	II150707-8	.5005	.1	.573	mg/L	95	85	115	0	20	
L25803-11AS	AS	08/04/15 15:40	II150707-8	.5005	.14	.605	mg/L	93	85	115			
L25803-11ASD	ASD	08/04/15 15:43	II150707-8	.5005	.14	.597	mg/L	91	85	115	1	20	
WG387967													
WG387967ICV	ICV	08/05/15 12:43	II150716-1	2.002		1.917	mg/L	96	95	105			
WG387967ICB	ICB	08/05/15 12:49				U	mg/L		-0.03	0.03			
WG387967LFB	LFB	08/05/15 13:02	II150707-8	.5005		.496	mg/L	99	85	115			
L25791-07AS	AS	08/05/15 14:02	II150707-8	.5005	U	.482	mg/L	96	85	115			
L25791-07ASD	ASD	08/05/15 14:05	II150707-8	.5005	U	.476	mg/L	95	85	115	1	20	

Copper, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG387914													
WG387914ICV	ICV	08/04/15 14:31	II150716-1	2		1.936	mg/L	97	95	105			
WG387914ICB	ICB	08/04/15 14:37				U	mg/L		-0.03	0.03			
WG387914LFB	LFB	08/04/15 14:49	II150707-8	.499		.488	mg/L	98	85	115			
L25803-01AS	AS	08/04/15 14:56	II150707-8	.499	.45	.902	mg/L	91	85	115			
L25803-01ASD	ASD	08/04/15 14:59	II150707-8	.499	.45	.902	mg/L	91	85	115	0	20	
L25803-11AS	AS	08/04/15 15:40	II150707-8	.499	.9	1.292	mg/L	79	85	115			M2
L25803-11ASD	ASD	08/04/15 15:43	II150707-8	.499	.9	1.281	mg/L	76	85	115	1	20	M2
WG387967													
WG387967ICV	ICV	08/05/15 12:43	II150716-1	2		1.96	mg/L	98	95	105			
WG387967ICB	ICB	08/05/15 12:49				U	mg/L		-0.03	0.03			
WG387967LFB	LFB	08/05/15 13:02	II150707-8	.499		.492	mg/L	99	85	115			
L25791-07AS	AS	08/05/15 14:02	II150707-8	.499	U	.485	mg/L	97	85	115			
L25791-07ASD	ASD	08/05/15 14:05	II150707-8	.499	U	.481	mg/L	96	85	115	1	20	

Adrian Brown Consultants, Inc.

ACZ Project ID: **L25803**

Gallium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG387914													
WG387914ICV	ICV	08/04/15 14:31	II150716-1	2		2.02	mg/L	101	95	105			
WG387914ICB	ICB	08/04/15 14:37				U	mg/L		-0.3	0.3			
WG387914LFB	LFB	08/04/15 14:49	II150707-8	1		1.02	mg/L	102	85	115			
L25803-01AS	AS	08/04/15 14:56	II150707-8	1	U	.97	mg/L	97	85	115			
L25803-01ASD	ASD	08/04/15 14:59	II150707-8	1	U	.98	mg/L	98	85	115	1	20	
L25803-11AS	AS	08/04/15 15:40	II150707-8	1	U	.98	mg/L	98	85	115			
L25803-11ASD	ASD	08/04/15 15:43	II150707-8	1	U	.97	mg/L	97	85	115	1	20	
WG387967													
WG387967ICV	ICV	08/05/15 12:43	II150716-1	2		2.05	mg/L	103	95	105			
WG387967ICB	ICB	08/05/15 12:49				U	mg/L		-0.3	0.3			
WG387967LFB	LFB	08/05/15 13:02	II150707-8	1		1.02	mg/L	102	85	115			
L25791-07AS	AS	08/05/15 14:02	II150707-8	1	U	1.05	mg/L	105	85	115			
L25791-07ASD	ASD	08/05/15 14:05	II150707-8	1	U	1.04	mg/L	104	85	115	1	20	

Iron, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG387914													
WG387914ICV	ICV	08/04/15 14:31	II150716-1	2		1.954	mg/L	98	95	105			
WG387914ICB	ICB	08/04/15 14:37				U	mg/L		-0.06	0.06			
WG387914LFB	LFB	08/04/15 14:49	II150707-8	1.0001		1.01	mg/L	101	85	115			
L25803-01AS	AS	08/04/15 14:56	II150707-8	1.0001	49.2	48.01	mg/L	-119	85	115			M3
L25803-01ASD	ASD	08/04/15 14:59	II150707-8	1.0001	49.2	48.04	mg/L	-116	85	115	0	20	M3
L25803-11AS	AS	08/04/15 15:40	II150707-8	1.0001	111	107	mg/L	-400	85	115			M3
L25803-11ASD	ASD	08/04/15 15:43	II150707-8	1.0001	111	106.4	mg/L	-460	85	115	1	20	M3
WG387967													
WG387967ICV	ICV	08/05/15 12:43	II150716-1	2		1.95	mg/L	98	95	105			
WG387967ICB	ICB	08/05/15 12:49				U	mg/L		-0.06	0.06			
WG387967LFB	LFB	08/05/15 13:02	II150707-8	1.0001		1.039	mg/L	104	85	115			
L25791-07AS	AS	08/05/15 14:02	II150707-8	1.0001	U	.98	mg/L	98	85	115			
L25791-07ASD	ASD	08/05/15 14:05	II150707-8	1.0001	U	.973	mg/L	97	85	115	1	20	

Adrian Brown Consultants, Inc.

ACZ Project ID: **L25803**

Lead, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG388331													
WG388331ICV	ICV	08/11/15 20:45	MS150601-9	.05		.05143	mg/L	103	90	110			
WG388331ICB	ICB	08/11/15 20:48				U	mg/L		-0.0003	0.0003			
WG388331LFB	LFB	08/11/15 20:51	MS150810-2	.05005		.04856	mg/L	97	85	115			
L25803-04AS	AS	08/11/15 21:06	MS150810-2	.05005	.3675	.4371	mg/L	139	70	130			M3
L25803-04ASD	ASD	08/11/15 21:08	MS150810-2	.05005	.3675	.4133	mg/L	92	70	130	6	20	
L25803-17AS	AS	08/11/15 22:01	MS150810-2	.05005	.0616	.113	mg/L	103	70	130			
L25803-17ASD	ASD	08/11/15 22:04	MS150810-2	.05005	.0616	.1085	mg/L	94	70	130	4	20	
WG388431													
WG388431ICV	ICV	08/13/15 10:11	MS150601-9	.05		.04976	mg/L	100	90	110			
WG388431ICB	ICB	08/13/15 10:14				U	mg/L		-0.0003	0.0003			
WG388431LFB	LFB	08/13/15 10:17	MS150810-2	.05005		.04826	mg/L	96	85	115			
L25803-01AS	AS	08/13/15 10:23	MS150810-2	.25025	.941	1.219	mg/L	111	70	130			
L25803-01ASD	ASD	08/13/15 10:26	MS150810-2	.25025	.941	1.2195	mg/L	111	70	130	0	20	
WG388431ICV1	ICV	08/13/15 11:43	MS150601-9	.05		.05166	mg/L	103	90	110			
WG388431ICB1	ICB	08/13/15 11:46				U	mg/L		-0.0003	0.0003			
L25803-12AS	AS	08/13/15 12:04	MS150810-2	.25025	.8965	1.1485	mg/L	101	70	130			
L25803-12ASD	ASD	08/13/15 12:07	MS150810-2	.25025	.8965	1.1215	mg/L	90	70	130	2	20	

Lithium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG387914													
WG387914ICV	ICV	08/04/15 14:31	II150716-1	2		1.986	mg/L	99	95	105			
WG387914ICB	ICB	08/04/15 14:37				U	mg/L		-0.024	0.024			
WG387914LFB	LFB	08/04/15 14:49	II150707-8	1.001		.9987	mg/L	100	85	115			
L25803-01AS	AS	08/04/15 14:56	II150707-8	1.001	.024	1.017	mg/L	99	85	115			
L25803-01ASD	ASD	08/04/15 14:59	II150707-8	1.001	.024	1.022	mg/L	100	85	115	0	20	
L25803-11AS	AS	08/04/15 15:40	II150707-8	1.001	.022	.9725	mg/L	95	85	115			
L25803-11ASD	ASD	08/04/15 15:43	II150707-8	1.001	.022	.9643	mg/L	94	85	115	1	20	
WG387967													
WG387967ICV	ICV	08/05/15 12:43	II150716-1	2		2.0088	mg/L	100	95	105			
WG387967ICB	ICB	08/05/15 12:49				U	mg/L		-0.024	0.024			
WG387967LFB	LFB	08/05/15 13:02	II150707-8	1.001		1.007	mg/L	101	85	115			
L25791-07AS	AS	08/05/15 14:02	II150707-8	1.001	.017	1.035	mg/L	102	85	115			
L25791-07ASD	ASD	08/05/15 14:05	II150707-8	1.001	.017	1.04	mg/L	102	85	115	0	20	

Adrian Brown Consultants, Inc.

ACZ Project ID: **L25803**

Magnesium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG387914													
WG387914ICV	ICV	08/04/15 14:31	II150716-1	100		97.96	mg/L	98	95	105			
WG387914ICB	ICB	08/04/15 14:37				U	mg/L		-0.6	0.6			
WG387914LFB	LFB	08/04/15 14:49	II150707-8	50.00416		50.29	mg/L	101	85	115			
L25803-01AS	AS	08/04/15 14:56	II150707-8	50.00416	50.8	99.29	mg/L	97	85	115			
L25803-01ASD	ASD	08/04/15 14:59	II150707-8	50.00416	50.8	98.79	mg/L	96	85	115	1	20	
L25803-11AS	AS	08/04/15 15:40	II150707-8	50.00416	1.3	48.12	mg/L	94	85	115			
L25803-11ASD	ASD	08/04/15 15:43	II150707-8	50.00416	1.3	47.49	mg/L	92	85	115	1	20	
WG387967													
WG387967ICV	ICV	08/05/15 12:43	II150716-1	100		97.92	mg/L	98	95	105			
WG387967ICB	ICB	08/05/15 12:49				.23	mg/L		-0.6	0.6			
WG387967LFB	LFB	08/05/15 13:02	II150707-8	50.00416		49.77	mg/L	100	85	115			
L25791-07AS	AS	08/05/15 14:02	II150707-8	50.00416	82.1	130.5	mg/L	97	85	115			
L25791-07ASD	ASD	08/05/15 14:05	II150707-8	50.00416	82.1	130.8	mg/L	97	85	115	0	20	

Manganese, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG387914													
WG387914ICV	ICV	08/04/15 14:31	II150716-1	2		1.937	mg/L	97	95	105			
WG387914ICB	ICB	08/04/15 14:37				U	mg/L		-0.015	0.015			
WG387914LFB	LFB	08/04/15 14:49	II150707-8	.499		.4957	mg/L	99	85	115			
L25803-01AS	AS	08/04/15 14:56	II150707-8	.499	51.2	49.36	mg/L	-369	85	115			M3
L25803-01ASD	ASD	08/04/15 14:59	II150707-8	.499	51.2	49.09	mg/L	-423	85	115	1	20	M3
L25803-11AS	AS	08/04/15 15:40	II150707-8	.499	.373	.8111	mg/L	88	85	115			
L25803-11ASD	ASD	08/04/15 15:43	II150707-8	.499	.373	.8053	mg/L	87	85	115	1	20	
WG387967													
WG387967ICV	ICV	08/05/15 12:43	II150716-1	2		1.958	mg/L	98	95	105			
WG387967ICB	ICB	08/05/15 12:49				U	mg/L		-0.015	0.015			
WG387967LFB	LFB	08/05/15 13:02	II150707-8	.499		.503	mg/L	101	85	115			
L25791-07AS	AS	08/05/15 14:02	II150707-8	.499	.05	.5326	mg/L	97	85	115			
L25791-07ASD	ASD	08/05/15 14:05	II150707-8	.499	.05	.5318	mg/L	97	85	115	0	20	

Mercury, dissolved

M245.1 CVAA

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG387971													
WG387971ICV	ICV	08/10/15 12:50	II150730-1	.005		.00489	mg/L	98	95	105			
WG387971ICB	ICB	08/10/15 12:52				U	mg/L		-0.0002	0.0002			
WG387971LRB	LRB	08/10/15 12:54				U	mg/L		-0.00044	0.00044			
WG387971LFB	LFB	08/10/15 12:56	II150714-3	.002004		.00212	mg/L	106	85	115			
L25803-02LFM	LFM	08/10/15 13:03	II150714-3	.002004	U	.00201	mg/L	100	85	115			
L25803-02LFMD	LFMD	08/10/15 13:05	II150714-3	.002004	U	.00194	mg/L	97	85	115	4	20	
L25803-19LFM	LFM	08/10/15 13:50	II150714-3	.002004	U	.00195	mg/L	97	85	115			
L25803-19LFMD	LFMD	08/10/15 13:52	II150714-3	.002004	U	.00196	mg/L	98	85	115	1	20	

Adrian Brown Consultants, Inc.

ACZ Project ID: **L25803**

Molybdenum, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG387914													
WG387914ICV	ICV	08/04/15 14:31	II150716-1	2		1.992	mg/L	100	95	105			
WG387914ICB	ICB	08/04/15 14:37				U	mg/L		-0.06	0.06			
WG387914LFB	LFB	08/04/15 14:49	II150707-8	.4995		.521	mg/L	104	85	115			
L25803-01AS	AS	08/04/15 14:56	II150707-8	.4995	U	.499	mg/L	100	85	115			
L25803-01ASD	ASD	08/04/15 14:59	II150707-8	.4995	U	.499	mg/L	100	85	115	0	20	
L25803-11AS	AS	08/04/15 15:40	II150707-8	.4995	U	.487	mg/L	97	85	115			
L25803-11ASD	ASD	08/04/15 15:43	II150707-8	.4995	U	.48	mg/L	96	85	115	1	20	
WG387967													
WG387967ICV	ICV	08/05/15 12:43	II150716-1	2		2.006	mg/L	100	95	105			
WG387967ICB	ICB	08/05/15 12:49				U	mg/L		-0.06	0.06			
WG387967LFB	LFB	08/05/15 13:02	II150707-8	.4995		.516	mg/L	103	85	115			
L25791-07AS	AS	08/05/15 14:02	II150707-8	.4995	U	.498	mg/L	100	85	115			
L25791-07ASD	ASD	08/05/15 14:05	II150707-8	.4995	U	.518	mg/L	104	85	115	4	20	

Nickel, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG387914													
WG387914ICV	ICV	08/04/15 14:31	II150716-1	2		1.9732	mg/L	99	95	105			
WG387914ICB	ICB	08/04/15 14:37				U	mg/L		-0.024	0.024			
WG387914LFB	LFB	08/04/15 14:49	II150707-8	.501		.503	mg/L	100	85	115			
L25803-01AS	AS	08/04/15 14:56	II150707-8	.501	.066	.5439	mg/L	95	85	115			
L25803-01ASD	ASD	08/04/15 14:59	II150707-8	.501	.066	.5471	mg/L	96	85	115	1	20	
L25803-11AS	AS	08/04/15 15:40	II150707-8	.501	.062	.535	mg/L	94	85	115			
L25803-11ASD	ASD	08/04/15 15:43	II150707-8	.501	.062	.5235	mg/L	92	85	115	2	20	
WG387967													
WG387967ICV	ICV	08/05/15 12:43	II150716-1	2		1.9763	mg/L	99	95	105			
WG387967ICB	ICB	08/05/15 12:49				U	mg/L		-0.024	0.024			
WG387967LFB	LFB	08/05/15 13:02	II150707-8	.501		.5009	mg/L	100	85	115			
L25791-07AS	AS	08/05/15 14:02	II150707-8	.501	U	.4734	mg/L	94	85	115			
L25791-07ASD	ASD	08/05/15 14:05	II150707-8	.501	U	.4738	mg/L	95	85	115	0	20	

Potassium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG387914													
WG387914ICV	ICV	08/04/15 14:31	II150716-1	20		19.32	mg/L	97	95	105			
WG387914ICB	ICB	08/04/15 14:37				U	mg/L		-0.6	0.6			
WG387914LFB	LFB	08/04/15 14:49	II150707-8	100.0125		98.73	mg/L	99	85	115			
L25803-01AS	AS	08/04/15 14:56	II150707-8	100.0125	13.1	111.4	mg/L	98	85	115			
L25803-01ASD	ASD	08/04/15 14:59	II150707-8	100.0125	13.1	111.7	mg/L	99	85	115	0	20	
L25803-11AS	AS	08/04/15 15:40	II150707-8	100.0125	11.8	105.1	mg/L	93	85	115			
L25803-11ASD	ASD	08/04/15 15:43	II150707-8	100.0125	11.8	103.9	mg/L	92	85	115	1	20	
WG387967													
WG387967ICV	ICV	08/05/15 12:43	II150716-1	20		19.41	mg/L	97	95	105			
WG387967ICB	ICB	08/05/15 12:49				U	mg/L		-0.6	0.6			
WG387967LFB	LFB	08/05/15 13:02	II150707-8	100.0125		97.63	mg/L	98	85	115			
L25791-07AS	AS	08/05/15 14:02	II150707-8	100.0125	2.7	101.5	mg/L	99	85	115			
L25791-07ASD	ASD	08/05/15 14:05	II150707-8	100.0125	2.7	103.2	mg/L	100	85	115	2	20	

Adrian Brown Consultants, Inc.

ACZ Project ID: **L25803**

Scandium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG387914													
WG387914ICV	ICV	08/04/15 14:31	II150716-1	2		1.99	mg/L	100	95	105			
WG387914ICB	ICB	08/04/15 14:37				U	mg/L		-0.3	0.3			
WG387914LFB	LFB	08/04/15 14:49	II150707-8	.999		1.02	mg/L	102	85	115			
L25803-01AS	AS	08/04/15 14:56	II150707-8	.999	U	1.01	mg/L	101	85	115			
L25803-01ASD	ASD	08/04/15 14:59	II150707-8	.999	U	1.02	mg/L	102	85	115	1	20	
L25803-11AS	AS	08/04/15 15:40	II150707-8	.999	U	.96	mg/L	96	85	115			
L25803-11ASD	ASD	08/04/15 15:43	II150707-8	.999	U	.95	mg/L	95	85	115	1	20	

WG387967

WG387967ICV	ICV	08/05/15 12:43	II150716-1	2		2	mg/L	100	95	105			
WG387967ICB	ICB	08/05/15 12:49				U	mg/L		-0.3	0.3			
WG387967LFB	LFB	08/05/15 13:02	II150707-8	.999		1.02	mg/L	102	85	115			
L25791-07AS	AS	08/05/15 14:02	II150707-8	.999	U	1	mg/L	100	85	115			
L25791-07ASD	ASD	08/05/15 14:05	II150707-8	.999	U	1	mg/L	100	85	115	0	20	

Selenium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG388331													
WG388331ICV	ICV	08/11/15 20:45	MS150601-9	.05		.05104	mg/L	102	90	110			
WG388331ICB	ICB	08/11/15 20:48				.00022	mg/L		-0.0003	0.0003			
WG388331LFB	LFB	08/11/15 20:51	MS150810-2	.05015		.04898	mg/L	98	85	115			
L25803-17AS	AS	08/11/15 22:01	MS150810-2	.05015	.0191	.07973	mg/L	121	70	130			
L25803-17ASD	ASD	08/11/15 22:04	MS150810-2	.05015	.0191	.0756	mg/L	113	70	130	5	20	
WG388431													
WG388431ICV	ICV	08/13/15 10:11	MS150601-9	.05		.04926	mg/L	99	90	110			
WG388431ICB	ICB	08/13/15 10:14				.00024	mg/L		-0.0003	0.0003			
WG388431LFB	LFB	08/13/15 10:17	MS150810-2	.05015		.04993	mg/L	100	85	115			
L25803-01AS	AS	08/13/15 10:23	MS150810-2	.25075	.0104	.26685	mg/L	102	70	130			
L25803-01ASD	ASD	08/13/15 10:26	MS150810-2	.25075	.0104	.26545	mg/L	102	70	130	1	20	
WG388431ICV1	ICV	08/13/15 11:43	MS150601-9	.05		.05096	mg/L	102	90	110			
WG388696													
WG388696ICV	ICV	08/18/15 13:48	MS150601-9	.05		.05128	mg/L	103	90	110			
WG388696ICB	ICB	08/18/15 13:51				U	mg/L		-0.0003	0.0003			
WG388696LFB	LFB	08/18/15 13:54	MS150810-2	.05015		.04959	mg/L	99	85	115			
L25803-04AS	AS	08/18/15 14:01	MS150810-2	.05015	.0083	.06377	mg/L	111	70	130			
L25803-04ASD	ASD	08/18/15 14:04	MS150810-2	.05015	.0083	.0654	mg/L	114	70	130	3	20	

Adrian Brown Consultants, Inc.

ACZ Project ID: **L25803**

Silver, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG387914													
WG387914ICV	ICV	08/04/15 14:31	II150716-1	1.001		.987	mg/L	99	95	105			
WG387914ICB	ICB	08/04/15 14:37				U	mg/L		-0.03	0.03			
WG387914LFB	LFB	08/04/15 14:49	II150707-8	.502		.473	mg/L	94	85	115			
L25803-01AS	AS	08/04/15 14:56	II150707-8	.502	U	.385	mg/L	77	85	115			M2 ZA
L25803-01ASD	ASD	08/04/15 14:59	II150707-8	.502	U	.42	mg/L	84	85	115	9	20	M2 ZA
L25803-11AS	AS	08/04/15 15:40	II150707-8	.502	U	.369	mg/L	74	85	115			M2 ZA
L25803-11ASD	ASD	08/04/15 15:43	II150707-8	.502	U	.353	mg/L	70	85	115	4	20	M2 ZA
WG387967													
WG387967ICV	ICV	08/05/15 12:43	II150716-1	1.001		1	mg/L	100	95	105			
WG387967ICB	ICB	08/05/15 12:49				U	mg/L		-0.03	0.03			
WG387967LFB	LFB	08/05/15 13:02	II150707-8	.502		.474	mg/L	94	85	115			
L25791-07AS	AS	08/05/15 14:02	II150707-8	.502	U	.38	mg/L	76	85	115			M2 ZA
L25791-07ASD	ASD	08/05/15 14:05	II150707-8	.502	U	.347	mg/L	69	85	115	9	20	M2 ZA

Sodium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG387914													
WG387914ICV	ICV	08/04/15 14:31	II150716-1	100		96.41	mg/L	96	95	105			
WG387914ICB	ICB	08/04/15 14:37				U	mg/L		-0.6	0.6			
WG387914LFB	LFB	08/04/15 14:49	II150707-8	100.0581		98.88	mg/L	99	85	115			
L25803-01AS	AS	08/04/15 14:56	II150707-8	100.0581	2.3	101.3	mg/L	99	85	115			
L25803-01ASD	ASD	08/04/15 14:59	II150707-8	100.0581	2.3	101.6	mg/L	99	85	115	0	20	
L25803-11AS	AS	08/04/15 15:40	II150707-8	100.0581	2.3	96.09	mg/L	94	85	115			
L25803-11ASD	ASD	08/04/15 15:43	II150707-8	100.0581	2.3	95.13	mg/L	93	85	115	1	20	
WG387967													
WG387967ICV	ICV	08/05/15 12:43	II150716-1	100		96.25	mg/L	96	95	105			
WG387967ICB	ICB	08/05/15 12:49				U	mg/L		-0.6	0.6			
WG387967LFB	LFB	08/05/15 13:02	II150707-8	100.0581		98	mg/L	98	85	115			
L25791-07AS	AS	08/05/15 14:02	II150707-8	100.0581	32.2	130.2	mg/L	98	85	115			
L25791-07ASD	ASD	08/05/15 14:05	II150707-8	100.0581	32.2	132	mg/L	100	85	115	1	20	

Strontium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG387914													
WG387914ICV	ICV	08/04/15 14:31	II150716-1	2		1.9685	mg/L	98	95	105			
WG387914ICB	ICB	08/04/15 14:37				U	mg/L		-0.015	0.015			
WG387914LFB	LFB	08/04/15 14:49	II150707-8	.5005		.5171	mg/L	103	85	115			
L25803-01AS	AS	08/04/15 14:56	II150707-8	.5005	14	13.96	mg/L	-8	85	115			M3
L25803-01ASD	ASD	08/04/15 14:59	II150707-8	.5005	14	13.95	mg/L	-10	85	115	0	20	M3
L25803-11AS	AS	08/04/15 15:40	II150707-8	.5005	7.81	8.014	mg/L	41	85	115			M3
L25803-11ASD	ASD	08/04/15 15:43	II150707-8	.5005	7.81	7.936	mg/L	25	85	115	1	20	M3
WG387967													
WG387967ICV	ICV	08/05/15 12:43	II150716-1	2		1.973	mg/L	99	95	105			
WG387967ICB	ICB	08/05/15 12:49				U	mg/L		-0.015	0.015			
WG387967LFB	LFB	08/05/15 13:02	II150707-8	.5005		.5133	mg/L	103	85	115			
L25791-07AS	AS	08/05/15 14:02	II150707-8	.5005	2.54	2.923	mg/L	77	85	115			M3
L25791-07ASD	ASD	08/05/15 14:05	II150707-8	.5005	2.54	2.936	mg/L	79	85	115	0	20	M3

Adrian Brown Consultants, Inc.

ACZ Project ID: **L25803**

Sulfur, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG387914													
WG387914ICV	ICV	08/04/15 14:31	II150716-1	49.97		49.55	mg/L	99	95	105			
WG387914ICB	ICB	08/04/15 14:37				U	mg/L		-0.9	0.9			
WG387914LFB	LFB	08/04/15 14:49	II150707-8	5.02		5.1	mg/L	102	85	115			
L25803-01AS	AS	08/04/15 14:56	II150707-8	5.02	323	324.7	mg/L	34	85	115			M3
L25803-01ASD	ASD	08/04/15 14:59	II150707-8	5.02	323	325.5	mg/L	50	85	115	0	20	M3
L25803-11AS	AS	08/04/15 15:40	II150707-8	5.02	264	269.1	mg/L	102	85	115			
L25803-11ASD	ASD	08/04/15 15:43	II150707-8	5.02	264	265.2	mg/L	24	85	115	1	20	M3
WG387967													
WG387967ICV	ICV	08/05/15 12:43	II150716-1	49.97		49.22	mg/L	98	95	105			
WG387967ICB	ICB	08/05/15 12:49				U	mg/L		-0.9	0.9			
WG387967LFB	LFB	08/05/15 13:02	II150707-8	5.02		5.03	mg/L	100	85	115			
L25791-07AS	AS	08/05/15 14:02	II150707-8	5.02	329	330.6	mg/L	32	85	115			M3
L25791-07ASD	ASD	08/05/15 14:05	II150707-8	5.02	329	328.8	mg/L	-4	85	115	1	20	M3

Thallium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG388331													
WG388331ICV	ICV	08/11/15 20:45	MS150601-9	.05		.05416	mg/L	108	90	110			
WG388331ICB	ICB	08/11/15 20:48				U	mg/L		-0.0003	0.0003			
WG388331LFB	LFB	08/11/15 20:51	MS150810-2	.0501		.05053	mg/L	101	85	115			
L25803-17AS	AS	08/11/15 22:01	MS150810-2	.0501	.0001	.05406	mg/L	108	70	130			
L25803-17ASD	ASD	08/11/15 22:04	MS150810-2	.0501	.0001	.05002	mg/L	100	70	130	8	20	
WG388431													
WG388431ICV	ICV	08/13/15 10:11	MS150601-9	.05		.05238	mg/L	105	90	110			
WG388431ICB	ICB	08/13/15 10:14				U	mg/L		-0.0003	0.0003			
WG388431LFB	LFB	08/13/15 10:17	MS150810-2	.0501		.04977	mg/L	99	85	115			
L25803-01AS	AS	08/13/15 10:23	MS150810-2	.2505	.0006	.25535	mg/L	102	70	130			
L25803-01ASD	ASD	08/13/15 10:26	MS150810-2	.2505	.0006	.2552	mg/L	102	70	130	0	20	
WG388431ICV1	ICV	08/13/15 11:43	MS150601-9	.05		.0534	mg/L	107	90	110			
WG388431ICB1	ICB	08/13/15 11:46				U	mg/L		-0.0003	0.0003			
L25803-12AS	AS	08/13/15 12:04	MS150810-2	.2505	.0006	.2523	mg/L	100	70	130			
L25803-12ASD	ASD	08/13/15 12:07	MS150810-2	.2505	.0006	.24645	mg/L	98	70	130	2	20	
WG388696													
WG388696ICV	ICV	08/18/15 13:48	MS150601-9	.05		.05479	mg/L	110	90	110			
WG388696ICB	ICB	08/18/15 13:51				U	mg/L		-0.0003	0.0003			
WG388696LFB	LFB	08/18/15 13:54	MS150810-2	.0501		.05068	mg/L	101	85	115			
L25803-04AS	AS	08/18/15 14:01	MS150810-2	.0501	.0002	.05596	mg/L	111	70	130			
L25803-04ASD	ASD	08/18/15 14:04	MS150810-2	.0501	.0002	.05422	mg/L	108	70	130	3	20	

Adrian Brown Consultants, Inc.

ACZ Project ID: **L25803**

Tin, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG387914													
WG387914ICV	ICV	08/04/15 14:31	II150716-1	2		2.024	mg/L	101	95	105			
WG387914ICB	ICB	08/04/15 14:37				U	mg/L		-0.12	0.12			
WG387914LFB	LFB	08/04/15 14:49	II150707-8	1.001		.996	mg/L	100	85	115			
L25803-01AS	AS	08/04/15 14:56	II150707-8	1.001	U	.979	mg/L	98	85	115			
L25803-01ASD	ASD	08/04/15 14:59	II150707-8	1.001	U	.976	mg/L	98	85	115	0	20	
L25803-11AS	AS	08/04/15 15:40	II150707-8	1.001	U	.945	mg/L	94	85	115			
L25803-11ASD	ASD	08/04/15 15:43	II150707-8	1.001	U	.919	mg/L	92	85	115	3	20	
WG387967													
WG387967ICV	ICV	08/05/15 12:43	II150716-1	2		2.013	mg/L	101	95	105			
WG387967ICB	ICB	08/05/15 12:49				U	mg/L		-0.12	0.12			
WG387967LFB	LFB	08/05/15 13:02	II150707-8	1.001		.972	mg/L	97	85	115			
L25791-07AS	AS	08/05/15 14:02	II150707-8	1.001	U	.946	mg/L	95	85	115			
L25791-07ASD	ASD	08/05/15 14:05	II150707-8	1.001	U	.953	mg/L	95	85	115	1	20	

Titanium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG387914													
WG387914ICV	ICV	08/04/15 14:31	II150716-1	2		2.0025	mg/L	100	95	105			
WG387914ICB	ICB	08/04/15 14:37				U	mg/L		-0.015	0.015			
WG387914LFB	LFB	08/04/15 14:49	II150707-8	.999		1.012	mg/L	101	85	115			
L25803-01AS	AS	08/04/15 14:56	II150707-8	.999	U	.9895	mg/L	99	85	115			
L25803-01ASD	ASD	08/04/15 14:59	II150707-8	.999	U	.9925	mg/L	99	85	115	0	20	
L25803-11AS	AS	08/04/15 15:40	II150707-8	.999	.016	.9626	mg/L	95	85	115			
L25803-11ASD	ASD	08/04/15 15:43	II150707-8	.999	.016	.9539	mg/L	94	85	115	1	20	
WG387967													
WG387967ICV	ICV	08/05/15 12:43	II150716-1	2		2.0172	mg/L	101	95	105			
WG387967ICB	ICB	08/05/15 12:49				U	mg/L		-0.015	0.015			
WG387967LFB	LFB	08/05/15 13:02	II150707-8	.999		1.02	mg/L	102	85	115			
L25791-07AS	AS	08/05/15 14:02	II150707-8	.999	U	1.007	mg/L	101	85	115			
L25791-07ASD	ASD	08/05/15 14:05	II150707-8	.999	U	1.009	mg/L	101	85	115	0	20	

Vanadium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG387914													
WG387914ICV	ICV	08/04/15 14:31	II150716-1	2		2.0072	mg/L	100	95	105			
WG387914ICB	ICB	08/04/15 14:37				U	mg/L		-0.015	0.015			
WG387914LFB	LFB	08/04/15 14:49	II150707-8	.5		.5252	mg/L	105	85	115			
L25803-01AS	AS	08/04/15 14:56	II150707-8	.5	.007	.5178	mg/L	102	85	115			
L25803-01ASD	ASD	08/04/15 14:59	II150707-8	.5	.007	.5192	mg/L	102	85	115	0	20	
L25803-11AS	AS	08/04/15 15:40	II150707-8	.5	.014	.496	mg/L	96	85	115			
L25803-11ASD	ASD	08/04/15 15:43	II150707-8	.5	.014	.4914	mg/L	95	85	115	1	20	
WG387967													
WG387967ICV	ICV	08/05/15 12:43	II150716-1	2		2.0062	mg/L	100	95	105			
WG387967ICB	ICB	08/05/15 12:49				U	mg/L		-0.015	0.015			
WG387967LFB	LFB	08/05/15 13:02	II150707-8	.5		.5184	mg/L	104	85	115			
L25791-07AS	AS	08/05/15 14:02	II150707-8	.5	U	.5067	mg/L	101	85	115			
L25791-07ASD	ASD	08/05/15 14:05	II150707-8	.5	U	.5131	mg/L	103	85	115	1	20	

Adrian Brown Consultants, Inc.

ACZ Project ID: **L25803**

Zinc, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG387914													
WG387914ICV	ICV	08/04/15 14:31	II150716-1	2		1.96	mg/L	98	95	105			
WG387914ICB	ICB	08/04/15 14:37				U	mg/L		-0.03	0.03			
WG387914LFB	LFB	08/04/15 14:49	II150707-8	.4995		.516	mg/L	103	85	115			
L25803-01AS	AS	08/04/15 14:56	II150707-8	.4995	3.73	4.004	mg/L	55	85	115			M3
L25803-01ASD	ASD	08/04/15 14:59	II150707-8	.4995	3.73	4.004	mg/L	55	85	115	0	20	M3
L25803-11AS	AS	08/04/15 15:40	II150707-8	.4995	6.36	6.566	mg/L	41	85	115			M3
L25803-11ASD	ASD	08/04/15 15:43	II150707-8	.4995	6.36	6.506	mg/L	29	85	115	1	20	M3
WG387967													
WG387967ICV	ICV	08/05/15 12:43	II150716-1	2		1.921	mg/L	96	95	105			
WG387967ICB	ICB	08/05/15 12:49				U	mg/L		-0.03	0.03			
WG387967LFB	LFB	08/05/15 13:02	II150707-8	.4995		.499	mg/L	100	85	115			
L25791-07AS	AS	08/05/15 14:02	II150707-8	.4995	U	.477	mg/L	95	85	115			
L25791-07ASD	ASD	08/05/15 14:05	II150707-8	.4995	U	.481	mg/L	96	85	115	1	20	

Adrian Brown Consultants, Inc.

ACZ Project ID: **L25803**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION	
L25803-01	WG387914	Aluminum, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.	
		Iron, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.	
		Manganese, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.	
	WG387971	Mercury, dissolved	M245.1 CVAA	H3	Sample was received and analyzed past holding time.	
	WG388431	Selenium, dissolved	M200.8 ICP-MS	BB	Target analyte detected in calibration blank at or above acceptance limit. Sample value was > 10X the concentration in the calibration blank.	
	WG387914	Silver, dissolved	M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.	
			M200.7 ICP	ZA	Poor recovery for Silver quality control is accepted due to low Silver solubility in samples, digestates, or extracts that do not contain sufficient Hydrochloric acid.	
		Strontium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.	
		Sulfur, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.	
		Zinc, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.	
L25803-02	WG387914	Aluminum, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.	
		Iron, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.	
		Manganese, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.	
	WG387971	Mercury, dissolved	M245.1 CVAA	H3	Sample was received and analyzed past holding time.	
	WG388431	Selenium, dissolved	M200.8 ICP-MS	BB	Target analyte detected in calibration blank at or above acceptance limit. Sample value was > 10X the concentration in the calibration blank.	
	WG387914	Silver, dissolved	M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.	
			M200.7 ICP	ZA	Poor recovery for Silver quality control is accepted due to low Silver solubility in samples, digestates, or extracts that do not contain sufficient Hydrochloric acid.	
		Strontium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.	
		Sulfur, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.	
		Zinc, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.	

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ACZ Project ID: **L25803**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L25803-03	WG387914	Aluminum, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Iron, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Manganese, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG387971	Mercury, dissolved	M245.1 CVAA	H3	Sample was received and analyzed past holding time.
	WG388431	Selenium, dissolved	M200.8 ICP-MS	BB	Target analyte detected in calibration blank at or above acceptance limit. Sample value was > 10X the concentration in the calibration blank.
	WG387914	Silver, dissolved	M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M200.7 ICP	ZA	Poor recovery for Silver quality control is accepted due to low Silver solubility in samples, digestates, or extracts that do not contain sufficient Hydrochloric acid.
		Strontium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Sulfur, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Zinc, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.

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ACZ Project ID: **L25803**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L25803-04	WG387914	Aluminum, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Iron, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG388331	Lead, dissolved	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG387914	Manganese, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG387971	Mercury, dissolved	M245.1 CVAA	H3	Sample was received and analyzed past holding time.
	WG388431	Selenium, dissolved	M200.8 ICP-MS	BB	Target analyte detected in calibration blank at or above acceptance limit. Sample value was > 10X the concentration in the calibration blank.
	WG387914	Silver, dissolved	M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M200.7 ICP	ZA	Poor recovery for Silver quality control is accepted due to low Silver solubility in samples, digestates, or extracts that do not contain sufficient Hydrochloric acid.
		Strontium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Sulfur, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Zinc, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.

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ACZ Project ID: **L25803**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L25803-05	WG387914	Aluminum, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Iron, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Manganese, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG387971	Mercury, dissolved	M245.1 CVAA	H3	Sample was received and analyzed past holding time.
	WG388431	Selenium, dissolved	M200.8 ICP-MS	BB	Target analyte detected in calibration blank at or above acceptance limit. Sample value was > 10X the concentration in the calibration blank.
	WG387914	Silver, dissolved	M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M200.7 ICP	ZA	Poor recovery for Silver quality control is accepted due to low Silver solubility in samples, digestates, or extracts that do not contain sufficient Hydrochloric acid.
		Strontium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Sulfur, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Zinc, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.

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ACZ Project ID: **L25803**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L25803-06	WG387914	Aluminum, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Iron, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG388331	Lead, dissolved	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG387914	Manganese, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG387971	Mercury, dissolved	M245.1 CVAA	H3	Sample was received and analyzed past holding time.
	WG388431	Selenium, dissolved	M200.8 ICP-MS	BB	Target analyte detected in calibration blank at or above acceptance limit. Sample value was > 10X the concentration in the calibration blank.
	WG387914	Silver, dissolved	M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M200.7 ICP	ZA	Poor recovery for Silver quality control is accepted due to low Silver solubility in samples, digestates, or extracts that do not contain sufficient Hydrochloric acid.
		Strontium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Sulfur, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Zinc, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.

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ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L25803-07	WG387914	Aluminum, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Iron, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG388331	Lead, dissolved	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG387914	Manganese, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG387971	Mercury, dissolved	M245.1 CVAA	H3	Sample was received and analyzed past holding time.
	WG388431	Selenium, dissolved	M200.8 ICP-MS	BB	Target analyte detected in calibration blank at or above acceptance limit. Sample value was > 10X the concentration in the calibration blank.
	WG387914	Silver, dissolved	M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M200.7 ICP	ZA	Poor recovery for Silver quality control is accepted due to low Silver solubility in samples, digestates, or extracts that do not contain sufficient Hydrochloric acid.
		Strontium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Sulfur, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Zinc, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.

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ACZ Project ID: **L25803**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L25803-08	WG387914	Aluminum, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Iron, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG388331	Lead, dissolved	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG387914	Manganese, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG387971	Mercury, dissolved	M245.1 CVAA	H3	Sample was received and analyzed past holding time.
	WG387914	Silver, dissolved	M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M200.7 ICP	ZA	Poor recovery for Silver quality control is accepted due to low Silver solubility in samples, digestates, or extracts that do not contain sufficient Hydrochloric acid.
		Strontium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Sulfur, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Zinc, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.

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ACZ Project ID: **L25803**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L25803-09	WG387914	Aluminum, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Iron, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG388331	Lead, dissolved	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG387914	Manganese, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG387971	Mercury, dissolved	M245.1 CVAA	H3	Sample was received and analyzed past holding time.
	WG387914	Silver, dissolved	M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M200.7 ICP	ZA	Poor recovery for Silver quality control is accepted due to low Silver solubility in samples, digestates, or extracts that do not contain sufficient Hydrochloric acid.
		Strontium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Sulfur, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Zinc, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.

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ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L25803-10	WG387967	Barium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Bismuth, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Boron, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Calcium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Chromium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Cobalt, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Gallium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG388331	Lead, dissolved	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG387967	Lithium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Magnesium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
	WG387971	Mercury, dissolved	M245.1 CVAA	H3	Sample was received and analyzed past holding time.
	WG387967	Molybdenum, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Nickel, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Scandium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Silver, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
			M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M200.7 ICP	ZA	Poor recovery for Silver quality control is accepted due to low Silver solubility in samples, digestates, or extracts that do not contain sufficient Hydrochloric acid.
		Sodium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Strontium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
				M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Sulfur, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Tin, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Titanium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.
		Vanadium, dissolved	M200.7 ICP	D1	Sample required dilution due to matrix.

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ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L25803-11	WG387914	Aluminum, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Copper, dissolved	M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
		Iron, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG387971	Mercury, dissolved	M245.1 CVAA	H3	Sample was received and analyzed past holding time.
	WG388331	Selenium, dissolved	M200.8 ICP-MS	BB	Target analyte detected in calibration blank at or above acceptance limit. Sample value was > 10X the concentration in the calibration blank.
	WG387914	Silver, dissolved	M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M200.7 ICP	ZA	Poor recovery for Silver quality control is accepted due to low Silver solubility in samples, digestates, or extracts that do not contain sufficient Hydrochloric acid.
		Strontium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Sulfur, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Zinc, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
L25803-12	WG387914	Aluminum, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Copper, dissolved	M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
		Iron, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG387971	Mercury, dissolved	M245.1 CVAA	H3	Sample was received and analyzed past holding time.
	WG388331	Selenium, dissolved	M200.8 ICP-MS	BB	Target analyte detected in calibration blank at or above acceptance limit. Sample value was > 10X the concentration in the calibration blank.
	WG387914	Silver, dissolved	M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M200.7 ICP	ZA	Poor recovery for Silver quality control is accepted due to low Silver solubility in samples, digestates, or extracts that do not contain sufficient Hydrochloric acid.
		Strontium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Sulfur, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Zinc, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.

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ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L25803-13	WG387914	Aluminum, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Copper, dissolved	M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
		Iron, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG387971	Mercury, dissolved	M245.1 CVAA	H3	Sample was received and analyzed past holding time.
	WG388331	Selenium, dissolved	M200.8 ICP-MS	BB	Target analyte detected in calibration blank at or above acceptance limit. Sample value was > 10X the concentration in the calibration blank.
	WG387914	Silver, dissolved	M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M200.7 ICP	ZA	Poor recovery for Silver quality control is accepted due to low Silver solubility in samples, digestates, or extracts that do not contain sufficient Hydrochloric acid.
		Strontium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Sulfur, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Zinc, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
L25803-14	WG387914	Aluminum, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Copper, dissolved	M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
		Iron, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG387971	Mercury, dissolved	M245.1 CVAA	H3	Sample was received and analyzed past holding time.
	WG388331	Selenium, dissolved	M200.8 ICP-MS	BB	Target analyte detected in calibration blank at or above acceptance limit. Sample value was > 10X the concentration in the calibration blank.
	WG387914	Silver, dissolved	M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M200.7 ICP	ZA	Poor recovery for Silver quality control is accepted due to low Silver solubility in samples, digestates, or extracts that do not contain sufficient Hydrochloric acid.
		Strontium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Sulfur, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Zinc, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.

Adrian Brown Consultants, Inc.

ACZ Project ID: **L25803**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L25803-15	WG387914	Aluminum, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Copper, dissolved	M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
		Iron, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG387971	Mercury, dissolved	M245.1 CVAA	H3	Sample was received and analyzed past holding time.
	WG388331	Selenium, dissolved	M200.8 ICP-MS	BB	Target analyte detected in calibration blank at or above acceptance limit. Sample value was > 10X the concentration in the calibration blank.
	WG387914	Silver, dissolved	M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M200.7 ICP	ZA	Poor recovery for Silver quality control is accepted due to low Silver solubility in samples, digestates, or extracts that do not contain sufficient Hydrochloric acid.
		Strontium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Sulfur, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Zinc, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
L25803-16	WG387914	Aluminum, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Copper, dissolved	M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
		Iron, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG387971	Mercury, dissolved	M245.1 CVAA	H3	Sample was received and analyzed past holding time.
	WG388331	Selenium, dissolved	M200.8 ICP-MS	BB	Target analyte detected in calibration blank at or above acceptance limit. Sample value was > 10X the concentration in the calibration blank.
	WG387914	Silver, dissolved	M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M200.7 ICP	ZA	Poor recovery for Silver quality control is accepted due to low Silver solubility in samples, digestates, or extracts that do not contain sufficient Hydrochloric acid.
		Strontium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG387967	Sulfur, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Titanium, dissolved	M200.7 ICP	DB	Sample required dilution due to low bias result.
	WG387914	Zinc, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.

Adrian Brown Consultants, Inc.

ACZ Project ID: **L25803**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L25803-17	WG387914	Aluminum, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Copper, dissolved	M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
		Iron, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG387971	Mercury, dissolved	M245.1 CVAA	H3	Sample was received and analyzed past holding time.
	WG388331	Selenium, dissolved	M200.8 ICP-MS	BB	Target analyte detected in calibration blank at or above acceptance limit. Sample value was > 10X the concentration in the calibration blank.
	WG387914	Silver, dissolved	M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M200.7 ICP	ZA	Poor recovery for Silver quality control is accepted due to low Silver solubility in samples, digestates, or extracts that do not contain sufficient Hydrochloric acid.
		Strontium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG387967	Sulfur, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Titanium, dissolved	M200.7 ICP	DB	Sample required dilution due to low bias result.
	WG387914	Zinc, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
L25803-18	WG387914	Aluminum, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Copper, dissolved	M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
		Iron, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG387971	Mercury, dissolved	M245.1 CVAA	H3	Sample was received and analyzed past holding time.
	WG387914	Silver, dissolved	M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M200.7 ICP	ZA	Poor recovery for Silver quality control is accepted due to low Silver solubility in samples, digestates, or extracts that do not contain sufficient Hydrochloric acid.
		Strontium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG387967	Sulfur, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG387914	Titanium, dissolved	M200.7 ICP	DB	Sample required dilution due to low bias result.
	WG387914	Zinc, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.

Adrian Brown Consultants, Inc.

ACZ Project ID: **L25803**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L25803-19	WG387914	Aluminum, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Copper, dissolved	M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
		Iron, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG387971	Mercury, dissolved	M245.1 CVAA	H3	Sample was received and analyzed past holding time.
	WG387914	Silver, dissolved	M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M200.7 ICP	ZA	Poor recovery for Silver quality control is accepted due to low Silver solubility in samples, digestates, or extracts that do not contain sufficient Hydrochloric acid.
		Strontium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Sulfur, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Zinc, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
L25803-20	WG387914	Aluminum, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Copper, dissolved	M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
		Iron, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG387971	Mercury, dissolved	M245.1 CVAA	H3	Sample was received and analyzed past holding time.
	WG388331	Selenium, dissolved	M200.8 ICP-MS	BB	Target analyte detected in calibration blank at or above acceptance limit. Sample value was > 10X the concentration in the calibration blank.
	WG387914	Silver, dissolved	M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M200.7 ICP	ZA	Poor recovery for Silver quality control is accepted due to low Silver solubility in samples, digestates, or extracts that do not contain sufficient Hydrochloric acid.
		Strontium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Sulfur, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Zinc, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.

Adrian Brown Consultants, Inc.

ACZ Project ID: **L25803**

Metals Analysis

The following parameters are not offered for certification or are not covered by AZ certificate #AZ0102.

Aluminum, dissolved	M200.7 ICP
Antimony, dissolved	M200.8 ICP-MS
Arsenic, dissolved	M200.8 ICP-MS
Barium, dissolved	M200.7 ICP
Beryllium, dissolved	M200.8 ICP-MS
Bismuth, dissolved	M200.7 ICP
Boron, dissolved	M200.7 ICP
Cadmium, dissolved	M200.8 ICP-MS
Calcium, dissolved	M200.7 ICP
Chromium, dissolved	M200.7 ICP
Cobalt, dissolved	M200.7 ICP
Copper, dissolved	M200.7 ICP
Gallium, dissolved	M200.7 ICP
Iron, dissolved	M200.7 ICP
Lead, dissolved	M200.8 ICP-MS
Lithium, dissolved	M200.7 ICP
Magnesium, dissolved	M200.7 ICP
Manganese, dissolved	M200.7 ICP
Mercury, dissolved	M245.1 CVAA
Molybdenum, dissolved	M200.7 ICP
Nickel, dissolved	M200.7 ICP
Potassium, dissolved	M200.7 ICP
Scandium, dissolved	M200.7 ICP
Selenium, dissolved	M200.8 ICP-MS
Silver, dissolved	M200.7 ICP
Sodium, dissolved	M200.7 ICP
Strontium, dissolved	M200.7 ICP
Sulfur, dissolved	M200.7 ICP
Thallium, dissolved	M200.8 ICP-MS
Tin, dissolved	M200.7 ICP
Titanium, dissolved	M200.7 ICP
Vanadium, dissolved	M200.7 ICP
Zinc, dissolved	M200.7 ICP

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Aluminum, dissolved	M200.7 ICP
Antimony, dissolved	M200.8 ICP-MS
Arsenic, dissolved	M200.8 ICP-MS
Barium, dissolved	M200.7 ICP
Beryllium, dissolved	M200.8 ICP-MS
Bismuth, dissolved	M200.7 ICP
Boron, dissolved	M200.7 ICP
Cadmium, dissolved	M200.8 ICP-MS
Calcium, dissolved	M200.7 ICP
Chromium, dissolved	M200.7 ICP
Cobalt, dissolved	M200.7 ICP
Copper, dissolved	M200.7 ICP
Gallium, dissolved	M200.7 ICP

Adrian Brown Consultants, Inc.

ACZ Project ID: **L25803**

Iron, dissolved	M200.7 ICP
Lead, dissolved	M200.8 ICP-MS
Lithium, dissolved	M200.7 ICP
Magnesium, dissolved	M200.7 ICP
Manganese, dissolved	M200.7 ICP
Mercury, dissolved	M245.1 CVAA
Molybdenum, dissolved	M200.7 ICP
Nickel, dissolved	M200.7 ICP
Potassium, dissolved	M200.7 ICP
Scandium, dissolved	M200.7 ICP
Selenium, dissolved	M200.8 ICP-MS
Silver, dissolved	M200.7 ICP
Sodium, dissolved	M200.7 ICP
Strontium, dissolved	M200.7 ICP
Sulfur, dissolved	M200.7 ICP
Thallium, dissolved	M200.8 ICP-MS
Tin, dissolved	M200.7 ICP
Titanium, dissolved	M200.7 ICP
Vanadium, dissolved	M200.7 ICP
Zinc, dissolved	M200.7 ICP

Adrian Brown Consultants, Inc.

ACZ Project ID: L25803

Date Received: 07/31/2015 14:53

Received By: kmo

Date Printed: 8/3/2015

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?	☐	☐	☒
2) Is the Chain of Custody or other directive shipping papers present?	☒	☐	☐
3) Does this project require special handling procedures such as CLP protocol?	☐	☐	☒
4) Are any samples NRC licensable material?	☐	☐	☒
5) If samples are received past hold time, proceed with requested short hold time analyses?	☒	☐	☐
6) Is the Chain of Custody complete and accurate?	☒	☐	☐
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?	☐	☒	☐

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	☒	☐	☐
9) Are all labels on containers and are they intact and legible?	☒	☐	☐
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	☒	☐	☐
11) For preserved bottle types, was the pH checked and within limits? ¹	☒	☐	☐
12) Is there sufficient sample volume to perform all requested work?	☒	☐	☐
13) Is the custody seal intact on all containers?	☐	☐	☒
14) Are samples that require zero headspace acceptable?	☐	☐	☒
15) Are all sample containers appropriate for analytical requirements?	☒	☐	☐
16) Is there an Hg-1631 trip blank present?	☐	☐	☒
17) Is there a VOA trip blank present?	☐	☐	☒
18) Were all samples received within hold time?	☐	☒	☐

Some parameters were received past hold time.

Chain of Custody Related Remarks

The 'Relinquished By' field on the COC was not completed. The project manager is contacting the client.

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
-----	-----	-----	-----
UNKNOWN			

Was ice present in the shipment container(s)?

No - Wet or gel ice was not present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

Adrian Brown Consultants, Inc.

ACZ Project ID: L25803

Date Received: 07/31/2015 14:53

Received By: kmo

Date Printed: 8/3/2015

¹ The preservation of the following bottle types is not checked at sample receipt: Orange (oil and grease), Purple (total cyanide), Pink (dissolved cyanide), Brown (arsenic speciation), Sterile (fecal coliform), EDTA (sulfite), HCl preserved vial (organics), Na₂S₂O₃ preserved vial (organics), and HG-1631 (total/dissolved mercury by method 1631).

Relog L25803

ACZ

Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: JEFFREY WINICK

Company: SCHLUMBERGER WATER SERV.

E-mail: JWINICK@SLB.COM

Address: 1875 LAWRENCE STREET, SUITE 500

DENVER, CO 80215

Telephone: +1.303.244.8224

Copy of Report to:

Name: ADRIAN BROWN

Company: ADRIAN BROWN CONSULTANTS

E-mail: abrown@abch2o.com

Telephone: (303) 698-9080

Invoice to:

Name: ADRIAN BROWN

Company: ADRIAN BROWN CONSULTANTS

E-mail: lbrown@abch2o.com

Address: 130 W 4th Ave

Denver CO USA 80223

Telephone: (303) 698-9080

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses?

YES

NO

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO"

is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified.

Are samples for CO DW Compliance Monitoring?

YES

NO

If yes, please include state forms. Results will be reported to PQL.

PROJECT INFORMATION

ANALYSES REQUESTED (attach list or use quote number)

Quote #: CO HYDROGEOCHEMICAL STUDY

Project/PO #:

Reporting state for compliance testing:

Sampler's Name: Beverly Furfaro/ALS

Are any samples NRC licensable material? Yes No

SAMPLE IDENTIFICATION

DATE: TIME

Matrix

of Containers

CO-HYDROGEOCHEM
CO-HYDROGEOCHEM-
CHEM-PRE-HCT

GHC15-1/1700-1900/Static

19-June-15

rock

1(kg)

X

GHC15-1/1900-2100/Static

19-June-15

rock

1(kg)

X

GHC15-1/2100-2300/Static

19-June-15

rock

1(kg)

X

GHC15-1/2300-2500/Static

19-June-15

rock

1(kg)

X

GHC15-1/1700-2500/Kineti

19-June-15

rock

8(kg)

X

Matrix SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

Please contact Jeff Winick at 303.244.8224 for further instructions

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:

DATE: TIME

RECEIVED BY:

DATE: TIME

APL

6/15

1000



L25803 Chain of Custody

Relog C25803

ACZ

Laboratories, Inc. *C25050*

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493 *NPL 7-31-15*

CHAIN of CUSTODY

Report to:

Name: JEFFREY WINICK

Company: SCHLUMBERGER WATER SERV.

E-mail: JWINICK@SLB.COM

Address: 1875 LAWRENCE STREET, SUITE 500

DENVER, CO 80215

Telephone: +1.303.244.8224

Copy of Report to:

Name: ADRIAN BROWN

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E-mail: abrown@abch2o.com

Telephone: (303) 698-9080

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Company: ADRIAN BROWN CONSULTANTS

E-mail: lbrown@abch2o.com

Address: 130 W 4th Ave

Denver CO USA 80223

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If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses?

YES

NO

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO"

is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified.

Are samples for CO DW Compliance Monitoring?

YES

If yes, please include state forms. Results will be reported to PQL.

NO

X

PROJECT INFORMATION

ANALYSES REQUESTED (attach list or use quote number)

Quote #: CO HYDROGEOCHEMICAL STUDY

Project/PO #:

Reporting state for compliance testing:

Sampler's Name: Beverly Furfaro/ALS

Are any samples NRC licensable material? Yes No

SAMPLE IDENTIFICATION

DATE: TIME

Matrix

of Containers

CO-HYDROGEO-CHEM
CO-HYDROGEO-CHEM-PRE-HCT

GHC15-1/1700-1900/Static

19-June-15

rock

1(kg)

X

GHC15-1/1900-2100/Static

19-June-15

rock

1(kg)

X

GHC15-1/2100-2300/Static

19-June-15

rock

1(kg)

X

GHC15-1/2300-2500/Static

19-June-15

rock

1(kg)

X

GHC15-1/1700-2500/Kineti

19-June-15

rock

8(kg)

X

SX
NPL 7-31-15

Matrix SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

Please contact Jeff Winick at 303.244.8224 for further instructions

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:

DATE: TIME

RECEIVED BY:

DATE: TIME

NPL

6-21-15 1000

Relog 625803

ACZ

Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: JEFFREY WINICK
Company: SCHLUMBERGER WATER SERV.
E-mail: JWINICK@SLB.COM

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DENVER, CO 80215
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Denver CO USA 80223
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If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses?

YES
NO

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO"

is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified.

Are samples for CO DW Compliance Monitoring?

YES
NO

If yes, please include state forms. Results will be reported to PQL.

PROJECT INFORMATION

ANALYSES REQUESTED (attach list or use quote number)

Quote #: CO HYDROGEOCHEMICAL STUDY

Project/PO #:

Reporting state for compliance testing:

Sampler's Name: ALS Minerals/Jose Gonzalez

Are any samples NRC licensable material? Yes No

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	LO - HYDRO GEO	LO - HYDRO GEO CHEM	LO - HYDRO GEO CHEM - PRE - WAT														
GHC-15-1/100-300/Static C	15-June-15	rock	1(kg)	X																
GHC-15-1/300-500/Static C	15-June-15	rock	1(kg)	X																
GHC-15-1/500-700/Static C	15-June-15	rock	1(kg)	X																
GHC-15-1/700-900/Static C	15-June-15	rock	1(kg)	X																
GHC15-1/100-900/Kinetic C	15-June-15	rock	8(kg)			X														
GHC15-1/900-1100/Static C	15-June-15	rock	1(kg)	X																
GHC15-1/1100-1300/Static C	15-June-15	rock	1(kg)	X																
GHC15-1/1300-1500/Static C	15-June-15	rock	1(kg)	X																
GHC15-1/1500-1700/Static C	15-June-15	rock	1(kg)	X																
GHC15-1/900-1700/Kinetic C	15-June-15	rock	8(kg)			X														

Matrix SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

Please contact Jeff Winick at 303.244.8224 for further instructions

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
<i>Mark B. [Signature]</i>	6-23-15	<i>hpl</i>	6-24-15 0840

FRMAD050.01.15.09

White - Return with sample. Yellow - Retain for your records.

Re/03 L25803

ACZ

Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: JEFFREY WINICK

Company: SCHLUMBERGER WATER SERV.

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Company: ADRIAN BROWN CONSULTANTS

E-mail: lbrown@abch2o.com

Address: 130 W 4th Ave

Denver CO USA 80223

Telephone: (303) 698-9080

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses?

YES

NO

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO"

is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified.

Are samples for CO DW Compliance Monitoring?

YES

NO

If yes, please include state forms. Results will be reported to PQL.

PROJECT INFORMATION

ANALYSES REQUESTED (attach list or use quote number)

Quote #: CO HYDROGEOCHEMICAL STUDY

Project/PO #:

Reporting state for compliance testing:

Sampler's Name: Beverly Furfaro/ALS

Are any samples NRC licensable material? Yes No

SAMPLE IDENTIFICATION

DATE: TIME

Matrix

of Containers

CO-HYDROGEO
-CHEM

CO-HYDROGEO
-PRE-HEAT

GHC15-1/2500-2700/Static

29-June-15:

rock

1(kg)

X

GHC15-1/2700-2900/Static

29-June-15:

rock

1(kg)

GHC15-1/2900-3100/Static

29-June-15:

rock

1(kg)

GHC15-1/3100-3300/Static

29-June-15

rock

1(kg)

GHC15-1/2500-3300/Kinetic

29-June-15

rock

3(kg)

X

COPY

Matrix SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

Please contact Jeff Winick at 303.244.8224 for further instructions

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:

DATE: TIME

RECEIVED BY:

DATE: TIME

FRMAD050 04.15.09

White - Return with sample.

Yellow - Retain for your records.

L25803-1508201050

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Relog L25803

ACZ

Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5403

CHAIN of CUSTODY

Report to:

Name: JEFFREY WINICK

Company: SCHLUMBERGER WATER SERV.

E-mail: JWINICK@SLB.COM

Address: 1875 LAWRENCE STREET, SUITE 500

DENVER, CO 80215

Telephone: +1.303.244.8224

Copy of Report to:

Name: ADRIAN BROWN

Company: ADRIAN BROWN CONSULTANTS

E-mail: abrown@abch2o.com

Telephone: (303) 698-9080

Invoice to:

Name: ADRIAN BROWN

Company: ADRIAN BROWN CONSULTANTS

E-mail: lbrown@abch2o.com

Address: 130 W 4th Ave

Denver CO USA 80223

Telephone: (303) 698-9080

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses?

YES

NO

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO"

is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified.

Are samples for CO DW Compliance Monitoring?

YES

NO

If yes, please include state forms. Results will be reported to PQL.

PROJECT INFORMATION

ANALYSES REQUESTED (attach list or use quote number)

Quote #: CO HYDROGEOCHEMICAL STUDY

Project/PO #:

Reporting state for compliance testing:

Sampler's Name: Beverly Furfaro/ALS

Are any samples NRC licensable material? Yes No

of Containers

SAMPLE IDENTIFICATION

DATE:TIME

Matrix

GHC15-1/2500-2700/Static 29-June-15: rock 1(kg)

GHC15-1/2700-2900/Static 29-June-15: rock 1(kg)

GHC15-1/2900-3100/Static 29-June-15: rock 1(kg)

GHC15-1/3100-3300/Static 29-June-15: rock 1(kg)

GHC15-1/2500-3300/Kinetic 29-June-15: rock 8(kg)

Matrix SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

Please contact Jeff Winick at 303.244.8224 for further instructions

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:

DATE:TIME

RECEIVED BY:

DATE:TIME

FRMAD050.01.15.09

White - Return with sample. Yellow - Retain for your records.

L25803-1508201050

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September 15, 2015

Report to:

Jeffrey Winick
Schlumberger Water Services
1875 Lawrence Street
Suite 500
Denver, CO 80202

Bill to:

Accounts Payable
Adrian Brown Consultants, Inc.
130 W 4th Avenue
Denver, CO 80223

cc: Adrian Brown

Project ID:

ACZ Project ID: L26207

Jeffrey Winick:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on August 21, 2015. This project has been assigned to ACZ's project number, L26207. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L26207. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after October 15, 2015. If the samples are determined to be hazardous, additional charges apply for disposal (typically \$11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.



Scott Habermehl has reviewed
and approved this report.



Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/3300-3500/STATIC

ACZ Sample ID: **L26207-01**

Date Sampled: 07/08/15 00:00

Date Received: 08/21/15

Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1	0.05	B	*	mg/L	0.03	0.2	09/01/15 16:10	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0004	0.002	09/05/15 15:57	msh
Arsenic, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0002	0.001	09/05/15 15:57	msh
Barium, dissolved	M200.7 ICP	1	0.057		*	mg/L	0.003	0.02	09/01/15 16:10	jjc
Beryllium, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.00005	0.0003	09/08/15 21:00	scp
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	09/01/15 16:10	jjc
Boron, dissolved	M200.7 ICP	1	0.02	B	*	mg/L	0.01	0.05	09/01/15 16:10	jjc
Cadmium, dissolved	M200.8 ICP-MS	1	0.0002	B	*	mg/L	0.0001	0.0005	09/05/15 15:57	msh
Calcium, dissolved	M200.7 ICP	1	448		*	mg/L	0.1	0.5	09/01/15 16:10	jjc
Chromium, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	09/01/15 16:10	jjc
Cobalt, dissolved	M200.7 ICP	1	0.03	B	*	mg/L	0.01	0.05	09/01/15 16:10	jjc
Copper, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	09/01/15 16:10	jjc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/01/15 16:10	jjc
Iron, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.05	09/01/15 16:10	jjc
Lead, dissolved	M200.8 ICP-MS	1	0.0001	B	*	mg/L	0.0001	0.0005	09/05/15 15:57	msh
Lithium, dissolved	M200.7 ICP	1	0.020	B	*	mg/L	0.008	0.04	09/01/15 16:10	jjc
Magnesium, dissolved	M200.7 ICP	1	45.4		*	mg/L	0.2	1	09/01/15 16:10	jjc
Manganese, dissolved	M200.7 ICP	1	2.790		*	mg/L	0.005	0.03	09/01/15 16:10	jjc
Mercury, dissolved	M245.1 CVAA	1		UH	*	mg/L	0.0002	0.001	08/24/15 13:21	mfm
Molybdenum, dissolved	M200.7 ICP	1	0.13		*	mg/L	0.02	0.1	09/01/15 16:10	jjc
Nickel, dissolved	M200.7 ICP	1	0.012	B	*	mg/L	0.008	0.04	09/01/15 16:10	jjc
Potassium, dissolved	M200.7 ICP	1	11.3		*	mg/L	0.2	1	09/01/15 16:10	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/01/15 16:10	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0110		*	mg/L	0.0001	0.0003	09/05/15 15:57	msh
Silver, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.03	09/01/15 16:10	jjc
Sodium, dissolved	M200.7 ICP	1	3.9		*	mg/L	0.2	1	09/01/15 16:10	jjc
Strontium, dissolved	M200.7 ICP	1	6.100		*	mg/L	0.005	0.03	09/01/15 16:10	jjc
Sulfur, dissolved	M200.7 ICP	1	413		*	mg/L	0.3	1	09/01/15 16:10	jjc
Thallium, dissolved	M200.8 ICP-MS	1	0.0002	B	*	mg/L	0.0001	0.0005	09/05/15 15:57	msh
Tin, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	09/01/15 16:10	jjc
Titanium, dissolved	M200.7 ICP	1	0.006	B	*	mg/L	0.005	0.03	09/01/15 16:10	jjc
Vanadium, dissolved	M200.7 ICP	1	0.013	B	*	mg/L	0.005	0.03	09/01/15 16:10	jjc
Zinc, dissolved	M200.7 ICP	1	0.03	B	*	mg/L	0.01	0.05	09/01/15 16:10	jjc

Note: This report is for additional analysis of the sample previously reported as ACZ project L25367-01

Arizona license number: AZ0102

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/3500-3700/STATIC

ACZ Sample ID: **L26207-02**

Date Sampled: 07/08/15 00:00

Date Received: 08/21/15

Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1	4.25		*	mg/L	0.03	0.2	09/01/15 16:19	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0004	0.002	09/05/15 16:00	msh
Arsenic, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0002	0.001	09/05/15 16:00	msh
Barium, dissolved	M200.7 ICP	1	0.036		*	mg/L	0.003	0.02	09/01/15 16:19	jjc
Beryllium, dissolved	M200.8 ICP-MS	1	0.00376		*	mg/L	0.00005	0.0003	09/05/15 16:00	msh
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	09/01/15 16:19	jjc
Boron, dissolved	M200.7 ICP	1	0.02	B	*	mg/L	0.01	0.05	09/01/15 16:19	jjc
Cadmium, dissolved	M200.8 ICP-MS	1	0.0074		*	mg/L	0.0001	0.0005	09/05/15 16:00	msh
Calcium, dissolved	M200.7 ICP	1	524		*	mg/L	0.1	0.5	09/01/15 16:19	jjc
Chromium, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	09/01/15 16:19	jjc
Cobalt, dissolved	M200.7 ICP	1	0.08		*	mg/L	0.01	0.05	09/01/15 16:19	jjc
Copper, dissolved	M200.7 ICP	1	0.18		*	mg/L	0.01	0.05	09/01/15 16:19	jjc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/01/15 16:19	jjc
Iron, dissolved	M200.7 ICP	1		U	*	mg/L	0.02	0.05	09/01/15 16:19	jjc
Lead, dissolved	M200.8 ICP-MS	1	0.0186		*	mg/L	0.0001	0.0005	09/05/15 16:00	msh
Lithium, dissolved	M200.7 ICP	1	0.020	B	*	mg/L	0.008	0.04	09/01/15 16:19	jjc
Magnesium, dissolved	M200.7 ICP	1	59.7		*	mg/L	0.2	1	09/01/15 16:19	jjc
Manganese, dissolved	M200.7 ICP	1	14.100		*	mg/L	0.005	0.03	09/01/15 16:19	jjc
Mercury, dissolved	M245.1 CVAA	1		UH	*	mg/L	0.0002	0.001	08/24/15 13:23	mfm
Molybdenum, dissolved	M200.7 ICP	1	0.27		*	mg/L	0.02	0.1	09/01/15 16:19	jjc
Nickel, dissolved	M200.7 ICP	1	0.056		*	mg/L	0.008	0.04	09/01/15 16:19	jjc
Potassium, dissolved	M200.7 ICP	1	8.7		*	mg/L	0.2	1	09/01/15 16:19	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/01/15 16:19	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0117		*	mg/L	0.0001	0.0003	09/05/15 16:00	msh
Silver, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.03	09/01/15 16:19	jjc
Sodium, dissolved	M200.7 ICP	1	3.4		*	mg/L	0.2	1	09/01/15 16:19	jjc
Strontium, dissolved	M200.7 ICP	1	7.230		*	mg/L	0.005	0.03	09/01/15 16:19	jjc
Sulfur, dissolved	M200.7 ICP	2	513		*	mg/L	0.5	3	09/02/15 14:11	jjc
Thallium, dissolved	M200.8 ICP-MS	1	0.0003	B	*	mg/L	0.0001	0.0005	09/05/15 16:00	msh
Tin, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	09/01/15 16:19	jjc
Titanium, dissolved	M200.7 ICP	1	0.005	B	*	mg/L	0.005	0.03	09/01/15 16:19	jjc
Vanadium, dissolved	M200.7 ICP	1	0.168		*	mg/L	0.005	0.03	09/01/15 16:19	jjc
Zinc, dissolved	M200.7 ICP	1	1.28		*	mg/L	0.01	0.05	09/01/15 16:19	jjc

Note: This report is for additional analysis of the sample previously reported as ACZ project L25367-02

Arizona license number: AZ0102

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/3700-3874/STATIC

ACZ Sample ID: **L26207-03**

Date Sampled: 07/08/15 00:00

Date Received: 08/21/15

Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1	5.74		*	mg/L	0.03	0.2	09/01/15 16:23	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0004	0.002	09/05/15 16:02	msh
Arsenic, dissolved	M200.8 ICP-MS	2		U	*	mg/L	0.0004	0.002	09/11/15 13:04	mfm
Barium, dissolved	M200.7 ICP	1	0.028		*	mg/L	0.003	0.02	09/01/15 16:23	jjc
Beryllium, dissolved	M200.8 ICP-MS	1	0.00395		*	mg/L	0.00005	0.0003	09/05/15 16:02	msh
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	09/01/15 16:23	jjc
Boron, dissolved	M200.7 ICP	1	0.03	B	*	mg/L	0.01	0.05	09/01/15 16:23	jjc
Cadmium, dissolved	M200.8 ICP-MS	1	0.0054		*	mg/L	0.0001	0.0005	09/05/15 16:02	msh
Calcium, dissolved	M200.7 ICP	1	527		*	mg/L	0.1	0.5	09/01/15 16:23	jjc
Chromium, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	09/01/15 16:23	jjc
Cobalt, dissolved	M200.7 ICP	1	0.07		*	mg/L	0.01	0.05	09/01/15 16:23	jjc
Copper, dissolved	M200.7 ICP	1	0.34		*	mg/L	0.01	0.05	09/01/15 16:23	jjc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/01/15 16:23	jjc
Iron, dissolved	M200.7 ICP	1	6.55		*	mg/L	0.02	0.05	09/01/15 16:23	jjc
Lead, dissolved	M200.8 ICP-MS	1	0.4784		*	mg/L	0.0001	0.0005	09/05/15 16:02	msh
Lithium, dissolved	M200.7 ICP	1	0.017	B	*	mg/L	0.008	0.04	09/01/15 16:23	jjc
Magnesium, dissolved	M200.7 ICP	1	64.2		*	mg/L	0.2	1	09/01/15 16:23	jjc
Manganese, dissolved	M200.7 ICP	1	9.470		*	mg/L	0.005	0.03	09/01/15 16:23	jjc
Mercury, dissolved	M245.1 CVAA	1		UH	*	mg/L	0.0002	0.001	08/24/15 13:26	mfm
Molybdenum, dissolved	M200.7 ICP	1	0.28		*	mg/L	0.02	0.1	09/01/15 16:23	jjc
Nickel, dissolved	M200.7 ICP	1	0.058		*	mg/L	0.008	0.04	09/01/15 16:23	jjc
Potassium, dissolved	M200.7 ICP	1	6.1		*	mg/L	0.2	1	09/01/15 16:23	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/01/15 16:23	jjc
Selenium, dissolved	M200.8 ICP-MS	2	0.0135		*	mg/L	0.0002	0.0005	09/11/15 13:04	mfm
Silver, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.03	09/01/15 16:23	jjc
Sodium, dissolved	M200.7 ICP	1	2.8		*	mg/L	0.2	1	09/01/15 16:23	jjc
Strontium, dissolved	M200.7 ICP	1	6.340		*	mg/L	0.005	0.03	09/01/15 16:23	jjc
Sulfur, dissolved	M200.7 ICP	2	562		*	mg/L	0.5	3	09/02/15 14:14	jjc
Thallium, dissolved	M200.8 ICP-MS	1	0.0003	B	*	mg/L	0.0001	0.0005	09/05/15 16:02	msh
Tin, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	09/01/15 16:23	jjc
Titanium, dissolved	M200.7 ICP	1	0.027	B	*	mg/L	0.005	0.03	09/01/15 16:23	jjc
Vanadium, dissolved	M200.7 ICP	1	0.313		*	mg/L	0.005	0.03	09/01/15 16:23	jjc
Zinc, dissolved	M200.7 ICP	1	0.94		*	mg/L	0.01	0.05	09/01/15 16:23	jjc

Note: This report is for additional analysis of the sample previously reported as ACZ project L25367-03

Arizona license number: AZ0102

Adrian Brown Consultants, Inc.

Project ID:

Sample ID: GHC15-1/3300-3874/KINETIC

ACZ Sample ID: **L26207-04**

Date Sampled: 07/08/15 00:00

Date Received: 08/21/15

Sample Matrix: *Leachate*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	1	4.10		*	mg/L	0.03	0.2	09/01/15 16:26	jjc
Antimony, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0004	0.002	09/05/15 16:09	msh
Arsenic, dissolved	M200.8 ICP-MS	1		U	*	mg/L	0.0002	0.001	09/05/15 16:09	msh
Barium, dissolved	M200.7 ICP	1	0.052		*	mg/L	0.003	0.02	09/01/15 16:26	jjc
Beryllium, dissolved	M200.8 ICP-MS	1	0.00376		*	mg/L	0.00005	0.0003	09/05/15 16:09	msh
Bismuth, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	09/01/15 16:26	jjc
Boron, dissolved	M200.7 ICP	1	0.02	B	*	mg/L	0.01	0.05	09/01/15 16:26	jjc
Cadmium, dissolved	M200.8 ICP-MS	1	0.0041		*	mg/L	0.0001	0.0005	09/05/15 16:09	msh
Calcium, dissolved	M200.7 ICP	1	332		*	mg/L	0.1	0.5	09/01/15 16:26	jjc
Chromium, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.05	09/01/15 16:26	jjc
Cobalt, dissolved	M200.7 ICP	1	0.13		*	mg/L	0.01	0.05	09/01/15 16:26	jjc
Copper, dissolved	M200.7 ICP	1	0.27		*	mg/L	0.01	0.05	09/01/15 16:26	jjc
Gallium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/01/15 16:26	jjc
Iron, dissolved	M200.7 ICP	1	2.30		*	mg/L	0.02	0.05	09/01/15 16:26	jjc
Lead, dissolved	M200.8 ICP-MS	1	0.1530		*	mg/L	0.0001	0.0005	09/05/15 16:09	msh
Lithium, dissolved	M200.7 ICP	1	0.018	B	*	mg/L	0.008	0.04	09/01/15 16:26	jjc
Magnesium, dissolved	M200.7 ICP	1	48.2		*	mg/L	0.2	1	09/01/15 16:26	jjc
Manganese, dissolved	M200.7 ICP	1	9.960		*	mg/L	0.005	0.03	09/01/15 16:26	jjc
Mercury, dissolved	M245.1 CVAA	1		UH	*	mg/L	0.0002	0.001	08/24/15 13:28	mfm
Molybdenum, dissolved	M200.7 ICP	1	0.25		*	mg/L	0.02	0.1	09/01/15 16:26	jjc
Nickel, dissolved	M200.7 ICP	1	0.050		*	mg/L	0.008	0.04	09/01/15 16:26	jjc
Potassium, dissolved	M200.7 ICP	1	6.8		*	mg/L	0.2	1	09/01/15 16:26	jjc
Scandium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	09/01/15 16:26	jjc
Selenium, dissolved	M200.8 ICP-MS	1	0.0085		*	mg/L	0.0001	0.0003	09/05/15 16:09	msh
Silver, dissolved	M200.7 ICP	1		U	*	mg/L	0.01	0.03	09/01/15 16:26	jjc
Sodium, dissolved	M200.7 ICP	1	2.4		*	mg/L	0.2	1	09/01/15 16:26	jjc
Strontium, dissolved	M200.7 ICP	1	4.430		*	mg/L	0.005	0.03	09/01/15 16:26	jjc
Sulfur, dissolved	M200.7 ICP	1	354		*	mg/L	0.3	1	09/01/15 16:26	jjc
Thallium, dissolved	M200.8 ICP-MS	1	0.0004	B	*	mg/L	0.0001	0.0005	09/05/15 16:09	msh
Tin, dissolved	M200.7 ICP	1		U	*	mg/L	0.04	0.2	09/01/15 16:26	jjc
Titanium, dissolved	M200.7 ICP	1	0.066		*	mg/L	0.005	0.03	09/01/15 16:26	jjc
Vanadium, dissolved	M200.7 ICP	1	0.203		*	mg/L	0.005	0.03	09/01/15 16:26	jjc
Zinc, dissolved	M200.7 ICP	1	0.75		*	mg/L	0.01	0.05	09/01/15 16:26	jjc

Note: This report is for additional analysis of the sample previously reported as ACZ project L25368-01

Arizona license number: AZ0102



Report Header Explanations

<i>Batch</i>	A distinct set of samples analyzed at a specific time
<i>Found</i>	Value of the QC Type of interest
<i>Limit</i>	Upper limit for RPD, in %.
<i>Lower</i>	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
<i>MDL</i>	Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #5). Allows for instrument and annual fluctuations.
<i>PCN/SCN</i>	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
<i>PQL</i>	Practical Quantitation Limit. Synonymous with the EPA term "minimum level".
<i>QC</i>	True Value of the Control Sample or the amount added to the Spike
<i>Rec</i>	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
<i>RPD</i>	Relative Percent Difference, calculation used for Duplicate QC Types
<i>Upper</i>	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
<i>Sample</i>	Value of the Sample of interest

QC Sample Types

<i>AS</i>	Analytical Spike (Post Digestion)	<i>LCSWD</i>	Laboratory Control Sample - Water Duplicate
<i>ASD</i>	Analytical Spike (Post Digestion) Duplicate	<i>LFB</i>	Laboratory Fortified Blank
<i>CCB</i>	Continuing Calibration Blank	<i>LFM</i>	Laboratory Fortified Matrix
<i>CCV</i>	Continuing Calibration Verification standard	<i>LFMD</i>	Laboratory Fortified Matrix Duplicate
<i>DUP</i>	Sample Duplicate	<i>LRB</i>	Laboratory Reagent Blank
<i>ICB</i>	Initial Calibration Blank	<i>MS</i>	Matrix Spike
<i>ICV</i>	Initial Calibration Verification standard	<i>MSD</i>	Matrix Spike Duplicate
<i>ICSAB</i>	Inter-element Correction Standard - A plus B solutions	<i>PBS</i>	Prep Blank - Soil
<i>LCSS</i>	Laboratory Control Sample - Soil	<i>PBW</i>	Prep Blank - Water
<i>LCSSD</i>	Laboratory Control Sample - Soil Duplicate	<i>PQV</i>	Practical Quantitation Verification standard
<i>LCSW</i>	Laboratory Control Sample - Water	<i>SDL</i>	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3)	EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste.
(5)	Standard Methods for the Examination of Water and Wastewater.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3)	Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5)	If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click:

<http://www.acz.com/public/extquallist.pdf>

Adrian Brown Consultants, Inc.

ACZ Project ID: **L26207**

Aluminum, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG389624													
WG389624ICV	ICV	09/01/15 15:24	II150811-1	2		1.984	mg/L	99	95	105			
WG389624ICB	ICB	09/01/15 15:30				U	mg/L		-0.09	0.09			
WG389624LFB	LFB	09/01/15 15:42	II150828-2	1.0015		1.053	mg/L	105	85	115			
L26086-02AS	AS	09/01/15 16:04	II150828-2	1.0015	U	1.06	mg/L	106	85	115			
L26086-02ASD	ASD	09/01/15 16:07	II150828-2	1.0015	U	1.052	mg/L	105	85	115	1	20	

Antimony, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG389824													
WG389824ICV	ICV	09/05/15 15:50	MS150902-7	.02		.01872	mg/L	94	90	110			
WG389824ICB	ICB	09/05/15 15:53				U	mg/L		-0.0012	0.0012			
WG389824LFB	LFB	09/05/15 15:55	MS150827-2	.01001		.0098	mg/L	98	85	115			
L26207-03AS	AS	09/05/15 16:04	MS150827-2	.01001	U	.00989	mg/L	99	70	130			
L26207-03ASD	ASD	09/05/15 16:07	MS150827-2	.01001	U	.01008	mg/L	101	70	130	2	20	

Arsenic, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG389824													
WG389824ICV	ICV	09/05/15 15:50	MS150902-7	.05		.05307	mg/L	106	90	110			
WG389824ICB	ICB	09/05/15 15:53				U	mg/L		-0.0006	0.0006			
WG389824LFB	LFB	09/05/15 15:55	MS150827-2	.0501		.05176	mg/L	103	85	115			
L26207-03AS	AS	09/05/15 16:04	MS150827-2	.0501	.0003	.04259	mg/L	84	70	130			
L26207-03ASD	ASD	09/05/15 16:07	MS150827-2	.0501	.0003	.04358	mg/L	86	70	130	2	20	

WG390221

WG390221ICV	ICV	09/11/15 11:40	MS150902-7	.05		.05422	mg/L	108	90	110			
WG390221ICB	ICB	09/11/15 11:43				U	mg/L		-0.0006	0.0006			
WG390221LFB	LFB	09/11/15 11:46	MS150827-2	.0501		.05349	mg/L	107	85	115			
L25102-11AS	AS	09/11/15 12:43	MS150827-2	.0501	U	.05646	mg/L	113	70	130			
L25102-11ASD	ASD	09/11/15 12:46	MS150827-2	.0501	U	.05599	mg/L	112	70	130	1	20	

Barium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG389624													
WG389624ICV	ICV	09/01/15 15:24	II150811-1	2		1.9988	mg/L	100	95	105			
WG389624ICB	ICB	09/01/15 15:30				U	mg/L		-0.009	0.009			
WG389624LFB	LFB	09/01/15 15:42	II150828-2	.5		.4993	mg/L	100	85	115			
L26086-02AS	AS	09/01/15 16:04	II150828-2	.5	.089	.583	mg/L	99	85	115			
L26086-02ASD	ASD	09/01/15 16:07	II150828-2	.5	.089	.58	mg/L	98	85	115	1	20	

Adrian Brown Consultants, Inc.

ACZ Project ID: **L26207**

Beryllium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG389824													
WG389824ICV	ICV	09/05/15 15:50	MS150902-7	.05		.050421	mg/L	101	90	110			
WG389824ICB	ICB	09/05/15 15:53				.000169	mg/L		-0.00015	0.00015			BB
WG389824LFB	LFB	09/05/15 15:55	MS150827-2	.0501		.051518	mg/L	103	85	115			
L26207-03AS	AS	09/05/15 16:04	MS150827-2	.0501	.00395	.053722	mg/L	99	70	130			
L26207-03ASD	ASD	09/05/15 16:07	MS150827-2	.0501	.00395	.055173	mg/L	102	70	130	3	20	
WG390000													
WG390000ICV	ICV	09/08/15 20:48	MS150902-7	.05		.05011	mg/L	100	90	110			
WG390000ICB	ICB	09/08/15 20:51				U	mg/L		-0.00015	0.00015			
WG390000LFB	LFB	09/08/15 20:54	MS150827-2	.0501		.04815	mg/L	96	85	115			
L26228-03AS	AS	09/08/15 21:12	MS150827-2	.0501	U	.04888	mg/L	98	70	130			
L26228-03ASD	ASD	09/08/15 21:15	MS150827-2	.0501	U	.04875	mg/L	97	70	130	0	20	

Bismuth, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG389624													
WG389624ICV	ICV	09/01/15 15:24	II150811-1	2		2.011	mg/L	101	95	105			
WG389624ICB	ICB	09/01/15 15:30				U	mg/L		-0.12	0.12			
WG389624LFB	LFB	09/01/15 15:42	II150828-2	1		1.008	mg/L	101	85	115			
L26086-02AS	AS	09/01/15 16:04	II150828-2	1	U	1.037	mg/L	104	85	115			
L26086-02ASD	ASD	09/01/15 16:07	II150828-2	1	U	.989	mg/L	99	85	115	5	20	

Boron, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG389624													
WG389624ICV	ICV	09/01/15 15:24	II150811-1	2		1.989	mg/L	99	95	105			
WG389624ICB	ICB	09/01/15 15:30				U	mg/L		-0.03	0.03			
WG389624LFB	LFB	09/01/15 15:42	II150828-2	.5005		.506	mg/L	101	85	115			
L26086-02AS	AS	09/01/15 16:04	II150828-2	.5005	.06	.543	mg/L	97	85	115			
L26086-02ASD	ASD	09/01/15 16:07	II150828-2	.5005	.06	.562	mg/L	100	85	115	3	20	

Cadmium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG389824													
WG389824ICV	ICV	09/05/15 15:50	MS150902-7	.05		.05116	mg/L	102	90	110			
WG389824ICB	ICB	09/05/15 15:53				U	mg/L		-0.0003	0.0003			
WG389824LFB	LFB	09/05/15 15:55	MS150827-2	.05005		.04972	mg/L	99	85	115			
L26207-03AS	AS	09/05/15 16:04	MS150827-2	.05005	.0054	.05343	mg/L	96	70	130			
L26207-03ASD	ASD	09/05/15 16:07	MS150827-2	.05005	.0054	.05424	mg/L	98	70	130	2	20	

Calcium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG389624													
WG389624ICV	ICV	09/01/15 15:24	II150811-1	100		100.16	mg/L	100	95	105			
WG389624ICB	ICB	09/01/15 15:30				U	mg/L		-0.3	0.3			
WG389624LFB	LFB	09/01/15 15:42	II150828-2	68.01261		69.56	mg/L	102	85	115			
L26086-02AS	AS	09/01/15 16:04	II150828-2	68.01261	42.6	111.1	mg/L	101	85	115			
L26086-02ASD	ASD	09/01/15 16:07	II150828-2	68.01261	42.6	111	mg/L	101	85	115	0	20	

Adrian Brown Consultants, Inc.

ACZ Project ID: **L26207**

Chromium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG389624													
WG389624ICV	ICV	09/01/15 15:24	II150811-1	2		1.962	mg/L	98	95	105			
WG389624ICB	ICB	09/01/15 15:30				U	mg/L		-0.03	0.03			
WG389624LFB	LFB	09/01/15 15:42	II150828-2	.5005		.489	mg/L	98	85	115			
L26086-02AS	AS	09/01/15 16:04	II150828-2	.5005	U	.481	mg/L	96	85	115			
L26086-02ASD	ASD	09/01/15 16:07	II150828-2	.5005	U	.482	mg/L	96	85	115	0	20	

Cobalt, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG389624													
WG389624ICV	ICV	09/01/15 15:24	II150811-1	2.002		1.908	mg/L	95	95	105			
WG389624ICB	ICB	09/01/15 15:30				U	mg/L		-0.03	0.03			
WG389624LFB	LFB	09/01/15 15:42	II150828-2	.5005		.495	mg/L	99	85	115			
L26086-02AS	AS	09/01/15 16:04	II150828-2	.5005	U	.49	mg/L	98	85	115			
L26086-02ASD	ASD	09/01/15 16:07	II150828-2	.5005	U	.488	mg/L	98	85	115	0	20	

Copper, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG389624													
WG389624ICV	ICV	09/01/15 15:24	II150811-1	2		1.983	mg/L	99	95	105			
WG389624ICB	ICB	09/01/15 15:30				U	mg/L		-0.03	0.03			
WG389624LFB	LFB	09/01/15 15:42	II150828-2	.499		.49	mg/L	98	85	115			
L26086-02AS	AS	09/01/15 16:04	II150828-2	.499	U	.489	mg/L	98	85	115			
L26086-02ASD	ASD	09/01/15 16:07	II150828-2	.499	U	.492	mg/L	99	85	115	1	20	

Gallium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG389624													
WG389624ICV	ICV	09/01/15 15:24	II150811-1	2		2.06	mg/L	103	95	105			
WG389624ICB	ICB	09/01/15 15:30				U	mg/L		-0.3	0.3			
WG389624LFB	LFB	09/01/15 15:42	II150828-2	1		1.02	mg/L	102	85	115			
L26086-02AS	AS	09/01/15 16:04	II150828-2	1	U	1.02	mg/L	102	85	115			
L26086-02ASD	ASD	09/01/15 16:07	II150828-2	1	U	1.02	mg/L	102	85	115	0	20	

Iron, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG389624													
WG389624ICV	ICV	09/01/15 15:24	II150811-1	2		1.977	mg/L	99	95	105			
WG389624ICB	ICB	09/01/15 15:30				U	mg/L		-0.06	0.06			
WG389624LFB	LFB	09/01/15 15:42	II150828-2	1.0001		1.01	mg/L	101	85	115			
L26086-02AS	AS	09/01/15 16:04	II150828-2	1.0001	U	1.007	mg/L	101	85	115			
L26086-02ASD	ASD	09/01/15 16:07	II150828-2	1.0001	U	1.005	mg/L	100	85	115	0	20	

Adrian Brown Consultants, Inc.

ACZ Project ID: **L26207**

Lead, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG389824													
WG389824ICV	ICV	09/05/15 15:50	MS150902-7	.05		.05199	mg/L	104	90	110			
WG389824ICB	ICB	09/05/15 15:53				U	mg/L		-0.0003	0.0003			
WG389824LFB	LFB	09/05/15 15:55	MS150827-2	.05005		.04998	mg/L	100	85	115			
L26207-03AS	AS	09/05/15 16:04	MS150827-2	.05005	.4784	.52001	mg/L	83	70	130			
L26207-03ASD	ASD	09/05/15 16:07	MS150827-2	.05005	.4784	.52237	mg/L	88	70	130	0	20	

Lithium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG389624													
WG389624ICV	ICV	09/01/15 15:24	II150811-1	2		2.0213	mg/L	101	95	105			
WG389624ICB	ICB	09/01/15 15:30				U	mg/L		-0.024	0.024			
WG389624LFB	LFB	09/01/15 15:42	II150828-2	1.001		.9892	mg/L	99	85	115			
L26086-02AS	AS	09/01/15 16:04	II150828-2	1.001	.023	1.004	mg/L	98	85	115			
L26086-02ASD	ASD	09/01/15 16:07	II150828-2	1.001	.023	1.007	mg/L	98	85	115	0	20	

Magnesium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG389624													
WG389624ICV	ICV	09/01/15 15:24	II150811-1	100		97.94	mg/L	98	95	105			
WG389624ICB	ICB	09/01/15 15:30				.23	mg/L		-0.6	0.6			
WG389624LFB	LFB	09/01/15 15:42	II150828-2	50.00416		48.5	mg/L	97	85	115			
L26086-02AS	AS	09/01/15 16:04	II150828-2	50.00416	49.7	97.5	mg/L	96	85	115			
L26086-02ASD	ASD	09/01/15 16:07	II150828-2	50.00416	49.7	97.65	mg/L	96	85	115	0	20	

Manganese, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG389624													
WG389624ICV	ICV	09/01/15 15:24	II150811-1	2		1.971	mg/L	99	95	105			
WG389624ICB	ICB	09/01/15 15:30				U	mg/L		-0.015	0.015			
WG389624LFB	LFB	09/01/15 15:42	II150828-2	.499		.4965	mg/L	99	85	115			
L26086-02AS	AS	09/01/15 16:04	II150828-2	.499	.009	.5003	mg/L	98	85	115			
L26086-02ASD	ASD	09/01/15 16:07	II150828-2	.499	.009	.5008	mg/L	99	85	115	0	20	

Mercury, dissolved

M245.1 CVAA

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG389062													
WG389062ICV	ICV	08/24/15 11:10	II150730-1	.005		.00489	mg/L	98	90	110			
WG389062ICB	ICB	08/24/15 11:12				U	mg/L		-0.0006	0.0006			
WG389063													
WG389063LRB	LRB	08/24/15 12:26				U	mg/L		-0.00044	0.00044			
WG389063LFB	LFB	08/24/15 12:28	II150813-2	.002004		.00179	mg/L	89	85	115			
L26132-04LFM	LFM	08/24/15 13:09	II150813-2	.002004	U	.00168	mg/L	84	85	115			M2
L26132-04LFMD	LFMD	08/24/15 13:11	II150813-2	.002004	U	.00161	mg/L	80	85	115	4	20	M2

Adrian Brown Consultants, Inc.

ACZ Project ID: **L26207**

Molybdenum, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG389624													
WG389624ICV	ICV	09/01/15 15:24	II150811-1	2		2.017	mg/L	101	95	105			
WG389624ICB	ICB	09/01/15 15:30				U	mg/L		-0.06	0.06			
WG389624LFB	LFB	09/01/15 15:42	II150828-2	.4995		.52	mg/L	104	85	115			
L26086-02AS	AS	09/01/15 16:04	II150828-2	.4995	U	.52	mg/L	104	85	115			
L26086-02ASD	ASD	09/01/15 16:07	II150828-2	.4995	U	.511	mg/L	102	85	115	2	20	

Nickel, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG389624													
WG389624ICV	ICV	09/01/15 15:24	II150811-1	2		1.9578	mg/L	98	95	105			
WG389624ICB	ICB	09/01/15 15:30				U	mg/L		-0.024	0.024			
WG389624LFB	LFB	09/01/15 15:42	II150828-2	.501		.4957	mg/L	99	85	115			
L26086-02AS	AS	09/01/15 16:04	II150828-2	.501	U	.4897	mg/L	98	85	115			
L26086-02ASD	ASD	09/01/15 16:07	II150828-2	.501	U	.4826	mg/L	96	85	115	1	20	

Potassium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG389624													
WG389624ICV	ICV	09/01/15 15:24	II150811-1	20		19.42	mg/L	97	95	105			
WG389624ICB	ICB	09/01/15 15:30				U	mg/L		-0.6	0.6			
WG389624LFB	LFB	09/01/15 15:42	II150828-2	100.0125		95.56	mg/L	96	85	115			
L26086-02AS	AS	09/01/15 16:04	II150828-2	100.0125	16.2	111.4	mg/L	95	85	115			
L26086-02ASD	ASD	09/01/15 16:07	II150828-2	100.0125	16.2	111.5	mg/L	95	85	115	0	20	

Scandium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG389624													
WG389624ICV	ICV	09/01/15 15:24	II150811-1	2		2	mg/L	100	95	105			
WG389624ICB	ICB	09/01/15 15:30				U	mg/L		-0.3	0.3			
WG389624LFB	LFB	09/01/15 15:42	II150828-2	.999		1	mg/L	100	85	115			
L26086-02AS	AS	09/01/15 16:04	II150828-2	.999	U	1	mg/L	100	85	115			
L26086-02ASD	ASD	09/01/15 16:07	II150828-2	.999	U	1	mg/L	100	85	115	0	20	

Selenium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG389824													
WG389824ICV	ICV	09/05/15 15:50	MS150902-7	.05		.05142	mg/L	103	90	110			
WG389824ICB	ICB	09/05/15 15:53				.00015	mg/L		-0.0003	0.0003			
WG389824LFB	LFB	09/05/15 15:55	MS150827-2	.05015		.04978	mg/L	99	85	115			
L26207-03AS	AS	09/05/15 16:04	MS150827-2	.05015	.0113	.05695	mg/L	91	70	130			
L26207-03ASD	ASD	09/05/15 16:07	MS150827-2	.05015	.0113	.05627	mg/L	90	70	130	1	20	

WG390221

WG390221ICV	ICV	09/11/15 11:40	MS150902-7	.05		.05071	mg/L	101	90	110			
WG390221ICB	ICB	09/11/15 11:43				.00014	mg/L		-0.0003	0.0003			
WG390221LFB	LFB	09/11/15 11:46	MS150827-2	.05015		.05002	mg/L	100	85	115			
L25102-11AS	AS	09/11/15 12:43	MS150827-2	.05015	.0004	.05819	mg/L	115	70	130			
L25102-11ASD	ASD	09/11/15 12:46	MS150827-2	.05015	.0004	.05596	mg/L	111	70	130	4	20	

Adrian Brown Consultants, Inc.

ACZ Project ID: **L26207**

Silver, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG389624													
WG389624ICV	ICV	09/01/15 15:24	II150811-1	1.001		.976	mg/L	98	95	105			
WG389624ICB	ICB	09/01/15 15:30				U	mg/L		-0.03	0.03			
WG389624LFB	LFB	09/01/15 15:42	II150828-2	.502		.477	mg/L	95	85	115			
L26086-02AS	AS	09/01/15 16:04	II150828-2	.502	U	.404	mg/L	80	85	115			M2 ZA
L26086-02ASD	ASD	09/01/15 16:07	II150828-2	.502	U	.395	mg/L	79	85	115	2	20	M2 ZA

Sodium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG389624													
WG389624ICV	ICV	09/01/15 15:24	II150811-1	100		97.17	mg/L	97	95	105			
WG389624ICB	ICB	09/01/15 15:30				U	mg/L		-0.6	0.6			
WG389624LFB	LFB	09/01/15 15:42	II150828-2	100.0581		96.23	mg/L	96	85	115			
L26086-02AS	AS	09/01/15 16:04	II150828-2	100.0581	50.8	145.7	mg/L	95	85	115			
L26086-02ASD	ASD	09/01/15 16:07	II150828-2	100.0581	50.8	144.8	mg/L	94	85	115	1	20	

Strontium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG389624													
WG389624ICV	ICV	09/01/15 15:24	II150811-1	2		1.9865	mg/L	99	95	105			
WG389624ICB	ICB	09/01/15 15:30				U	mg/L		-0.015	0.015			
WG389624LFB	LFB	09/01/15 15:42	II150828-2	.5005		.5066	mg/L	101	85	115			
L26086-02AS	AS	09/01/15 16:04	II150828-2	.5005	1	1.467	mg/L	93	85	115			
L26086-02ASD	ASD	09/01/15 16:07	II150828-2	.5005	1	1.465	mg/L	93	85	115	0	20	

Sulfur, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG389624													
WG389624ICV	ICV	09/01/15 15:24	II150811-1	49.97		50.06	mg/L	100	95	105			
WG389624ICB	ICB	09/01/15 15:30				U	mg/L		-0.9	0.9			
WG389624LFB	LFB	09/01/15 15:42	II150828-2	5.02		4.99	mg/L	99	85	115			
L26086-02AS	AS	09/01/15 16:04	II150828-2	5.02	22.2	26.57	mg/L	87	85	115			
L26086-02ASD	ASD	09/01/15 16:07	II150828-2	5.02	22.2	26.58	mg/L	87	85	115	0	20	

WG389702

WG389702ICV	ICV	09/02/15 13:46	II150811-1	49.97		49.96	mg/L	100	95	105			
WG389702ICB	ICB	09/02/15 13:52				U	mg/L		-0.9	0.9			
WG389702LFB	LFB	09/02/15 14:04	II150901-3	5.02		5.12	mg/L	102	85	115			
L26257-05AS	AS	09/02/15 14:23	II150901-3	5.02	19.8	24.58	mg/L	95	85	115			
L26257-05ASD	ASD	09/02/15 14:26	II150901-3	5.02	19.8	24.04	mg/L	84	85	115	2	20	M3

Thallium, dissolved

M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG389824													
WG389824ICV	ICV	09/05/15 15:50	MS150902-7	.05		.05291	mg/L	106	90	110			
WG389824ICB	ICB	09/05/15 15:53				U	mg/L		-0.0003	0.0003			
WG389824LFB	LFB	09/05/15 15:55	MS150827-2	.0501		.05029	mg/L	100	85	115			
L26207-03AS	AS	09/05/15 16:04	MS150827-2	.0501	.0003	.05045	mg/L	100	70	130			
L26207-03ASD	ASD	09/05/15 16:07	MS150827-2	.0501	.0003	.05096	mg/L	101	70	130	1	20	

Adrian Brown Consultants, Inc.

ACZ Project ID: **L26207**

Tin, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG389624													
WG389624ICV	ICV	09/01/15 15:24	II150811-1	2		2.023	mg/L	101	95	105			
WG389624ICB	ICB	09/01/15 15:30				U	mg/L		-0.12	0.12			
WG389624LFB	LFB	09/01/15 15:42	II150828-2	1.001		.959	mg/L	96	85	115			
L26086-02AS	AS	09/01/15 16:04	II150828-2	1.001	U	.965	mg/L	96	85	115			
L26086-02ASD	ASD	09/01/15 16:07	II150828-2	1.001	U	.966	mg/L	97	85	115	0	20	

Titanium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG389624													
WG389624ICV	ICV	09/01/15 15:24	II150811-1	2		2.0438	mg/L	102	95	105			
WG389624ICB	ICB	09/01/15 15:30				U	mg/L		-0.015	0.015			
WG389624LFB	LFB	09/01/15 15:42	II150828-2	1.003		1.003	mg/L	100	85	115			
L26086-02AS	AS	09/01/15 16:04	II150828-2	1.003	U	1.004	mg/L	100	85	115			
L26086-02ASD	ASD	09/01/15 16:07	II150828-2	1.003	U	1.005	mg/L	100	85	115	0	20	

Vanadium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG389624													
WG389624ICV	ICV	09/01/15 15:24	II150811-1	2		2.0102	mg/L	101	95	105			
WG389624ICB	ICB	09/01/15 15:30				U	mg/L		-0.015	0.015			
WG389624LFB	LFB	09/01/15 15:42	II150828-2	.5		.5066	mg/L	101	85	115			
L26086-02AS	AS	09/01/15 16:04	II150828-2	.5	U	.5133	mg/L	103	85	115			
L26086-02ASD	ASD	09/01/15 16:07	II150828-2	.5	U	.5122	mg/L	102	85	115	0	20	

Zinc, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
WG389624													
WG389624ICV	ICV	09/01/15 15:24	II150811-1	2		1.931	mg/L	97	95	105			
WG389624ICB	ICB	09/01/15 15:30				U	mg/L		-0.03	0.03			
WG389624LFB	LFB	09/01/15 15:42	II150828-2	.4995		.494	mg/L	99	85	115			
L26086-02AS	AS	09/01/15 16:04	II150828-2	.4995	.05	.534	mg/L	97	85	115			
L26086-02ASD	ASD	09/01/15 16:07	II150828-2	.4995	.05	.535	mg/L	97	85	115	0	20	

Adrian Brown Consultants, Inc.

ACZ Project ID: **L26207**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L26207-01	WG389063	Mercury, dissolved	M245.1 CVAA	H3	Sample was received and analyzed past holding time.
			M245.1 CVAA	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG389624	Silver, dissolved	M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M200.7 ICP	ZA	Poor recovery for Silver quality control is accepted due to low Silver solubility in samples, digestates, or extracts that do not contain sufficient Hydrochloric acid.
L26207-02	WG389824	Beryllium, dissolved	M200.8 ICP-MS	BB	Target analyte detected in calibration blank at or above acceptance limit. Sample value was > 10X the concentration in the calibration blank.
	WG389063	Mercury, dissolved	M245.1 CVAA	H3	Sample was received and analyzed past holding time.
			M245.1 CVAA	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG389624	Silver, dissolved	M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M200.7 ICP	ZA	Poor recovery for Silver quality control is accepted due to low Silver solubility in samples, digestates, or extracts that do not contain sufficient Hydrochloric acid.
	WG389702	Sulfur, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
L26207-03	WG389824	Beryllium, dissolved	M200.8 ICP-MS	BB	Target analyte detected in calibration blank at or above acceptance limit. Sample value was > 10X the concentration in the calibration blank.
	WG389063	Mercury, dissolved	M245.1 CVAA	H3	Sample was received and analyzed past holding time.
			M245.1 CVAA	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG389624	Silver, dissolved	M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M200.7 ICP	ZA	Poor recovery for Silver quality control is accepted due to low Silver solubility in samples, digestates, or extracts that do not contain sufficient Hydrochloric acid.
	WG389702	Sulfur, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
L26207-04	WG389824	Beryllium, dissolved	M200.8 ICP-MS	BB	Target analyte detected in calibration blank at or above acceptance limit. Sample value was > 10X the concentration in the calibration blank.
	WG389063	Mercury, dissolved	M245.1 CVAA	H3	Sample was received and analyzed past holding time.
			M245.1 CVAA	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG389624	Silver, dissolved	M200.7 ICP	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M200.7 ICP	ZA	Poor recovery for Silver quality control is accepted due to low Silver solubility in samples, digestates, or extracts that do not contain sufficient Hydrochloric acid.

Adrian Brown Consultants, Inc.

ACZ Project ID: **L26207**

Metals Analysis

The following parameters are not offered for certification or are not covered by AZ certificate #AZ0102.

Aluminum, dissolved	M200.7 ICP
Antimony, dissolved	M200.8 ICP-MS
Arsenic, dissolved	M200.8 ICP-MS
Barium, dissolved	M200.7 ICP
Beryllium, dissolved	M200.8 ICP-MS
Bismuth, dissolved	M200.7 ICP
Boron, dissolved	M200.7 ICP
Cadmium, dissolved	M200.8 ICP-MS
Calcium, dissolved	M200.7 ICP
Chromium, dissolved	M200.7 ICP
Cobalt, dissolved	M200.7 ICP
Copper, dissolved	M200.7 ICP
Gallium, dissolved	M200.7 ICP
Iron, dissolved	M200.7 ICP
Lead, dissolved	M200.8 ICP-MS
Lithium, dissolved	M200.7 ICP
Magnesium, dissolved	M200.7 ICP
Manganese, dissolved	M200.7 ICP
Mercury, dissolved	M245.1 CVAA
Molybdenum, dissolved	M200.7 ICP
Nickel, dissolved	M200.7 ICP
Potassium, dissolved	M200.7 ICP
Scandium, dissolved	M200.7 ICP
Selenium, dissolved	M200.8 ICP-MS
Silver, dissolved	M200.7 ICP
Sodium, dissolved	M200.7 ICP
Strontium, dissolved	M200.7 ICP
Sulfur, dissolved	M200.7 ICP
Thallium, dissolved	M200.8 ICP-MS
Tin, dissolved	M200.7 ICP
Titanium, dissolved	M200.7 ICP
Vanadium, dissolved	M200.7 ICP
Zinc, dissolved	M200.7 ICP

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Aluminum, dissolved	M200.7 ICP
Antimony, dissolved	M200.8 ICP-MS
Arsenic, dissolved	M200.8 ICP-MS
Barium, dissolved	M200.7 ICP
Beryllium, dissolved	M200.8 ICP-MS
Bismuth, dissolved	M200.7 ICP
Boron, dissolved	M200.7 ICP
Cadmium, dissolved	M200.8 ICP-MS
Calcium, dissolved	M200.7 ICP
Chromium, dissolved	M200.7 ICP
Cobalt, dissolved	M200.7 ICP
Copper, dissolved	M200.7 ICP
Gallium, dissolved	M200.7 ICP

Adrian Brown Consultants, Inc.

ACZ Project ID: **L26207**

Iron, dissolved	M200.7 ICP
Lead, dissolved	M200.8 ICP-MS
Lithium, dissolved	M200.7 ICP
Magnesium, dissolved	M200.7 ICP
Manganese, dissolved	M200.7 ICP
Mercury, dissolved	M245.1 CVAA
Molybdenum, dissolved	M200.7 ICP
Nickel, dissolved	M200.7 ICP
Potassium, dissolved	M200.7 ICP
Scandium, dissolved	M200.7 ICP
Selenium, dissolved	M200.8 ICP-MS
Silver, dissolved	M200.7 ICP
Sodium, dissolved	M200.7 ICP
Strontium, dissolved	M200.7 ICP
Sulfur, dissolved	M200.7 ICP
Thallium, dissolved	M200.8 ICP-MS
Tin, dissolved	M200.7 ICP
Titanium, dissolved	M200.7 ICP
Vanadium, dissolved	M200.7 ICP
Zinc, dissolved	M200.7 ICP

Adrian Brown Consultants, Inc.

ACZ Project ID: L26207

Date Received: 08/21/2015 08:16

Received By: kmo

Date Printed: 8/21/2015

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?	☐	☐	☒
2) Is the Chain of Custody or other directive shipping papers present?	☒	☐	☐
3) Does this project require special handling procedures such as CLP protocol?	☐	☐	☒
4) Are any samples NRC licensable material?	☐	☐	☒
5) If samples are received past hold time, proceed with requested short hold time analyses?	☒	☐	☐
6) Is the Chain of Custody complete and accurate?	☒	☐	☐
7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?	☐	☒	☐

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	☒	☐	☐
9) Are all labels on containers and are they intact and legible?	☒	☐	☐
10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time?	☒	☐	☐
11) For preserved bottle types, was the pH checked and within limits? ¹	☒	☐	☐
12) Is there sufficient sample volume to perform all requested work?	☒	☐	☐
13) Is the custody seal intact on all containers?	☐	☐	☒
14) Are samples that require zero headspace acceptable?	☐	☐	☒
15) Are all sample containers appropriate for analytical requirements?	☒	☐	☐
16) Is there an Hg-1631 trip blank present?	☐	☐	☒
17) Is there a VOA trip blank present?	☐	☐	☒
18) Were all samples received within hold time?	☐	☒	☐

Some parameters were received past hold time.

Chain of Custody Related Remarks

The 'Relinquished By' field on the COC was not completed. The project manager is contacting the client.

Client Contact Remarks

Shipping Containers

Cooler Id	Temp (°C)	Rad (µR/Hr)	Custody Seal Intact?
-----	-----	-----	-----
UNKNOWN			

Was ice present in the shipment container(s)?

No - Wet or gel ice was not present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

Adrian Brown Consultants, Inc.

ACZ Project ID: L26207

Date Received: 08/21/2015 08:16

Received By: kmo

Date Printed: 8/21/2015

¹ The preservation of the following bottle types is not checked at sample receipt: Orange (oil and grease), Purple (total cyanide), Pink (dissolved cyanide), Brown (arsenic speciation), Sterile (fecal coliform), EDTA (sulfite), HCl preserved vial (organics), Na₂S₂O₃ preserved vial (organics), and HG-1631 (total/dissolved mercury by method 1631).

ACZ

Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO. 80487 (800) 334-5493

**Belos *L26207*
L25367
LPL 8/1/15

CHAIN of CUSTODY

Report to:

Name: JEFFREY WINICK

Company: SCHLUMBERGER WATER SERV.

E-mail: JWINICK@SLB.COM

Address: 1875 LAWRENCE STREET, SUITE 500

DENVER, CO 80215

Telephone: +1.303.244.8224

Copy of Report to:

Name: ADRIAN BROWN

Company: ADRIAN BROWN CONSULTANTS

E-mail: abrown@abch2o.com

Telephone: (303) 698-9080

Invoice to:

Name: ADRIAN BROWN

Company: ADRIAN BROWN CONSULTANTS

E-mail: lbrown@abch2o.com

Address: 130 W 4th Ave

Denver CO USA 80223

Telephone: (303) 698-9080

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses?
If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified.

YES

NO

Are samples for CC DW Compliance Monitoring?
If yes, please include state forms. Results will be reported to PQL.

YES

NO

X

PROJECT INFORMATION

Quote #: CO HYDROGEOCHEMICAL STUDY

Project/PO #:

Reporting state for compliance testing:

Sampler's Name: Beverly Furfaro/ALS

Are any samples NRC licensable material? Yes No

ANALYSES REQUESTED (attach list or use quote number)

SAMPLE IDENTIFICATION

DATE/TIME

Matrix

of Containers

CO-HYDROGEO-CHEM

CO-HYDROGEO-CHEM-PRE-HCT

GHC15-1/3300-3500/Static 08-July-15:

rock

1(kg)

X

GHC15-1/3500-3700/Static 08-July-15:

rock

1(kg)

X

GHC15-1/3700-3874/Static 08-July-15:

rock

1(kg)

X

GHC15-1/3300-3874/Kineti 08-July-15:

rock

8(kg)

X

COPY

SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

RKs

contact Jeff Winick at 303.244.8224 for further instructions

Please refer to ACZ's terms & conditions located on the reverse side of this COC

RELINQUISHED BY:

DATE/TIME

RECEIVED BY:

DATE/TIME

FRMAD050 01.15.09

White - Return with sample.

Yellow - Retain for your records.

L26207-1509151318

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Isotope Analyses for:
Adrian Brown Consultant

IT2 FILE #
150135

2015-09-10

Mirna Stas



Client: Adrian Brown Consultant

130W. 4th Ave.

Denver, CO 80223

USA

Tel: 1 (303) 698-9080

Attn.: Adrian Brown / Jeff Winick

[E-mail: JWinick@slb.com](mailto:JWinick@slb.com)

[E-mail: 1brown@abch2o.com](mailto:1brown@abch2o.com)

$\delta^{18}\text{O}$ Analyses Results :

File Number: 150135

Project Number: 55187

#	Sample ID	Collection		Sample #	$\delta^{18}\text{O}$	Aver	Stdv
		Date	Time		H_2O	VSMOW	
1	GHC15-1-3735	April 22, 2015	20:00	31635	X	-12.78	0.02

Instrument Used: Cavity Ring Down Spectroscopy (CRDS)

CRDS (Model L1102-i) (Piccaro, California, USA).

Standard Used:

IT²-13 / IT²-14 / IT²-12 Calibrated with IAEA Standards (V-SMOW, SLAP, and GISP)

Typical Standard deviation:

±0.1‰



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$\delta^2\text{H}$ Analyses Results :

File Number: 150135

Project Number: 55187

#	Sample ID	Collection		Sample #	$\delta^2\text{H}$	Aver	Stdv
		Date	Time		H_2O		
1	GHC15-1-3735	April 22, 2015	20:00	31635	X	-96.0	0.2

Instrument Used: Cavity Ring Down Spectroscopy (CRDS)

CRDS (Model L1102-i) (Piccaro, California, USA).

Standard Used:

IT²-13 / IT²-14 / IT²-12 Calibrated with IAEA Standards (V-SMOW, SLAP, and GISP)

Typical Standard deviation:

±1‰



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$\delta^{18}\text{O}(\text{SO}_4)$ Analyses Results :

File Number: 150135

Project Number: 55187

#	Sample ID	Collection		Sample #	$\delta^{18}\text{O}$	Result
		Date	Time		SO_4	VSMOW
1	GHC15-1-3735	April 22, 2015	20:00	31635	X	10.4

Instrument Used:

Isotope Ratio mass spectrometry (IRMS) - Delta^{Plus} XL, Finnigan MAT, Germany
Coupled with TC/EA, Thermo Scientific, Germany.

Standard Used:

USGS-32 / NBS-127 / IAEA-SO-5 / IAEA-SO-6

Typical Standard deviation:

±0.3‰



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$\delta^{34}\text{S}(\text{SO}_4)$ Analyses Results :

File Number: 150135

Project Number: 55187

#	Sample ID	Collection		Sample #	$\delta^{34}\text{S}$	Result
		Date	Time		SO_4	VCDT
1	GHC15-1-3735	April 22, 2015	20:00	31635	X	9.0

Instrument Used:

Isotope Ratio mass spectrometry (IRMS) - MAT 253, Thermo Scientific, Germany
Coupled with Elemental Analyzer (EA), Fisons Instruments, Italy

Standard Used:

IAEA-SO-6 / IT²-520 / IAEA-SO-5 / IT²-518 / NBS-127

Typical Standard deviation:

±0.5‰



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$\delta^{13}\text{C}(\text{DIC})$ Analyses Results :

File Number: 150135

Project Number: 55187

#	Sample ID	Collection		Sample #	$\delta^{13}\text{C}$	Result	Repeat
		Date	Time				
1	GHC15-1-3735	April 22, 2015	20:00	31635	X	-7.7	-8.1

Instrument Used:

Isotope Ratio mass spectrometry (IRMS) - Delta^{Plus} XL, Finnigan MAT, Germany

Standard Used:

IT²-27

IT²-34

NBS-18

NBS-19

Typical Standard deviation:

$\pm 0.2 \text{ ‰}$



12421 W. 49th Avenue, Unit #6
Wheat Ridge, CO 80033 (303) 463-8270

Semi-Quantitative
X-Ray Diffraction Analysis
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Client:
Adrian Brown Consultants, Inc.
130 W. 4th Avenue
Denver, CO 80223

Analysis Date: 8-27-15
Reporting Date: 8-28-15
Receipt Date: 8-19-15
Client Job No.: None Given
Project Title: Cripple Creek
DCMSL Project: ABRC7

Client Sample No.:	L25101-01	L25101-02	L25101-03	L25101-04
	GHC15-1/100-300	GHC15-1/300-500	GHC15-1/500-700	GHC15-1/700-900
<u>Phase</u>	Static	Static	Static	Static
Quartz	8	9	7	8
K-Feldspar	58	66	57	42
Plagioclase	1	<2 *	4	21
Pyrite	2	1	2	5
Alunite	5	5	3	-
Jarosite	3	2	2	2
Mica	10	7	9	10
Goethite	2	2	2	2
Carbonate/Undifferentiated	-	-	-	-
Unaccounted/Amorphous	11	8	14	10

Client Sample No.:	L25101-05	L25101-06	L25101-07	L25101-08
	GHC15-1/900-1100	GHC15-1/1100-1300	GHC15-1/1300-1500	GHC15-1/1500-1700
<u>Phase</u>	Static	Static	Static	Static
Quartz	6	7	6	7
K-Feldspar	30	48	37	47
Plagioclase	29	18	31	20
Pyrite	8	7	11	11
Jarosite	2	2	-	-
Mica	9	13	12	4
Rhodochrosite	-	-	-	3
Carbonate/Undifferentiated	-	-	-	-
Unaccounted/Amorphous	16	5	3	8

* May be present



12421 W. 49th Avenue, Unit #6
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Semi-Quantitative
X-Ray Diffraction Analysis
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Client:	Analysis Date:	8-27-15
Adrian Brown Consultants, Inc.	Reporting Date:	8-28-15
130 W. 4th Avenue	Receipt Date:	8-19-15
Denver, CO 80223	Client Job No.:	None Given
	Project Title:	Cripple Creek
	DCMSL Project:	ABRC7

Client Sample No.:	L25049-01	L25049-02	L25049-03	L25049-04
	GHC15-1/1700-1900	GHC15-1/1900-2100	GHC15-1/2100-2300	GHC15-1/2300-2500
<u>Phase</u>	Static	Static	Static	Static
Quartz	6	8	9	8
K-Feldspar	48	47	50	61
Plagioclase	15	6	5	5
Pyrite	9	9	6	6
Gypsum	-	-	2	3
Jarosite	-	2	1	2
Mica	11	12	12	9
Calcite	-	1	2	3
Rhodochrosite	1	-	-	-
Carbonate/Undifferentiated	-	-	-	-
Unaccounted/Amorphous	10	15	13	3

Client Sample No.:	L25227-01	L25227-02	L25227-03	L25227-04
	GHC15-1/2500-2700	GHC15-1/2700-2900	GHC15-1/2900-3100	GHC15-1/3100-3300
<u>Phase</u>	Static	Static	Static	Static
Quartz	5	9	6	4
K-Feldspar	42	49	40	39
Plagioclase	1	5	13	19
Pyrite	4	5	5	8
Gypsum	32	12	10	6
Mica	7	2	7	3
Calcite	2	5	9	12
Carbonate/Undifferentiated	-	-	-	-
Unaccounted/Amorphous	7	13	10	9

* May be present



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Wheat Ridge, CO 80033 (303) 463-8270

Semi-Quantitative
X-Ray Diffraction Analysis
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Client:	Analysis Date:	8-27-15
Adrian Brown Consultants, Inc.	Reporting Date:	8-28-15
130 W. 4th Avenue	Receipt Date:	8-19-15
Denver, CO 80223	Client Job No.:	None Given
	Project Title:	Cripple Creek
	DCMSL Project:	ABRC7

Client Sample No.:	L25367-01	L25367-02	L25367-03	L25102-01
	GHC15-1/3300-3500	GHC15-1/3500-3700	GHC15-1/3700-3874	GHC15-1/100-900
Phase	Static	Static	Static	Kinetic
Quartz	3	5	6	10
K-Feldspar	31	47	46	62
Plagioclase	29	18	12	9
Pyrite	5	6	5	2
Gypsum	10	12	14	-
Mica	6	3	2	4
Calcite	3	3	3	-
Carbonate/Undifferentiated	-	-	-	-
Unaccounted/Amorphous	13	6	12	13

Client Sample No.:	L25103-01	L25050-01	L25228-01	L25368-01
	GHC15-1/900-1700	GHC15-1/1700-2500	GHC15-1/2500-3300	GHC15-1/3300-3874
Phase	Kinetic	Kinetic	Kinetic	Kinetic
Quartz	7	7	6	5
K-Feldspar	44	60	39	38
Plagioclase	25	9	9	20
Pyrite	9	10	5	6
Gypsum	-	2	21	19
Mica	5	5	3	3
Calcite	-	-	6	2
Carbonate/Undifferentiated	-	**	-	-
Unaccounted/Amorphous	11	7	12	8

** Carbonate is present in trace amounts (<1%) using optical microscopy.

* May be present



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Semi-Quantitative
X-Ray Diffraction Analysis
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Client:	Analysis Date:	8-27-15
Adrian Brown Consultants, Inc.	Reporting Date:	8-28-15
130 W. 4th Avenue	Receipt Date:	8-19-15
Denver, CO 80223	Client Job No.:	None Given
	Project Title:	Cripple Creek
	DCMSL Project:	ABRC7

The samples were spiked with corundum, prepared for x-ray diffraction analysis and scanned over a range of of 3° to 45° 2 Θ Cu K α radiation, 40kV, 25mA. Mineral phases were identified with the aid of computer-assisted programs accessing a cd-rom powder diffraction database. Estimates of mineral concentrations are based on relative peak heights and reference intensity ratios (RIR) measured in-house.

Ron Schott, Analyst

APPENDIX 3.4

GHC15-1 - CHEMICAL DATABASE

Hole ID	Composite Type	Analysis Type	Sample ID	Sample Number	Sample Date	Lab ID	Lab Name	Date Analyzed	Time Analyzed	Parameter	Cas Number	EPA Method	Matrix	Result	Qual	Units	MDL	PQL	Reported Result	Value	Value (NDD)	Value (NDZ)
GHC15-1		Groundwater Chemistry	GHC15-1-3433	GHC15-1-3433	04/14/15	L23848-01	ACZ	04/18/15	12:00	Residue, Filterable (TDS) @180C		SM2540C	Groundwater	1200		mg/L	100	200	1200	1200	1200	1200
GHC15-1		Groundwater Chemistry	GHC15-1-3433	GHC15-1-3433	04/14/15	L23848-01	ACZ	04/21/15	19:26	Aluminum, dissolved	7429-90-5	M200.7 ICP	Groundwater	0.11	B	mg/L	0.03	0.2	0.11*	0.11	0.11	0.11
GHC15-1		Groundwater Chemistry	GHC15-1-3433	GHC15-1-3433	04/14/15	L23848-01	ACZ	04/21/15	19:26	Barium, dissolved	7440-39-3	M200.7 ICP	Groundwater	0.117		mg/L	0.003	0.02	0.117	0.117	0.117	0.117
GHC15-1		Groundwater Chemistry	GHC15-1-3433	GHC15-1-3433	04/14/15	L23848-01	ACZ	04/21/15	19:26	Boron, dissolved	7440-42-8	M200.7 ICP	Groundwater	0.14		mg/L	0.01	0.05	0.14	0.14	0.14	0.14
GHC15-1		Groundwater Chemistry	GHC15-1-3433	GHC15-1-3433	04/14/15	L23848-01	ACZ	04/21/15	19:26	Calcium, dissolved	7440-70-2	M200.7 ICP	Groundwater	141		mg/L	0.1	0.5	141	141	141	141
GHC15-1		Groundwater Chemistry	GHC15-1-3433	GHC15-1-3433	04/14/15	L23848-01	ACZ	04/21/15	19:26	Chromium, dissolved	7440-47-3	M200.7 ICP	Groundwater		U	mg/L	0.01	0.05	<0.01	-0.01	0.01	0
GHC15-1		Groundwater Chemistry	GHC15-1-3433	GHC15-1-3433	04/14/15	L23848-01	ACZ	04/21/15	19:26	Cobalt, dissolved	7440-48-4	M200.7 ICP	Groundwater		U	mg/L	0.01	0.05	<0.01	-0.01	0.01	0
GHC15-1		Groundwater Chemistry	GHC15-1-3433	GHC15-1-3433	04/14/15	L23848-01	ACZ	04/21/15	19:26	Copper, dissolved	7440-50-8	M200.7 ICP	Groundwater		U	mg/L	0.01	0.05	<0.01	-0.01	0.01	0
GHC15-1		Groundwater Chemistry	GHC15-1-3433	GHC15-1-3433	04/14/15	L23848-01	ACZ	04/21/15	19:26	Gallium, dissolved	7440-55-3	M200.7 ICP	Groundwater		U	mg/L	0.1	0.5	<0.1	-0.1	0.1	0
GHC15-1		Groundwater Chemistry	GHC15-1-3433	GHC15-1-3433	04/14/15	L23848-01	ACZ	04/21/15	19:26	Iron, dissolved	7439-89-6	M200.7 ICP	Groundwater	1.15		mg/L	0.02	0.05	1.15	1.15	1.15	1.15
GHC15-1		Groundwater Chemistry	GHC15-1-3433	GHC15-1-3433	04/14/15	L23848-01	ACZ	04/21/15	19:26	Lithium, dissolved	7439-93-2	M200.7 ICP	Groundwater	0.062		mg/L	0.008	0.04	0.062	0.062	0.062	0.062
GHC15-1		Groundwater Chemistry	GHC15-1-3433	GHC15-1-3433	04/14/15	L23848-01	ACZ	04/21/15	19:26	Manganese, dissolved	7439-96-5	M200.7 ICP	Groundwater	1.12		mg/L	0.005	0.03	1.12	1.12	1.12	1.12
GHC15-1		Groundwater Chemistry	GHC15-1-3433	GHC15-1-3433	04/14/15	L23848-01	ACZ	04/21/15	19:26	Molybdenum, dissolved	7439-98-7	M200.7 ICP	Groundwater	0.12		mg/L	0.02	0.1	0.12	0.12	0.12	0.12
GHC15-1		Groundwater Chemistry	GHC15-1-3433	GHC15-1-3433	04/14/15	L23848-01	ACZ	04/21/15	19:26	Nickel, dissolved	7440-02-0	M200.7 ICP	Groundwater	0.019	B	mg/L	0.008	0.04	0.019*	0.019	0.019	0.019
GHC15-1		Groundwater Chemistry	GHC15-1-3433	GHC15-1-3433	04/14/15	L23848-01	ACZ	04/21/15	19:26	Potassium, dissolved	7440-09-7	M200.7 ICP	Groundwater	4.4		mg/L	0.2	1	4.4	4.4	4.4	4.4
GHC15-1		Groundwater Chemistry	GHC15-1-3433	GHC15-1-3433	04/14/15	L23848-01	ACZ	04/21/15	19:26	Scandium, dissolved	7440-20-2	M200.7 ICP	Groundwater		U	mg/L	0.1	0.5	<0.1	-0.1	0.1	0
GHC15-1		Groundwater Chemistry	GHC15-1-3433	GHC15-1-3433	04/14/15	L23848-01	ACZ	04/21/15	19:26	Silver, dissolved	7440-22-4	M200.7 ICP	Groundwater		U	mg/L	0.01	0.03	<0.01	-0.01	0.01	0
GHC15-1		Groundwater Chemistry	GHC15-1-3433	GHC15-1-3433	04/14/15	L23848-01	ACZ	04/21/15	19:26	Sodium, dissolved	7440-23-5	M200.7 ICP	Groundwater	312		mg/L	0.2	1	312	312	312	312
GHC15-1		Groundwater Chemistry	GHC15-1-3433	GHC15-1-3433	04/14/15	L23848-01	ACZ	04/21/15	19:26	Strontium, dissolved	7440-24-6	M200.7 ICP	Groundwater	2.56		mg/L	0.005	0.03	2.56	2.56	2.56	2.56
GHC15-1		Groundwater Chemistry	GHC15-1-3433	GHC15-1-3433	04/14/15	L23848-01	ACZ	04/21/15	19:26	Tin, dissolved	7440-31-5	M200.7 ICP	Groundwater		U	mg/L	0.04	0.2	<0.04	-0.04	0.04	0
GHC15-1		Groundwater Chemistry	GHC15-1-3433	GHC15-1-3433	04/14/15	L23848-01	ACZ	04/21/15	19:26	Titanium, dissolved	7440-32-6	M200.7 ICP	Groundwater		U	mg/L	0.005	0.03	<0.005	-0.005	0.005	0
GHC15-1		Groundwater Chemistry	GHC15-1-3433	GHC15-1-3433	04/14/15	L23848-01	ACZ	04/21/15	19:26	Vanadium, dissolved	7440-62-2	M200.7 ICP	Groundwater		U	mg/L	0.005	0.03	<0.005	-0.005	0.005	0
GHC15-1		Groundwater Chemistry	GHC15-1-3433	GHC15-1-3433	04/14/15	L23848-01	ACZ	04/21/15	19:26	Zinc, dissolved	7440-66-6	M200.7 ICP	Groundwater	0.01	B	mg/L	0.01	0.05	0.01*	0.01	0.01	0.01
GHC15-1		Groundwater Chemistry	GHC15-1-3433	GHC15-1-3433	04/14/15	L23848-01	ACZ	04/22/15	11:46	pH		SM4500H+ B	Groundwater	7	H	units	0.1	0.1	7	7	7	7
GHC15-1		Groundwater Chemistry	GHC15-1-3433	GHC15-1-3433	04/14/15	L23848-01	ACZ	04/22/15	11:46	pH measured at		SM4500H+ B	Groundwater	18.2	C		0.1	0.1	18.2	18.2	18.2	18.2
GHC15-1		Groundwater Chemistry	GHC15-1-3433	GHC15-1-3433	04/14/15	L23848-01	ACZ	04/22/15	12:02	Bicarbonate as CaCO3	10139	SM2320B - Titration	Groundwater	675		mg/L	3	20	675	675	675	675
GHC15-1		Groundwater Chemistry	GHC15-1-3433	GHC15-1-3433	04/14/15	L23848-01	ACZ	04/22/15	12:02	Carbonate as CaCO3		SM2320B - Titration	Groundwater		U	mg/L	3	20	<3	-3	3	0
GHC15-1		Groundwater Chemistry	GHC15-1-3433	GHC15-1-3433	04/14/15	L23848-01	ACZ	04/22/15	12:02	Hydroxide as CaCO3		SM2320B - Titration	Groundwater		U	mg/L	3	20	<3	-3	3	0
GHC15-1		Groundwater Chemistry	GHC15-1-3433	GHC15-1-3433	04/14/15	L23848-01	ACZ	04/22/15	12:02	Total Alkalinity	10093	SM2320B - Titration	Groundwater	675		mg/L	3	20	675	675	675	675
GHC15-1		Groundwater Chemistry	GHC15-1-3433	GHC15-1-3433	04/14/15	L23848-01	ACZ	04/22/15	14:39	Bismuth, dissolved	7440-69-9	M200.7 ICP	Groundwater		U	mg/L	0.04	0.2	<0.04	-0.04	0.04	0
GHC15-1		Groundwater Chemistry	GHC15-1-3433	GHC15-1-3433	04/14/15	L23848-01	ACZ	04/22/15	14:39	Magnesium, dissolved	7439-95-4	M200.7 ICP	Groundwater	20.6		mg/L	0.2	1	20.6	20.6	20.6	20.6
GHC15-1		Groundwater Chemistry	GHC15-1-3433	GHC15-1-3433	04/14/15	L23848-01	ACZ	04/22/15	18:09	Chloride	16887-00-6	M300.0 - Ion Chromat	Groundwater	27.9		mg/L	5	25	27.9	27.9	27.9	27.9
GHC15-1		Groundwater Chemistry	GHC15-1-3433	GHC15-1-3433	04/14/15	L23848-01	ACZ	04/22/15	18:09	Fluoride	16984-48-8	M300.0 - Ion Chromat	Groundwater	0.85	B	mg/L	0.5	2.5	0.85*	0.85	0.85	0.85
GHC15-1		Groundwater Chemistry	GHC15-1-3433	GHC15-1-3433	04/14/15	L23848-01	ACZ	04/22/15	18:09	Sulfate	14808-79-8	M300.0 - Ion Chromat	Groundwater	790		mg/L	5	25	790	790	790	790
GHC15-1		Groundwater Chemistry	GHC15-1-3433	GHC15-1-3433	04/14/15	L23848-01	ACZ	04/29/15	13:22	Mercury, dissolved	7439-97-6	M245.1 CVAA	Groundwater		U	mg/L	0.0002	0.001	<0.0002	-0.0002	0.0002	0
GHC15-1		Groundwater Chemistry	GHC15-1-3433	GHC15-1-3433	04/14/15	L23848-01	ACZ	04/29/15	19:10	Antimony, dissolved	7440-36-0	M200.8 ICP-MS	Groundwater		U	mg/L	0.0004	0.002	<0.0004	-0.0004	0.0004	0
GHC15-1		Groundwater Chemistry	GHC15-1-3433	GHC15-1-3433	04/14/15	L23848-01	ACZ	04/29/15	19:10	Arsenic, dissolved	7440-38-2	M200.8 ICP-MS	Groundwater	0.0003	B	mg/L	0.0002	0.001	0.0003*	0.0003	0.0003	0.0003
GHC15-1		Groundwater Chemistry	GHC15-1-3433	GHC15-1-3433	04/14/15	L23848-01	ACZ	04/29/15	19:10	Beryllium, dissolved	7440-41-7	M200.8 ICP-MS	Groundwater		U	mg/L	0.00005	0.0003	<0.00005	-0.00005	0.00005	0
GHC15-1		Groundwater Chemistry	GHC15-1-3433	GHC15-1-3433	04/14/15	L23848-01	ACZ	04/29/15	19:10	Cadmium, dissolved	7440-43-9	M200.8 ICP-MS	Groundwater		U	mg/L	0.0001	0.0005	<0.0001	-0.0001	0.0001	0
GHC15-1		Groundwater Chemistry	GHC15-1-3433	GHC15-1-3433	04/14/15	L23848-01	ACZ	04/29/15	19:10	Lead, dissolved	7439-92-1	M200.8 ICP-MS	Groundwater	0.0068		mg/L	0.0001	0.0005	0.0068	0.0068	0.0068	0.0068
GHC15-1		Groundwater Chemistry	GHC15-1-3433	GHC15-1-3433	04/14/15	L23848-01	ACZ	04/29/15	19:10	Selenium, dissolved	7782-49-2	M200.8 ICP-MS	Groundwater	0.0006		mg/L	0.0001	0.0003	0.0006	0.0006	0.0006	0.0006
GHC15-1		Groundwater Chemistry	GHC15-1-3433	GHC15-1-3433	04/14/15	L23848-01	ACZ	04/29/15	19:10	Thallium, dissolved	7440-28-0	M200.8 ICP-MS	Groundwater	0.0001	B	mg/L	0.0001	0.0005	0.0001*	0.0001	0.0001	0.0001
GHC15-1		Groundwater Chemistry	GHC15-1-3433	GHC15-1-3433	04/14/15	L23848-01	ACZ	05/01/15	08:22	Cation-Anion Balance		Calculation	Groundwater			%			0	0	0	0
GHC15-1		Groundwater Chemistry	GHC15-1-3433	GHC15-1-3433	04/14/15	L23848-01	ACZ	05/01/15	08:22	Sum of Anions		Calculation	Groundwater			meq/L			0	0	0	0
GHC15-1		Groundwater Chemistry	GHC15-1-3433	GHC15-1-3433	04/14/15	L23848-01	ACZ	05/01/15	08:22	Sum of Cations		Calculation	Groundwater			meq/L			0	0	0	0
GHC15-1		Groundwater Chemistry	GHC15-1-3433	GHC15-1-3433	04/14/15	L23848-01	ACZ	05/01/15	08:22	TDS (calculated)		Calculation	Groundwater	1710		mg/L			1710	1710	1710	1710
GHC15-1		Groundwater Chemistry	GHC15-1-3433	GHC15-1-3433	04/14/15	L23848-01	ACZ	05/01/15	08:22	TDS (ratio - measured/calculated)		Calculation	Groundwater	0.7					0.7	0.7	0.7	0.7
GHC15-1		Groundwater Chemistry	GHC15-1-3433 DUP	GHC15-1-3433 DUP	04/14/15	L23848-02	ACZ	04/18/15	12:02	Residue, Filterable (TDS) @180C		SM2540C	Groundwater	1400		mg/L	100	200	1400	1400	1400	1400
GHC15-1		Groundwater Chemistry	GHC15-1-3433 DUP	GHC15-1-3433 DUP	04/14/15	L23848-02	ACZ	04/21/15	19:41	Aluminum, dissolved	7429-90-5	M200.7 ICP	Groundwater	0.07	B	mg/L	0.03	0.2	0.07*	0.07	0.07	0.07
GHC15-1		Groundwater Chemistry	GHC15-1-3433 DUP	GHC15-1-3433 DUP	04/14/15	L23848-02	ACZ	04/21/15	19:41	Barium, dissolved	7440-39-3	M200.7 ICP	Groundwater	0.115		mg/L	0.003	0.02	0.115	0.115	0.115	0.115
GHC15-1		Groundwater Chemistry	GHC15-1-3433 DUP	GHC15-1-3433 DUP	04/14/15	L23848-02	ACZ	04/21/15	19:41	Boron, dissolved	7440-42-8	M200.7 ICP	Groundwater	0.15		mg/L	0.01	0.05	0.15	0.15	0.15	0.15
GHC15-1		Groundwater Chemistry	GHC15-1-3433 DUP	GHC15-1-3433 DUP	04/14/15	L23848-02	ACZ	04/21/15	19:41	Calcium, dissolved	7440-70-2	M200.7 ICP	Groundwater	136		mg/L	0.1	0.5	136	136	136	136
GHC15-1		Groundwater Chemistry	GHC15-1-3433 DUP	GHC15-1-3433 DUP	04/14/15	L23848-02	ACZ	04/21/15	19:41	Chromium, dissolved	7440-47-3	M200.7 ICP	Groundwater		U	mg/L	0.01	0.05	<0.01	-0.01	0.01	0
GHC15-1		Groundwater Chemistry	GHC15-1-3433 DUP	GHC15-1-3433 DUP	04/14/15	L23848-02	ACZ	04/21/15	19:41	Cobalt, dissolved	7440-48-4	M200.7 ICP	Groundwater		U	mg/L	0.01	0.05	<0.01	-0.01	0.01	0
GHC15-1																						

Hole ID	Composite Type	Analysis Type	Sample ID	Sample Number	Sample Date	Lab ID	Lab Name	Date Analyzed	Time Analyzed	Parameter	Cas Number	EPA Method	Matrix	Result	Qual	Units	MDL	PQL	Reported Result	Value	Value (ND)	Value (NDZ)
GHC15-1		Groundwater Chemistry	GHC15-1-3433 DUP	GHC15-1-3433 DUP	04/14/15	L23848-02	ACZ	04/21/15	19:41	Potassium, dissolved	7440-09-7	M200.7 ICP	Groundwater	4.4		mg/L	0.2	1	4.4	4.4	4.4	4.4
GHC15-1		Groundwater Chemistry	GHC15-1-3433 DUP	GHC15-1-3433 DUP	04/14/15	L23848-02	ACZ	04/21/15	19:41	Scandium, dissolved	7440-20-2	M200.7 ICP	Groundwater		U	mg/L	0.1	0.5	<0.1	-0.1	0.1	0
GHC15-1		Groundwater Chemistry	GHC15-1-3433 DUP	GHC15-1-3433 DUP	04/14/15	L23848-02	ACZ	04/21/15	19:41	Silver, dissolved	7440-22-4	M200.7 ICP	Groundwater		U	mg/L	0.01	0.03	<0.01	-0.01	0.01	0
GHC15-1		Groundwater Chemistry	GHC15-1-3433 DUP	GHC15-1-3433 DUP	04/14/15	L23848-02	ACZ	04/21/15	19:41	Sodium, dissolved	7440-23-5	M200.7 ICP	Groundwater	313		mg/L	0.2	1	313	313	313	313
GHC15-1		Groundwater Chemistry	GHC15-1-3433 DUP	GHC15-1-3433 DUP	04/14/15	L23848-02	ACZ	04/21/15	19:41	Strontium, dissolved	7440-24-6	M200.7 ICP	Groundwater	2.46		mg/L	0.005	0.03	2.46	2.46	2.46	2.46
GHC15-1		Groundwater Chemistry	GHC15-1-3433 DUP	GHC15-1-3433 DUP	04/14/15	L23848-02	ACZ	04/21/15	19:41	Tin, dissolved	7440-31-5	M200.7 ICP	Groundwater		U	mg/L	0.04	0.2	<0.04	-0.04	0.04	0
GHC15-1		Groundwater Chemistry	GHC15-1-3433 DUP	GHC15-1-3433 DUP	04/14/15	L23848-02	ACZ	04/21/15	19:41	Titanium, dissolved	7440-32-6	M200.7 ICP	Groundwater	0.005	B	mg/L	0.005	0.03	0.005*	0.005	0.005	0.005
GHC15-1		Groundwater Chemistry	GHC15-1-3433 DUP	GHC15-1-3433 DUP	04/14/15	L23848-02	ACZ	04/21/15	19:41	Vanadium, dissolved	7440-62-2	M200.7 ICP	Groundwater		U	mg/L	0.005	0.03	<0.005	-0.005	0.005	0
GHC15-1		Groundwater Chemistry	GHC15-1-3433 DUP	GHC15-1-3433 DUP	04/14/15	L23848-02	ACZ	04/21/15	19:41	Zinc, dissolved	7440-66-6	M200.7 ICP	Groundwater	0.01	B	mg/L	0.01	0.05	0.01*	0.01	0.01	0.01
GHC15-1		Groundwater Chemistry	GHC15-1-3433 DUP	GHC15-1-3433 DUP	04/14/15	L23848-02	ACZ	04/22/15	12:02	pH		SM4500H+ B	Groundwater	7	H	units	0.1	0.1	7	7	7	7
GHC15-1		Groundwater Chemistry	GHC15-1-3433 DUP	GHC15-1-3433 DUP	04/14/15	L23848-02	ACZ	04/22/15	12:02	pH measured at		SM4500H+ B	Groundwater	18.8		C	0.1	0.1	18.8	18.8	18.8	18.8
GHC15-1		Groundwater Chemistry	GHC15-1-3433 DUP	GHC15-1-3433 DUP	04/14/15	L23848-02	ACZ	04/22/15	12:18	Bicarbonate as CaCO3	10139	SM2320B - Titration	Groundwater	677		mg/L	3	20	677	677	677	677
GHC15-1		Groundwater Chemistry	GHC15-1-3433 DUP	GHC15-1-3433 DUP	04/14/15	L23848-02	ACZ	04/22/15	12:18	Carbonate as CaCO3		SM2320B - Titration	Groundwater		U	mg/L	3	20	<3	-3	3	0
GHC15-1		Groundwater Chemistry	GHC15-1-3433 DUP	GHC15-1-3433 DUP	04/14/15	L23848-02	ACZ	04/22/15	12:18	Hydroxide as CaCO3		SM2320B - Titration	Groundwater		U	mg/L	3	20	<3	-3	3	0
GHC15-1		Groundwater Chemistry	GHC15-1-3433 DUP	GHC15-1-3433 DUP	04/14/15	L23848-02	ACZ	04/22/15	12:18	Total Alkalinity	10093	SM2320B - Titration	Groundwater	677		mg/L	3	20	677	677	677	677
GHC15-1		Groundwater Chemistry	GHC15-1-3433 DUP	GHC15-1-3433 DUP	04/14/15	L23848-02	ACZ	04/22/15	14:49	Bismuth, dissolved	7440-69-9	M200.7 ICP	Groundwater		U	mg/L	0.04	0.2	<0.04	-0.04	0.04	0
GHC15-1		Groundwater Chemistry	GHC15-1-3433 DUP	GHC15-1-3433 DUP	04/14/15	L23848-02	ACZ	04/22/15	14:49	Magnesium, dissolved	7439-95-4	M200.7 ICP	Groundwater	20.3		mg/L	0.2	1	20.3	20.3	20.3	20.3
GHC15-1		Groundwater Chemistry	GHC15-1-3433 DUP	GHC15-1-3433 DUP	04/14/15	L23848-02	ACZ	04/22/15	18:27	Chloride	16887-00-6	M300.0 - Ion Chromat	Groundwater	26.8		mg/L	5	25	26.8	26.8	26.8	26.8
GHC15-1		Groundwater Chemistry	GHC15-1-3433 DUP	GHC15-1-3433 DUP	04/14/15	L23848-02	ACZ	04/22/15	18:27	Fluoride	16984-48-8	M300.0 - Ion Chromat	Groundwater	0.86	B	mg/L	0.5	2.5	0.86*	0.86	0.86	0.86
GHC15-1		Groundwater Chemistry	GHC15-1-3433 DUP	GHC15-1-3433 DUP	04/14/15	L23848-02	ACZ	04/22/15	18:27	Sulfate	14808-79-8	M300.0 - Ion Chromat	Groundwater	786		mg/L	5	25	786	786	786	786
GHC15-1		Groundwater Chemistry	GHC15-1-3433 DUP	GHC15-1-3433 DUP	04/14/15	L23848-02	ACZ	04/29/15	13:24	Mercury, dissolved	7439-97-6	M245.1 CVAA	Groundwater		U	mg/L	0.0002	0.001	<0.0002	-0.0002	0.0002	0
GHC15-1		Groundwater Chemistry	GHC15-1-3433 DUP	GHC15-1-3433 DUP	04/14/15	L23848-02	ACZ	04/29/15	19:12	Antimony, dissolved	7440-36-0	M200.8 ICP-MS	Groundwater	0.0004	B	mg/L	0.0004	0.002	0.0004*	0.0004	0.0004	0.0004
GHC15-1		Groundwater Chemistry	GHC15-1-3433 DUP	GHC15-1-3433 DUP	04/14/15	L23848-02	ACZ	04/29/15	19:12	Arsenic, dissolved	7440-38-2	M200.8 ICP-MS	Groundwater	0.0003	B	mg/L	0.0002	0.001	0.0003*	0.0003	0.0003	0.0003
GHC15-1		Groundwater Chemistry	GHC15-1-3433 DUP	GHC15-1-3433 DUP	04/14/15	L23848-02	ACZ	04/29/15	19:12	Beryllium, dissolved	7440-41-7	M200.8 ICP-MS	Groundwater		U	mg/L	0.00005	0.0003	<0.00005	-0.00005	0.00005	0
GHC15-1		Groundwater Chemistry	GHC15-1-3433 DUP	GHC15-1-3433 DUP	04/14/15	L23848-02	ACZ	04/29/15	19:12	Cadmium, dissolved	7440-43-9	M200.8 ICP-MS	Groundwater		U	mg/L	0.0001	0.0005	<0.0001	-0.0001	0.0001	0
GHC15-1		Groundwater Chemistry	GHC15-1-3433 DUP	GHC15-1-3433 DUP	04/14/15	L23848-02	ACZ	04/29/15	19:12	Lead, dissolved	7439-92-1	M200.8 ICP-MS	Groundwater	0.0068		mg/L	0.0001	0.0005	0.0068	0.0068	0.0068	0.0068
GHC15-1		Groundwater Chemistry	GHC15-1-3433 DUP	GHC15-1-3433 DUP	04/14/15	L23848-02	ACZ	04/29/15	19:12	Selenium, dissolved	7782-49-2	M200.8 ICP-MS	Groundwater	0.0006		mg/L	0.0001	0.0003	0.0006	0.0006	0.0006	0.0006
GHC15-1		Groundwater Chemistry	GHC15-1-3433 DUP	GHC15-1-3433 DUP	04/14/15	L23848-02	ACZ	04/29/15	19:12	Thallium, dissolved	7440-28-0	M200.8 ICP-MS	Groundwater	0.0001	B	mg/L	0.0001	0.0005	0.0001*	0.0001	0.0001	0.0001
GHC15-1		Groundwater Chemistry	GHC15-1-3433 DUP	GHC15-1-3433 DUP	04/14/15	L23848-02	ACZ	05/01/15	08:22	Cation-Anion Balance		Calculation	Groundwater			%			0	0	0	0
GHC15-1		Groundwater Chemistry	GHC15-1-3433 DUP	GHC15-1-3433 DUP	04/14/15	L23848-02	ACZ	05/01/15	08:22	Sum of Anions		Calculation	Groundwater			meq/L			0	0	0	0
GHC15-1		Groundwater Chemistry	GHC15-1-3433 DUP	GHC15-1-3433 DUP	04/14/15	L23848-02	ACZ	05/01/15	08:22	Sum of Cations		Calculation	Groundwater			meq/L			0	0	0	0
GHC15-1		Groundwater Chemistry	GHC15-1-3433 DUP	GHC15-1-3433 DUP	04/14/15	L23848-02	ACZ	05/01/15	08:22	TDS (calculated)		Calculation	Groundwater	1710		mg/L			1710	1710	1710	1710
GHC15-1		Groundwater Chemistry	GHC15-1-3433 DUP	GHC15-1-3433 DUP	04/14/15	L23848-02	ACZ	05/01/15	08:22	TDS (ratio - measured/calculated)		Calculation	Groundwater	0.82					0.82	0.82	0.82	0.82
GHC15-1		Groundwater Chemistry	GHC15-1-3025	GHC15-1-3025	04/22/15	L23989-01	ACZ	04/28/15	09:47	Residue, Filterable (TDS) @180C		SM2540C	Groundwater	720		mg/L	100	200	720	720	720	720
GHC15-1		Groundwater Chemistry	GHC15-1-3025	GHC15-1-3025	04/22/15	L23989-01	ACZ	04/30/15	16:23	Aluminum, dissolved	7429-90-5	M200.7 ICP	Groundwater	1.53		mg/L	0.03	0.2	1.53	1.53	1.53	1.53
GHC15-1		Groundwater Chemistry	GHC15-1-3025	GHC15-1-3025	04/22/15	L23989-01	ACZ	04/30/15	16:23	Barium, dissolved	7440-39-3	M200.7 ICP	Groundwater	0.218		mg/L	0.003	0.02	0.218	0.218	0.218	0.218
GHC15-1		Groundwater Chemistry	GHC15-1-3025	GHC15-1-3025	04/22/15	L23989-01	ACZ	04/30/15	16:23	Bismuth, dissolved	7440-69-9	M200.7 ICP	Groundwater		U	mg/L	0.04	0.2	<0.04	-0.04	0.04	0
GHC15-1		Groundwater Chemistry	GHC15-1-3025	GHC15-1-3025	04/22/15	L23989-01	ACZ	04/30/15	16:23	Boron, dissolved	7440-42-8	M200.7 ICP	Groundwater	0.04	B	mg/L	0.01	0.05	0.04*	0.04	0.04	0.04
GHC15-1		Groundwater Chemistry	GHC15-1-3025	GHC15-1-3025	04/22/15	L23989-01	ACZ	04/30/15	16:23	Calcium, dissolved	7440-70-2	M200.7 ICP	Groundwater	29.5		mg/L	0.1	0.5	29.5	29.5	29.5	29.5
GHC15-1		Groundwater Chemistry	GHC15-1-3025	GHC15-1-3025	04/22/15	L23989-01	ACZ	04/30/15	16:23	Chromium, dissolved	7440-47-3	M200.7 ICP	Groundwater		U	mg/L	0.01	0.05	<0.01	-0.01	0.01	0
GHC15-1		Groundwater Chemistry	GHC15-1-3025	GHC15-1-3025	04/22/15	L23989-01	ACZ	04/30/15	16:23	Cobalt, dissolved	7440-48-4	M200.7 ICP	Groundwater		U	mg/L	0.01	0.05	<0.01	-0.01	0.01	0
GHC15-1		Groundwater Chemistry	GHC15-1-3025	GHC15-1-3025	04/22/15	L23989-01	ACZ	04/30/15	16:23	Copper, dissolved	7440-50-8	M200.7 ICP	Groundwater		U	mg/L	0.01	0.05	<0.01	-0.01	0.01	0
GHC15-1		Groundwater Chemistry	GHC15-1-3025	GHC15-1-3025	04/22/15	L23989-01	ACZ	04/30/15	16:23	Gallium, dissolved	7440-55-3	M200.7 ICP	Groundwater		U	mg/L	0.1	0.5	<0.1	-0.1	0.1	0
GHC15-1		Groundwater Chemistry	GHC15-1-3025	GHC15-1-3025	04/22/15	L23989-01	ACZ	04/30/15	16:23	Iron, dissolved	7439-89-6	M200.7 ICP	Groundwater	6.77		mg/L	0.02	0.05	6.77	6.77	6.77	6.77
GHC15-1		Groundwater Chemistry	GHC15-1-3025	GHC15-1-3025	04/22/15	L23989-01	ACZ	04/30/15	16:23	Lithium, dissolved	7439-93-2	M200.7 ICP	Groundwater	0.018	B	mg/L	0.008	0.04	0.018*	0.018	0.018	0.018
GHC15-1		Groundwater Chemistry	GHC15-1-3025	GHC15-1-3025	04/22/15	L23989-01	ACZ	04/30/15	16:23	Magnesium, dissolved	7439-95-4	M200.7 ICP	Groundwater	4.7		mg/L	0.2	1	4.7	4.7	4.7	4.7
GHC15-1		Groundwater Chemistry	GHC15-1-3025	GHC15-1-3025	04/22/15	L23989-01	ACZ	04/30/15	16:23	Manganese, dissolved	7439-96-5	M200.7 ICP	Groundwater	0.174		mg/L	0.005	0.03	0.174	0.174	0.174	0.174
GHC15-1		Groundwater Chemistry	GHC15-1-3025	GHC15-1-3025	04/22/15	L23989-01	ACZ	04/30/15	16:23	Molybdenum, dissolved	7439-98-7	M200.7 ICP	Groundwater	0.21		mg/L	0.02	0.1	0.21	0.21	0.21	0.21
GHC15-1		Groundwater Chemistry	GHC15-1-3025	GHC15-1-3025	04/22/15	L23989-01	ACZ	04/30/15	16:23	Nickel, dissolved	7440-02-0	M200.7 ICP	Groundwater		U	mg/L	0.008	0.04	<0.008	-0.008	0.008	0
GHC15-1		Groundwater Chemistry	GHC15-1-3025	GHC15-1-3025	04/22/15	L23989-01	ACZ	04/30/15	16:23	Potassium, dissolved	7440-09-7	M200.7 ICP	Groundwater	4.2		mg/L	0.2	1	4.2	4.2	4.2	4.2
GHC15-1		Groundwater Chemistry	GHC15-1-3025	GHC15-1-3025	04/22/15	L23989-01	ACZ	04/30/15	16:23	Scandium, dissolved	7440-20-2	M200.7 ICP	Groundwater		U	mg/L	0.1	0.5	<0.1	-0.1	0.1	0
GHC15-1		Groundwater Chemistry	GHC15-1-3025	GHC15-1-3025	04/22/15	L23989-01	ACZ	04/30/15	16:23	Silver, dissolved	7440-22-4	M200.7 ICP	Groundwater		U	mg/L	0.01	0.03	<0.01	-0.01	0.01	0
GHC15-1		Groundwater Chemistry	GHC15-1-3025	GHC15-1-3025	04/22/15	L23989-01	ACZ	04/30/15	16:23	Sodium, dissolved	7440-23-5	M200.7 ICP	Groundwater	267		mg/L	0.2	1	267	267	267	267
GHC15-1		Groundwater Chemistry	GHC15-1-3025	GHC15-1-3025	04/22/15	L23989-01	ACZ	04/30/15	16:23	Strontium, dissolved	7440-24-6	M200.7 ICP	Groundwater	0.953		mg/L	0.005	0.03	0.95			

Hole ID	Composite Type	Analysis Type	Sample ID	Sample Number	Sample Date	Lab ID	Lab Name	Date Analyzed	Time Analyzed	Parameter	Cas Number	EPA Method	Matrix	Result	Qual	Units	MDL	PQL	Reported Result	Value	Value (ND)	Value (NDZ)
GHC15-1		Groundwater Chemistry	GHC15-1-3025	GHC15-1-3025	04/22/15	L23989-01	ACZ	05/04/15	18:20	Sulfate	14808-79-8	M300.0 - Ion Chromat	Groundwater	373		mg/L	5	25	373	373	373	373
GHC15-1		Groundwater Chemistry	GHC15-1-3025	GHC15-1-3025	04/22/15	L23989-01	ACZ	05/05/15	03:50	Antimony, dissolved	7440-36-0	M200.8 ICP-MS	Groundwater	0.0011	B	mg/L	0.0004	0.002	0.0011*	0.0011	0.0011	0.0011
GHC15-1		Groundwater Chemistry	GHC15-1-3025	GHC15-1-3025	04/22/15	L23989-01	ACZ	05/05/15	03:50	Arsenic, dissolved	7440-38-2	M200.8 ICP-MS	Groundwater	0.0014		mg/L	0.0002	0.001	0.0014	0.0014	0.0014	0.0014
GHC15-1		Groundwater Chemistry	GHC15-1-3025	GHC15-1-3025	04/22/15	L23989-01	ACZ	05/05/15	03:50	Beryllium, dissolved	7440-41-7	M200.8 ICP-MS	Groundwater	0.00176		mg/L	0.00005	0.0003	0.00176	0.00176	0.00176	0.00176
GHC15-1		Groundwater Chemistry	GHC15-1-3025	GHC15-1-3025	04/22/15	L23989-01	ACZ	05/05/15	03:50	Cadmium, dissolved	7440-43-9	M200.8 ICP-MS	Groundwater	0.0004	B	mg/L	0.0001	0.0005	0.0004*	0.0004	0.0004	0.0004
GHC15-1		Groundwater Chemistry	GHC15-1-3025	GHC15-1-3025	04/22/15	L23989-01	ACZ	05/05/15	03:50	Lead, dissolved	7439-92-1	M200.8 ICP-MS	Groundwater	0.0154		mg/L	0.0001	0.0005	0.0154	0.0154	0.0154	0.0154
GHC15-1		Groundwater Chemistry	GHC15-1-3025	GHC15-1-3025	04/22/15	L23989-01	ACZ	05/05/15	03:50	Selenium, dissolved	7782-49-2	M200.8 ICP-MS	Groundwater	0.0008		mg/L	0.0001	0.0003	0.0008	0.0008	0.0008	0.0008
GHC15-1		Groundwater Chemistry	GHC15-1-3025	GHC15-1-3025	04/22/15	L23989-01	ACZ	05/05/15	03:50	Thallium, dissolved	7440-28-0	M200.8 ICP-MS	Groundwater		U	mg/L	0.0001	0.0005	<0.0001	-0.0001	0.0001	0
GHC15-1		Groundwater Chemistry	GHC15-1-3025	GHC15-1-3025	04/22/15	L23989-01	ACZ	05/06/15	11:00	pH		SM4500H+ B	Groundwater	8.1	H	units	0.1	0.1	8.1	8.1	8.1	8.1
GHC15-1		Groundwater Chemistry	GHC15-1-3025	GHC15-1-3025	04/22/15	L23989-01	ACZ	05/06/15	11:00	pH measured at		SM4500H+ B	Groundwater	22		C	0.1	0.1	22	22	22	22
GHC15-1		Groundwater Chemistry	GHC15-1-3025	GHC15-1-3025	04/22/15	L23989-01	ACZ	05/06/15	11:15	Bicarbonate as CaCO3	10139	SM2320B - Titration	Groundwater	370		mg/L	3	20	370	370	370	370
GHC15-1		Groundwater Chemistry	GHC15-1-3025	GHC15-1-3025	04/22/15	L23989-01	ACZ	05/06/15	11:15	Carbonate as CaCO3		SM2320B - Titration	Groundwater		U	mg/L	3	20	<3	-3	3	0
GHC15-1		Groundwater Chemistry	GHC15-1-3025	GHC15-1-3025	04/22/15	L23989-01	ACZ	05/06/15	11:15	Hydroxide as CaCO3		SM2320B - Titration	Groundwater		U	mg/L	3	20	<3	-3	3	0
GHC15-1		Groundwater Chemistry	GHC15-1-3025	GHC15-1-3025	04/22/15	L23989-01	ACZ	05/06/15	11:15	Total Alkalinity	10093	SM2320B - Titration	Groundwater	370		mg/L	3	20	370	370	370	370
GHC15-1		Groundwater Chemistry	GHC15-1-3025	GHC15-1-3025	04/22/15	L23989-01	ACZ	05/07/15	09:18	Cation-Anion Balance		Calculation	Groundwater			%			0	0	0	0
GHC15-1		Groundwater Chemistry	GHC15-1-3025	GHC15-1-3025	04/22/15	L23989-01	ACZ	05/07/15	09:18	Sum of Anions		Calculation	Groundwater			meq/L			0	0	0	0
GHC15-1		Groundwater Chemistry	GHC15-1-3025	GHC15-1-3025	04/22/15	L23989-01	ACZ	05/07/15	09:18	Sum of Cations		Calculation	Groundwater			meq/L			0	0	0	0
GHC15-1		Groundwater Chemistry	GHC15-1-3025	GHC15-1-3025	04/22/15	L23989-01	ACZ	05/07/15	09:18	TDS (calculated)		Calculation	Groundwater	933		mg/L			933	933	933	933
GHC15-1		Groundwater Chemistry	GHC15-1-3025	GHC15-1-3025	04/22/15	L23989-01	ACZ	05/07/15	09:18	TDS (ratio - measured/calculated)		Calculation	Groundwater	0.77					0.77	0.77	0.77	0.77
GHC15-1		Groundwater Chemistry	GHC15-1-3450	GHC15-1-3450	04/22/15	L23989-02	ACZ	04/28/15	09:49	Residue, Filterable (TDS) @180C		SM2540C	Groundwater	580		mg/L	100	200	580	580	580	580
GHC15-1		Groundwater Chemistry	GHC15-1-3450	GHC15-1-3450	04/22/15	L23989-02	ACZ	04/30/15	16:33	Aluminum, dissolved	7429-90-5	M200.7 ICP	Groundwater	2.54		mg/L	0.03	0.2	2.54	2.54	2.54	2.54
GHC15-1		Groundwater Chemistry	GHC15-1-3450	GHC15-1-3450	04/22/15	L23989-02	ACZ	04/30/15	16:33	Barium, dissolved	7440-39-3	M200.7 ICP	Groundwater	0.298		mg/L	0.003	0.02	0.298	0.298	0.298	0.298
GHC15-1		Groundwater Chemistry	GHC15-1-3450	GHC15-1-3450	04/22/15	L23989-02	ACZ	04/30/15	16:33	Bismuth, dissolved	7440-69-9	M200.7 ICP	Groundwater		U	mg/L	0.04	0.2	<0.04	-0.04	0.04	0
GHC15-1		Groundwater Chemistry	GHC15-1-3450	GHC15-1-3450	04/22/15	L23989-02	ACZ	04/30/15	16:33	Boron, dissolved	7440-42-8	M200.7 ICP	Groundwater	0.04	B	mg/L	0.01	0.05	0.04*	0.04	0.04	0.04
GHC15-1		Groundwater Chemistry	GHC15-1-3450	GHC15-1-3450	04/22/15	L23989-02	ACZ	04/30/15	16:33	Calcium, dissolved	7440-70-2	M200.7 ICP	Groundwater	62.6		mg/L	0.1	0.5	62.6	62.6	62.6	62.6
GHC15-1		Groundwater Chemistry	GHC15-1-3450	GHC15-1-3450	04/22/15	L23989-02	ACZ	04/30/15	16:33	Chromium, dissolved	7440-47-3	M200.7 ICP	Groundwater		U	mg/L	0.01	0.05	<0.01	-0.01	0.01	0
GHC15-1		Groundwater Chemistry	GHC15-1-3450	GHC15-1-3450	04/22/15	L23989-02	ACZ	04/30/15	16:33	Cobalt, dissolved	7440-48-4	M200.7 ICP	Groundwater		U	mg/L	0.01	0.05	<0.01	-0.01	0.01	0
GHC15-1		Groundwater Chemistry	GHC15-1-3450	GHC15-1-3450	04/22/15	L23989-02	ACZ	04/30/15	16:33	Copper, dissolved	7440-50-8	M200.7 ICP	Groundwater	0.01	B	mg/L	0.01	0.05	0.01*	0.01	0.01	0.01
GHC15-1		Groundwater Chemistry	GHC15-1-3450	GHC15-1-3450	04/22/15	L23989-02	ACZ	04/30/15	16:33	Gallium, dissolved	7440-55-3	M200.7 ICP	Groundwater		U	mg/L	0.1	0.5	<0.1	-0.1	0.1	0
GHC15-1		Groundwater Chemistry	GHC15-1-3450	GHC15-1-3450	04/22/15	L23989-02	ACZ	04/30/15	16:33	Iron, dissolved	7439-89-6	M200.7 ICP	Groundwater	10.5		mg/L	0.02	0.05	10.5	10.5	10.5	10.5
GHC15-1		Groundwater Chemistry	GHC15-1-3450	GHC15-1-3450	04/22/15	L23989-02	ACZ	04/30/15	16:33	Lithium, dissolved	7439-93-2	M200.7 ICP	Groundwater	0.027	B	mg/L	0.008	0.04	0.027*	0.027	0.027	0.027
GHC15-1		Groundwater Chemistry	GHC15-1-3450	GHC15-1-3450	04/22/15	L23989-02	ACZ	04/30/15	16:33	Magnesium, dissolved	7439-95-4	M200.7 ICP	Groundwater	9.8		mg/L	0.2	1	9.8	9.8	9.8	9.8
GHC15-1		Groundwater Chemistry	GHC15-1-3450	GHC15-1-3450	04/22/15	L23989-02	ACZ	04/30/15	16:33	Manganese, dissolved	7439-96-5	M200.7 ICP	Groundwater	0.744		mg/L	0.005	0.03	0.744	0.744	0.744	0.744
GHC15-1		Groundwater Chemistry	GHC15-1-3450	GHC15-1-3450	04/22/15	L23989-02	ACZ	04/30/15	16:33	Molybdenum, dissolved	7439-98-7	M200.7 ICP	Groundwater	0.07	B	mg/L	0.02	0.1	0.07*	0.07	0.07	0.07
GHC15-1		Groundwater Chemistry	GHC15-1-3450	GHC15-1-3450	04/22/15	L23989-02	ACZ	04/30/15	16:33	Nickel, dissolved	7440-02-0	M200.7 ICP	Groundwater		U	mg/L	0.008	0.04	<0.008	-0.008	0.008	0
GHC15-1		Groundwater Chemistry	GHC15-1-3450	GHC15-1-3450	04/22/15	L23989-02	ACZ	04/30/15	16:33	Potassium, dissolved	7440-09-7	M200.7 ICP	Groundwater	4.3		mg/L	0.2	1	4.3	4.3	4.3	4.3
GHC15-1		Groundwater Chemistry	GHC15-1-3450	GHC15-1-3450	04/22/15	L23989-02	ACZ	04/30/15	16:33	Scandium, dissolved	7440-20-2	M200.7 ICP	Groundwater		U	mg/L	0.1	0.5	<0.1	-0.1	0.1	0
GHC15-1		Groundwater Chemistry	GHC15-1-3450	GHC15-1-3450	04/22/15	L23989-02	ACZ	04/30/15	16:33	Silver, dissolved	7440-22-4	M200.7 ICP	Groundwater		U	mg/L	0.01	0.03	<0.01	-0.01	0.01	0
GHC15-1		Groundwater Chemistry	GHC15-1-3450	GHC15-1-3450	04/22/15	L23989-02	ACZ	04/30/15	16:33	Sodium, dissolved	7440-23-5	M200.7 ICP	Groundwater	288		mg/L	0.2	1	288	288	288	288
GHC15-1		Groundwater Chemistry	GHC15-1-3450	GHC15-1-3450	04/22/15	L23989-02	ACZ	04/30/15	16:33	Strontium, dissolved	7440-24-6	M200.7 ICP	Groundwater	1.87		mg/L	0.005	0.03	1.87	1.87	1.87	1.87
GHC15-1		Groundwater Chemistry	GHC15-1-3450	GHC15-1-3450	04/22/15	L23989-02	ACZ	04/30/15	16:33	Tin, dissolved	7440-31-5	M200.7 ICP	Groundwater		U	mg/L	0.04	0.2	<0.04	-0.04	0.04	0
GHC15-1		Groundwater Chemistry	GHC15-1-3450	GHC15-1-3450	04/22/15	L23989-02	ACZ	04/30/15	16:33	Titanium, dissolved	7440-32-6	M200.7 ICP	Groundwater	0.013	B	mg/L	0.005	0.03	0.013*	0.013	0.013	0.013
GHC15-1		Groundwater Chemistry	GHC15-1-3450	GHC15-1-3450	04/22/15	L23989-02	ACZ	04/30/15	16:33	Vanadium, dissolved	7440-62-2	M200.7 ICP	Groundwater		U	mg/L	0.005	0.03	<0.005	-0.005	0.005	0
GHC15-1		Groundwater Chemistry	GHC15-1-3450	GHC15-1-3450	04/22/15	L23989-02	ACZ	04/30/15	16:33	Zinc, dissolved	7440-66-6	M200.7 ICP	Groundwater	0.12		mg/L	0.01	0.05	0.12	0.12	0.12	0.12
GHC15-1		Groundwater Chemistry	GHC15-1-3450	GHC15-1-3450	04/22/15	L23989-02	ACZ	05/04/15	12:28	Mercury, dissolved	7439-97-6	M245.1 CVAA	Groundwater		U	mg/L	0.0002	0.001	<0.0002	-0.0002	0.0002	0
GHC15-1		Groundwater Chemistry	GHC15-1-3450	GHC15-1-3450	04/22/15	L23989-02	ACZ	05/04/15	18:38	Chloride	16887-00-6	M300.0 - Ion Chromat	Groundwater	13.2	B	mg/L	5	25	13.2*	13.2	13.2	13.2
GHC15-1		Groundwater Chemistry	GHC15-1-3450	GHC15-1-3450	04/22/15	L23989-02	ACZ	05/04/15	18:38	Fluoride	16984-48-8	M300.0 - Ion Chromat	Groundwater	1.69	B	mg/L	0.5	2.5	1.69*	1.69	1.69	1.69
GHC15-1		Groundwater Chemistry	GHC15-1-3450	GHC15-1-3450	04/22/15	L23989-02	ACZ	05/04/15	18:38	Sulfate	14808-79-8	M300.0 - Ion Chromat	Groundwater	366		mg/L	5	25	366	366	366	366
GHC15-1		Groundwater Chemistry	GHC15-1-3450	GHC15-1-3450	04/22/15	L23989-02	ACZ	05/05/15	03:53	Antimony, dissolved	7440-36-0	M200.8 ICP-MS	Groundwater		U	mg/L	0.0004	0.002	<0.0004	-0.0004	0.0004	0
GHC15-1		Groundwater Chemistry	GHC15-1-3450	GHC15-1-3450	04/22/15	L23989-02	ACZ	05/05/15	03:53	Arsenic, dissolved	7440-38-2	M200.8 ICP-MS	Groundwater	0.0029		mg/L	0.0002	0.001	0.0029	0.0029	0.0029	0.0029
GHC15-1		Groundwater Chemistry	GHC15-1-3450	GHC15-1-3450	04/22/15	L23989-02	ACZ	05/05/15	03:53	Beryllium, dissolved	7440-41-7	M200.8 ICP-MS	Groundwater	0.00823		mg/L	0.00005	0.0003	0.00823	0.00823	0.00823	0.00823
GHC15-1		Groundwater Chemistry	GHC15-1-3450	GHC15-1-3450	04/22/15	L23989-02	ACZ	05/05/15	03:53	Cadmium, dissolved	7440-43-9	M200.8 ICP-MS	Groundwater	0.0005		mg/L	0.0001	0.0005	0.0005	0.0005	0.0005	0.0005
GHC15-1		Groundwater Chemistry	GHC15-1-3450	GHC15-1-3450	04/22/15	L23989-02	ACZ	05/05/15	03:53	Lead, dissolved	7439-92-1	M200.8 ICP-MS	Groundwater	0.0224		mg/L	0.0001	0.0005	0.0224	0.0224	0.0224	0.0224
GHC15-1		Groundwater Chemistry	GHC15-1-3450	GHC15-1-3450	04/22/15	L23989-02	ACZ	05/05/15	03:53	Selenium, dissolved	7782-49-2	M200.8 ICP-MS										

Hole ID	Composite Type	Analysis Type	Sample ID	Sample Number	Sample Date	Lab ID	Lab Name	Date Analyzed	Time Analyzed	Parameter	Cas Number	EPA Method	Matrix	Result	Qual	Units	MDL	PQL	Reported Result	Value	Value (ND)	Value (NDZ)
GHC15-1		Groundwater Chemistry	GHC15-1-3450	GHC15-1-3450	04/22/15	L23989-02	ACZ	05/07/15	09:18	Cation-Anion Balance		Calculation	Groundwater			%			0	0	0	0
GHC15-1		Groundwater Chemistry	GHC15-1-3450	GHC15-1-3450	04/22/15	L23989-02	ACZ	05/07/15	09:18	Sum of Anions		Calculation	Groundwater			meq/L			0	0	0	0
GHC15-1		Groundwater Chemistry	GHC15-1-3450	GHC15-1-3450	04/22/15	L23989-02	ACZ	05/07/15	09:18	Sum of Cations		Calculation	Groundwater			meq/L			0	0	0	0
GHC15-1		Groundwater Chemistry	GHC15-1-3450	GHC15-1-3450	04/22/15	L23989-02	ACZ	05/07/15	09:18	TDS (calculated)		Calculation	Groundwater	987		mg/L			987	987	987	987
GHC15-1		Groundwater Chemistry	GHC15-1-3450	GHC15-1-3450	04/22/15	L23989-02	ACZ	05/07/15	09:18	TDS (ratio - measured/calculated)		Calculation	Groundwater	0.59					0.59	0.59	0.59	0.59
GHC15-1		Groundwater Chemistry	GHC15-1-3735	GHC15-1-3735	04/22/15	L23989-03	ACZ	04/28/15	09:52	Residue, Filterable (TDS) @180C		SM2540C	Groundwater	860		mg/L	100	200	860	860	860	860
GHC15-1		Groundwater Chemistry	GHC15-1-3735	GHC15-1-3735	04/22/15	L23989-03	ACZ	04/30/15	16:36	Aluminum, dissolved	7429-90-5	M200.7 ICP	Groundwater	2.47		mg/L	0.03	0.2	2.47	2.47	2.47	2.47
GHC15-1		Groundwater Chemistry	GHC15-1-3735	GHC15-1-3735	04/22/15	L23989-03	ACZ	04/30/15	16:36	Barium, dissolved	7440-39-3	M200.7 ICP	Groundwater	0.282		mg/L	0.003	0.02	0.282	0.282	0.282	0.282
GHC15-1		Groundwater Chemistry	GHC15-1-3735	GHC15-1-3735	04/22/15	L23989-03	ACZ	04/30/15	16:36	Bismuth, dissolved	7440-69-9	M200.7 ICP	Groundwater		U	mg/L	0.04	0.2	<0.04	-0.04	0.04	0
GHC15-1		Groundwater Chemistry	GHC15-1-3735	GHC15-1-3735	04/22/15	L23989-03	ACZ	04/30/15	16:36	Boron, dissolved	7440-42-8	M200.7 ICP	Groundwater	0.04	B	mg/L	0.01	0.05	0.04*	0.04	0.04	0.04
GHC15-1		Groundwater Chemistry	GHC15-1-3735	GHC15-1-3735	04/22/15	L23989-03	ACZ	04/30/15	16:36	Calcium, dissolved	7440-70-2	M200.7 ICP	Groundwater	76		mg/L	0.1	0.5	76	76	76	76
GHC15-1		Groundwater Chemistry	GHC15-1-3735	GHC15-1-3735	04/22/15	L23989-03	ACZ	04/30/15	16:36	Chromium, dissolved	7440-47-3	M200.7 ICP	Groundwater		U	mg/L	0.01	0.05	<0.01	-0.01	0.01	0
GHC15-1		Groundwater Chemistry	GHC15-1-3735	GHC15-1-3735	04/22/15	L23989-03	ACZ	04/30/15	16:36	Cobalt, dissolved	7440-48-4	M200.7 ICP	Groundwater		U	mg/L	0.01	0.05	<0.01	-0.01	0.01	0
GHC15-1		Groundwater Chemistry	GHC15-1-3735	GHC15-1-3735	04/22/15	L23989-03	ACZ	04/30/15	16:36	Copper, dissolved	7440-50-8	M200.7 ICP	Groundwater		U	mg/L	0.01	0.05	<0.01	-0.01	0.01	0
GHC15-1		Groundwater Chemistry	GHC15-1-3735	GHC15-1-3735	04/22/15	L23989-03	ACZ	04/30/15	16:36	Gallium, dissolved	7440-55-3	M200.7 ICP	Groundwater		U	mg/L	0.1	0.5	<0.1	-0.1	0.1	0
GHC15-1		Groundwater Chemistry	GHC15-1-3735	GHC15-1-3735	04/22/15	L23989-03	ACZ	04/30/15	16:36	Iron, dissolved	7439-89-6	M200.7 ICP	Groundwater	9.07		mg/L	0.02	0.05	9.07	9.07	9.07	9.07
GHC15-1		Groundwater Chemistry	GHC15-1-3735	GHC15-1-3735	04/22/15	L23989-03	ACZ	04/30/15	16:36	Lithium, dissolved	7439-93-2	M200.7 ICP	Groundwater	0.025	B	mg/L	0.008	0.04	0.025*	0.025	0.025	0.025
GHC15-1		Groundwater Chemistry	GHC15-1-3735	GHC15-1-3735	04/22/15	L23989-03	ACZ	04/30/15	16:36	Magnesium, dissolved	7439-95-4	M200.7 ICP	Groundwater	8.5		mg/L	0.2	1	8.5	8.5	8.5	8.5
GHC15-1		Groundwater Chemistry	GHC15-1-3735	GHC15-1-3735	04/22/15	L23989-03	ACZ	04/30/15	16:36	Manganese, dissolved	7439-96-5	M200.7 ICP	Groundwater	0.553		mg/L	0.005	0.03	0.553	0.553	0.553	0.553
GHC15-1		Groundwater Chemistry	GHC15-1-3735	GHC15-1-3735	04/22/15	L23989-03	ACZ	04/30/15	16:36	Molybdenum, dissolved	7439-98-7	M200.7 ICP	Groundwater	0.12		mg/L	0.02	0.1	0.12	0.12	0.12	0.12
GHC15-1		Groundwater Chemistry	GHC15-1-3735	GHC15-1-3735	04/22/15	L23989-03	ACZ	04/30/15	16:36	Nickel, dissolved	7440-02-0	M200.7 ICP	Groundwater		U	mg/L	0.008	0.04	<0.008	-0.008	0.008	0
GHC15-1		Groundwater Chemistry	GHC15-1-3735	GHC15-1-3735	04/22/15	L23989-03	ACZ	04/30/15	16:36	Potassium, dissolved	7440-09-7	M200.7 ICP	Groundwater	4.3		mg/L	0.2	1	4.3	4.3	4.3	4.3
GHC15-1		Groundwater Chemistry	GHC15-1-3735	GHC15-1-3735	04/22/15	L23989-03	ACZ	04/30/15	16:36	Scandium, dissolved	7440-20-2	M200.7 ICP	Groundwater		U	mg/L	0.1	0.5	<0.1	-0.1	0.1	0
GHC15-1		Groundwater Chemistry	GHC15-1-3735	GHC15-1-3735	04/22/15	L23989-03	ACZ	04/30/15	16:36	Silver, dissolved	7440-22-4	M200.7 ICP	Groundwater		U	mg/L	0.01	0.03	<0.01	-0.01	0.01	0
GHC15-1		Groundwater Chemistry	GHC15-1-3735	GHC15-1-3735	04/22/15	L23989-03	ACZ	04/30/15	16:36	Sodium, dissolved	7440-23-5	M200.7 ICP	Groundwater	283		mg/L	0.2	1	283	283	283	283
GHC15-1		Groundwater Chemistry	GHC15-1-3735	GHC15-1-3735	04/22/15	L23989-03	ACZ	04/30/15	16:36	Strontium, dissolved	7440-24-6	M200.7 ICP	Groundwater	1.79		mg/L	0.005	0.03	1.79	1.79	1.79	1.79
GHC15-1		Groundwater Chemistry	GHC15-1-3735	GHC15-1-3735	04/22/15	L23989-03	ACZ	04/30/15	16:36	Tin, dissolved	7440-31-5	M200.7 ICP	Groundwater		U	mg/L	0.04	0.2	<0.04	-0.04	0.04	0
GHC15-1		Groundwater Chemistry	GHC15-1-3735	GHC15-1-3735	04/22/15	L23989-03	ACZ	04/30/15	16:36	Titanium, dissolved	7440-32-6	M200.7 ICP	Groundwater	0.032		mg/L	0.005	0.03	0.032	0.032	0.032	0.032
GHC15-1		Groundwater Chemistry	GHC15-1-3735	GHC15-1-3735	04/22/15	L23989-03	ACZ	04/30/15	16:36	Vanadium, dissolved	7440-62-2	M200.7 ICP	Groundwater		U	mg/L	0.005	0.03	<0.005	-0.005	0.005	0
GHC15-1		Groundwater Chemistry	GHC15-1-3735	GHC15-1-3735	04/22/15	L23989-03	ACZ	04/30/15	16:36	Zinc, dissolved	7440-66-6	M200.7 ICP	Groundwater	0.07		mg/L	0.01	0.05	0.07	0.07	0.07	0.07
GHC15-1		Groundwater Chemistry	GHC15-1-3735	GHC15-1-3735	04/22/15	L23989-03	ACZ	05/04/15	12:38	Mercury, dissolved	7439-97-6	M245.1 CVAA	Groundwater		U	mg/L	0.0002	0.001	<0.0002	-0.0002	0.0002	0
GHC15-1		Groundwater Chemistry	GHC15-1-3735	GHC15-1-3735	04/22/15	L23989-03	ACZ	05/04/15	18:55	Chloride	16887-00-6	M300.0 - Ion Chromat	Groundwater	13	B	mg/L	5	25	13*	13	13	13
GHC15-1		Groundwater Chemistry	GHC15-1-3735	GHC15-1-3735	04/22/15	L23989-03	ACZ	05/04/15	18:55	Fluoride	16984-48-8	M300.0 - Ion Chromat	Groundwater	1.6	B	mg/L	0.5	2.5	1.6*	1.6	1.6	1.6
GHC15-1		Groundwater Chemistry	GHC15-1-3735	GHC15-1-3735	04/22/15	L23989-03	ACZ	05/04/15	18:55	Sulfate	14808-79-8	M300.0 - Ion Chromat	Groundwater	493		mg/L	5	25	493	493	493	493
GHC15-1		Groundwater Chemistry	GHC15-1-3735	GHC15-1-3735	04/22/15	L23989-03	ACZ	05/05/15	03:56	Antimony, dissolved	7440-36-0	M200.8 ICP-MS	Groundwater	0.0007	B	mg/L	0.0004	0.002	0.0007*	0.0007	0.0007	0.0007
GHC15-1		Groundwater Chemistry	GHC15-1-3735	GHC15-1-3735	04/22/15	L23989-03	ACZ	05/05/15	03:56	Arsenic, dissolved	7440-38-2	M200.8 ICP-MS	Groundwater	0.0024		mg/L	0.0002	0.001	0.0024	0.0024	0.0024	0.0024
GHC15-1		Groundwater Chemistry	GHC15-1-3735	GHC15-1-3735	04/22/15	L23989-03	ACZ	05/05/15	03:56	Beryllium, dissolved	7440-41-7	M200.8 ICP-MS	Groundwater	0.00492		mg/L	0.00005	0.0003	0.00492	0.00492	0.00492	0.00492
GHC15-1		Groundwater Chemistry	GHC15-1-3735	GHC15-1-3735	04/22/15	L23989-03	ACZ	05/05/15	03:56	Cadmium, dissolved	7440-43-9	M200.8 ICP-MS	Groundwater	0.0005		mg/L	0.0001	0.0005	0.0005	0.0005	0.0005	0.0005
GHC15-1		Groundwater Chemistry	GHC15-1-3735	GHC15-1-3735	04/22/15	L23989-03	ACZ	05/05/15	03:56	Lead, dissolved	7439-92-1	M200.8 ICP-MS	Groundwater	0.0208		mg/L	0.0001	0.0005	0.0208	0.0208	0.0208	0.0208
GHC15-1		Groundwater Chemistry	GHC15-1-3735	GHC15-1-3735	04/22/15	L23989-03	ACZ	05/05/15	03:56	Selenium, dissolved	7782-49-2	M200.8 ICP-MS	Groundwater	0.0009		mg/L	0.0001	0.0003	0.0009	0.0009	0.0009	0.0009
GHC15-1		Groundwater Chemistry	GHC15-1-3735	GHC15-1-3735	04/22/15	L23989-03	ACZ	05/05/15	03:56	Thallium, dissolved	7440-28-0	M200.8 ICP-MS	Groundwater		U	mg/L	0.0001	0.0005	<0.0001	-0.0001	0.0001	0
GHC15-1		Groundwater Chemistry	GHC15-1-3735	GHC15-1-3735	04/22/15	L23989-03	ACZ	05/06/15	11:30	pH		SM4500H+ B	Groundwater	7.9	H	units	0.1	0.1	7.9	7.9	7.9	7.9
GHC15-1		Groundwater Chemistry	GHC15-1-3735	GHC15-1-3735	04/22/15	L23989-03	ACZ	05/06/15	11:30	pH measured at		SM4500H+ B	Groundwater	20.5		C	0.1	0.1	20.5	20.5	20.5	20.5
GHC15-1		Groundwater Chemistry	GHC15-1-3735	GHC15-1-3735	04/22/15	L23989-03	ACZ	05/06/15	11:45	Bicarbonate as CaCO3	10139	SM2320B - Titration	Groundwater	346		mg/L	3	20	346	346	346	346
GHC15-1		Groundwater Chemistry	GHC15-1-3735	GHC15-1-3735	04/22/15	L23989-03	ACZ	05/06/15	11:45	Carbonate as CaCO3		SM2320B - Titration	Groundwater		U	mg/L	3	20	<3	-3	3	0
GHC15-1		Groundwater Chemistry	GHC15-1-3735	GHC15-1-3735	04/22/15	L23989-03	ACZ	05/06/15	11:45	Hydroxide as CaCO3		SM2320B - Titration	Groundwater		U	mg/L	3	20	<3	-3	3	0
GHC15-1		Groundwater Chemistry	GHC15-1-3735	GHC15-1-3735	04/22/15	L23989-03	ACZ	05/06/15	11:45	Total Alkalinity	10093	SM2320B - Titration	Groundwater	346		mg/L	3	20	346	346	346	346
GHC15-1		Groundwater Chemistry	GHC15-1-3735	GHC15-1-3735	04/22/15	L23989-03	ACZ	05/07/15	09:19	Cation-Anion Balance		Calculation	Groundwater			%			0	0	0	0
GHC15-1		Groundwater Chemistry	GHC15-1-3735	GHC15-1-3735	04/22/15	L23989-03	ACZ	05/07/15	09:19	Sum of Anions		Calculation	Groundwater			meq/L			0	0	0	0
GHC15-1		Groundwater Chemistry	GHC15-1-3735	GHC15-1-3735	04/22/15	L23989-03	ACZ	05/07/15	09:19	Sum of Cations		Calculation	Groundwater			meq/L			0	0	0	0
GHC15-1		Groundwater Chemistry	GHC15-1-3735	GHC15-1-3735	04/22/15	L23989-03	ACZ	05/07/15	09:19	TDS (calculated)		Calculation	Groundwater	1100		mg/L			1100	1100	1100	1100
GHC15-1		Groundwater Chemistry	GHC15-1-3735	GHC15-1-3735	04/22/15	L23989-03	ACZ	05/07/15	09:19	TDS (ratio - measured/calculated)		Calculation	Groundwater	0.78					0.78	0.78	0.78	0.78
GHC15-1		Groundwater Chemistry	GHC15-1-WATER TRUCK	GHC15-1-WT	04/22/15	L23989-04	ACZ	04/28/15	09:54	Residue, Filterable (TDS) @180C		SM2540C	Groundwater	62		mg/L	10	20	62	62	62	62
GHC15-1		Groundwater Chemistry	GHC15-1-WATER TRUCK	GHC15-1-WT	04/22/15	L23989-04	ACZ	04/30/15	16:39	Aluminum, dissolved	7429-90-5	M200.7 ICP	Groundwater	0.06	B	mg/L	0.03	0.2	0.06*	0.06	0.06	0.06
GHC15-1		Groundwater Chemistry	GHC15-1-WATER TRUCK	GHC15-1-WT	04/22/15	L23989-04	ACZ	04/30/15	16:39	Barium, dissolved	7440-39-3	M200.7 ICP	Groundwater	0.033		mg/L	0.003	0.02	0.033	0.033		

Hole ID	Composite Type	Analysis Type	Sample ID	Sample Number	Sample Date	Lab ID	Lab Name	Date Analyzed	Time Analyzed	Parameter	Cas Number	EPA Method	Matrix	Result	Qual	Units	MDL	PQL	Reported Result	Value	Value (ND)	Value (NDZ)
GHC15-1		Groundwater Chemistry	GHC15-1-WATER TRUCK	GHC15-1-WT	04/22/15	L23989-04	ACZ	04/30/15	16:39	Gallium, dissolved	7440-55-3	M200.7 ICP	Groundwater		U	mg/L	0.1	0.5	<0.1	-0.1	0.1	0
GHC15-1		Groundwater Chemistry	GHC15-1-WATER TRUCK	GHC15-1-WT	04/22/15	L23989-04	ACZ	04/30/15	16:39	Iron, dissolved	7439-89-6	M200.7 ICP	Groundwater	0.66		mg/L	0.02	0.05	0.66	0.66	0.66	0.66
GHC15-1		Groundwater Chemistry	GHC15-1-WATER TRUCK	GHC15-1-WT	04/22/15	L23989-04	ACZ	04/30/15	16:39	Lithium, dissolved	7439-93-2	M200.7 ICP	Groundwater		U	mg/L	0.008	0.04	<0.008	-0.008	0.008	0
GHC15-1		Groundwater Chemistry	GHC15-1-WATER TRUCK	GHC15-1-WT	04/22/15	L23989-04	ACZ	04/30/15	16:39	Magnesium, dissolved	7439-95-4	M200.7 ICP	Groundwater	1.6		mg/L	0.2	1	1.6	1.6	1.6	1.6
GHC15-1		Groundwater Chemistry	GHC15-1-WATER TRUCK	GHC15-1-WT	04/22/15	L23989-04	ACZ	04/30/15	16:39	Manganese, dissolved	7439-96-5	M200.7 ICP	Groundwater	0.06		mg/L	0.005	0.03	0.06	0.06	0.06	0.06
GHC15-1		Groundwater Chemistry	GHC15-1-WATER TRUCK	GHC15-1-WT	04/22/15	L23989-04	ACZ	04/30/15	16:39	Molybdenum, dissolved	7439-98-7	M200.7 ICP	Groundwater		U	mg/L	0.02	0.1	<0.02	-0.02	0.02	0
GHC15-1		Groundwater Chemistry	GHC15-1-WATER TRUCK	GHC15-1-WT	04/22/15	L23989-04	ACZ	04/30/15	16:39	Nickel, dissolved	7440-02-0	M200.7 ICP	Groundwater		U	mg/L	0.008	0.04	<0.008	-0.008	0.008	0
GHC15-1		Groundwater Chemistry	GHC15-1-WATER TRUCK	GHC15-1-WT	04/22/15	L23989-04	ACZ	04/30/15	16:39	Potassium, dissolved	7440-09-7	M200.7 ICP	Groundwater	1.4		mg/L	0.2	1	1.4	1.4	1.4	1.4
GHC15-1		Groundwater Chemistry	GHC15-1-WATER TRUCK	GHC15-1-WT	04/22/15	L23989-04	ACZ	04/30/15	16:39	Scandium, dissolved	7440-20-2	M200.7 ICP	Groundwater		U	mg/L	0.1	0.5	<0.1	-0.1	0.1	0
GHC15-1		Groundwater Chemistry	GHC15-1-WATER TRUCK	GHC15-1-WT	04/22/15	L23989-04	ACZ	04/30/15	16:39	Silver, dissolved	7440-22-4	M200.7 ICP	Groundwater		U	mg/L	0.01	0.03	<0.01	-0.01	0.01	0
GHC15-1		Groundwater Chemistry	GHC15-1-WATER TRUCK	GHC15-1-WT	04/22/15	L23989-04	ACZ	04/30/15	16:39	Sodium, dissolved	7440-23-5	M200.7 ICP	Groundwater	4.4		mg/L	0.2	1	4.4	4.4	4.4	4.4
GHC15-1		Groundwater Chemistry	GHC15-1-WATER TRUCK	GHC15-1-WT	04/22/15	L23989-04	ACZ	04/30/15	16:39	Strontium, dissolved	7440-24-6	M200.7 ICP	Groundwater	0.044		mg/L	0.005	0.03	0.044	0.044	0.044	0.044
GHC15-1		Groundwater Chemistry	GHC15-1-WATER TRUCK	GHC15-1-WT	04/22/15	L23989-04	ACZ	04/30/15	16:39	Tin, dissolved	7440-31-5	M200.7 ICP	Groundwater		U	mg/L	0.04	0.2	<0.04	-0.04	0.04	0
GHC15-1		Groundwater Chemistry	GHC15-1-WATER TRUCK	GHC15-1-WT	04/22/15	L23989-04	ACZ	04/30/15	16:39	Titanium, dissolved	7440-32-6	M200.7 ICP	Groundwater		U	mg/L	0.005	0.03	<0.005	-0.005	0.005	0
GHC15-1		Groundwater Chemistry	GHC15-1-WATER TRUCK	GHC15-1-WT	04/22/15	L23989-04	ACZ	04/30/15	16:39	Vanadium, dissolved	7440-62-2	M200.7 ICP	Groundwater		U	mg/L	0.005	0.03	<0.005	-0.005	0.005	0
GHC15-1		Groundwater Chemistry	GHC15-1-WATER TRUCK	GHC15-1-WT	04/22/15	L23989-04	ACZ	04/30/15	16:39	Zinc, dissolved	7440-66-6	M200.7 ICP	Groundwater	0.05		mg/L	0.01	0.05	0.05	0.05	0.05	0.05
GHC15-1		Groundwater Chemistry	GHC15-1-WATER TRUCK	GHC15-1-WT	04/22/15	L23989-04	ACZ	04/30/15	21:37	Bicarbonate as CaCO3	10139	SM2320B - Titration	Groundwater	9.7	B	mg/L	2	20	9.7*	9.7	9.7	9.7
GHC15-1		Groundwater Chemistry	GHC15-1-WATER TRUCK	GHC15-1-WT	04/22/15	L23989-04	ACZ	04/30/15	21:37	Carbonate as CaCO3		SM2320B - Titration	Groundwater		U	mg/L	2	20	<2	-2	2	0
GHC15-1		Groundwater Chemistry	GHC15-1-WATER TRUCK	GHC15-1-WT	04/22/15	L23989-04	ACZ	04/30/15	21:37	Hydroxide as CaCO3		SM2320B - Titration	Groundwater		U	mg/L	2	20	<2	-2	2	0
GHC15-1		Groundwater Chemistry	GHC15-1-WATER TRUCK	GHC15-1-WT	04/22/15	L23989-04	ACZ	04/30/15	21:37	Total Alkalinity	10093	SM2320B - Titration	Groundwater	9.7	B	mg/L	2	20	9.7*	9.7	9.7	9.7
GHC15-1		Groundwater Chemistry	GHC15-1-WATER TRUCK	GHC15-1-WT	04/22/15	L23989-04	ACZ	05/04/15	12:41	Mercury, dissolved	7439-97-6	M245.1 CVAA	Groundwater		U	mg/L	0.0002	0.001	<0.0002	-0.0002	0.0002	0
GHC15-1		Groundwater Chemistry	GHC15-1-WATER TRUCK	GHC15-1-WT	04/22/15	L23989-04	ACZ	05/04/15	18:33	pH		SM4500H+ B	Groundwater	7.7	H	units	0.1	0.1	7.7	7.7	7.7	7.7
GHC15-1		Groundwater Chemistry	GHC15-1-WATER TRUCK	GHC15-1-WT	04/22/15	L23989-04	ACZ	05/04/15	18:33	pH measured at		SM4500H+ B	Groundwater	20.3		C	0.1	0.1	20.3	20.3	20.3	20.3
GHC15-1		Groundwater Chemistry	GHC15-1-WATER TRUCK	GHC15-1-WT	04/22/15	L23989-04	ACZ	05/04/15	19:31	Chloride	16887-00-6	M300.0 - Ion Chromat	Groundwater	5.94		mg/L	0.5	2.5	5.94	5.94	5.94	5.94
GHC15-1		Groundwater Chemistry	GHC15-1-WATER TRUCK	GHC15-1-WT	04/22/15	L23989-04	ACZ	05/04/15	19:31	Fluoride	16984-48-8	M300.0 - Ion Chromat	Groundwater	1.91		mg/L	0.05	0.25	1.91	1.91	1.91	1.91
GHC15-1		Groundwater Chemistry	GHC15-1-WATER TRUCK	GHC15-1-WT	04/22/15	L23989-04	ACZ	05/04/15	19:31	Sulfate	14808-79-8	M300.0 - Ion Chromat	Groundwater	17.1		mg/L	0.5	2.5	17.1	17.1	17.1	17.1
GHC15-1		Groundwater Chemistry	GHC15-1-WATER TRUCK	GHC15-1-WT	04/22/15	L23989-04	ACZ	05/05/15	03:59	Antimony, dissolved	7440-36-0	M200.8 ICP-MS	Groundwater		U	mg/L	0.0004	0.002	<0.0004	-0.0004	0.0004	0
GHC15-1		Groundwater Chemistry	GHC15-1-WATER TRUCK	GHC15-1-WT	04/22/15	L23989-04	ACZ	05/05/15	03:59	Arsenic, dissolved	7440-38-2	M200.8 ICP-MS	Groundwater	0.0002	B	mg/L	0.0002	0.001	0.0002*	0.0002	0.0002	0.0002
GHC15-1		Groundwater Chemistry	GHC15-1-WATER TRUCK	GHC15-1-WT	04/22/15	L23989-04	ACZ	05/05/15	03:59	Beryllium, dissolved	7440-41-7	M200.8 ICP-MS	Groundwater	0.00028	B	mg/L	0.00005	0.0003	0.00028*	0.00028	0.00028	0.00028
GHC15-1		Groundwater Chemistry	GHC15-1-WATER TRUCK	GHC15-1-WT	04/22/15	L23989-04	ACZ	05/05/15	03:59	Cadmium, dissolved	7440-43-9	M200.8 ICP-MS	Groundwater		U	mg/L	0.0001	0.0005	<0.0001	-0.0001	0.0001	0
GHC15-1		Groundwater Chemistry	GHC15-1-WATER TRUCK	GHC15-1-WT	04/22/15	L23989-04	ACZ	05/05/15	03:59	Lead, dissolved	7439-92-1	M200.8 ICP-MS	Groundwater	0.0006		mg/L	0.0001	0.0005	0.0006	0.0006	0.0006	0.0006
GHC15-1		Groundwater Chemistry	GHC15-1-WATER TRUCK	GHC15-1-WT	04/22/15	L23989-04	ACZ	05/05/15	03:59	Selenium, dissolved	7782-49-2	M200.8 ICP-MS	Groundwater	0.0001	B	mg/L	0.0001	0.0003	0.0001*	0.0001	0.0001	0.0001
GHC15-1		Groundwater Chemistry	GHC15-1-WATER TRUCK	GHC15-1-WT	04/22/15	L23989-04	ACZ	05/05/15	03:59	Thallium, dissolved	7440-28-0	M200.8 ICP-MS	Groundwater		U	mg/L	0.0001	0.0005	<0.0001	-0.0001	0.0001	0
GHC15-1		Groundwater Chemistry	GHC15-1-WATER TRUCK	GHC15-1-WT	04/22/15	L23989-04	ACZ	05/07/15	09:19	Cation-Anion Balance		Calculation	Groundwater			%			0	0	0	0
GHC15-1		Groundwater Chemistry	GHC15-1-WATER TRUCK	GHC15-1-WT	04/22/15	L23989-04	ACZ	05/07/15	09:19	Sum of Anions		Calculation	Groundwater			meq/L			0	0	0	0
GHC15-1		Groundwater Chemistry	GHC15-1-WATER TRUCK	GHC15-1-WT	04/22/15	L23989-04	ACZ	05/07/15	09:19	Sum of Cations		Calculation	Groundwater			meq/L			0	0	0	0
GHC15-1		Groundwater Chemistry	GHC15-1-WATER TRUCK	GHC15-1-WT	04/22/15	L23989-04	ACZ	05/07/15	09:19	TDS (calculated)		Calculation	Groundwater	47.6		mg/L			47.6	47.6	47.6	47.6
GHC15-1		Groundwater Chemistry	GHC15-1-WATER TRUCK	GHC15-1-WT	04/22/15	L23989-04	ACZ	05/07/15	09:19	TDS (ratio - measured/calculated)		Calculation	Groundwater	1.3					1.3	1.3	1.3	1.3
GHC15-1		Isotope	GHC15-1-3735	GHC15-1-3735	4/22/2015	31635	IT2			δ18O H2O			Groundwater	-12.78					-12.78	-12.78	-12.78	-12.78
GHC15-1		Isotope	GHC15-1-3735	GHC15-1-3735	4/22/2015	31635	IT2			δ2H H2O			Groundwater	-96					-96	-96	-96	-96
GHC15-1		Isotope	GHC15-1-3735	GHC15-1-3735	4/22/2015	31635	IT2			δ18O SO4			Groundwater	10.4					10.4	10.4	10.4	10.4
GHC15-1		Isotope	GHC15-1-3735	GHC15-1-3735	4/22/2015	31635	IT2			δ34S SO4			Groundwater	9					9	9	9	9
GHC15-1		Isotope	GHC15-1-3735	GHC15-1-3735	4/22/2015	31635	IT2			δ13C DIC			Groundwater	-7.7					-7.7	-7.7	-7.7	-7.7
CPC14-3		Isotope	1ST PRODUCED WATER	1ST PRODUCED WATER C	2/13/2015	29982	IT2			δ18O H2O			Groundwater	-9.44					-9.44	-9.44	-9.44	-9.44
CPC14-3		Isotope	1ST PRODUCED WATER	1ST PRODUCED WATER C	2/13/2015	29982	IT2			δ2H H2O			Groundwater	-72.2					-72.2	-72.2	-72.2	-72.2
CPC14-3		Isotope	1ST PRODUCED WATER	1ST PRODUCED WATER C	2/13/2015	29982	IT2			δ18O SO4			Groundwater	3.8					3.8	3.8	3.8	3.8
CPC14-3		Isotope	1ST PRODUCED WATER	1ST PRODUCED WATER C	2/13/2015	29982	IT2			δ34S SO4			Groundwater	6.1					6.1	6.1	6.1	6.1
CPC14-3		Isotope	1ST PRODUCED WATER	1ST PRODUCED WATER C	2/13/2015	29982	IT2			δ13C DIC			Groundwater	-14.99202					-14.99202	-14.99202	-14.99202	-14.99202
CPC14-3		Isotope	WATER TRUCK	CPC14-3 WATER TRUCK	2/14/2015	29983	IT2			δ18O H2O			Groundwater	-11.93					-11.93	-11.93	-11.93	-11.93
CPC14-3		Isotope	WATER TRUCK	CPC14-3 WATER TRUCK	2/14/2015	29983	IT2			δ2H H2O			Groundwater	-88.8					-88.8	-88.8	-88.8	-88.8
CPC14-3		Isotope	WATER TRUCK	CPC14-3 WATER TRUCK	2/14/2015	29983	IT2			δ18O SO4			Groundwater	3.8					3.8	3.8	3.8	3.8
CPC14-3		Isotope	WATER TRUCK	CPC14-3 WATER TRUCK	2/14/2015	29983	IT2			δ34S SO4			Groundwater	6.7					6.7	6.7	6.7	6.7
CPC14-3		Isotope	WATER TRUCK	CPC14-3 WATER TRUCK	2/14/2015	29983	IT2			δ13C DIC			Groundwater	10.38417					10.38417	10.38417	10.38417	10.38417
CPC14-3		Isotope	PRODUCED WATER	PRODUCED WATER CPC14	2/14/2015	29984	IT2			δ18O H2O			Groundwater	-11.38					-11.38	-11.38	-11.38	-11.38
CPC14-3		Isotope	PRODUCED WATER	PRODUCED WATER CPC14	2/14/2015	29984	IT2			δ2H H2O			Groundwater	-85.3					-85.3	-85.3	-85.3	-85.3
CPC14-3		Isotope	PRODUCED WATER	PRODUCED WATER CPC14	2/14/2015	29984	IT2			δ18O SO4			Groundwater	7.7					7.7	7.7	7.7	7.7
CPC14-3		Isotope	PRODUCED WATER	PRODUCED WATER CPC14	2/14/2015	29984	IT2			δ34S SO4			Groundwater	8.9					8.9	8.9	8.9	8.9
CPC14-3		Isotope	PRODUCED WATER	PRODUCED WATER CPC14	2/14/2015	29984	IT2			δ13C DIC			Groundwater	-11.9718					-11.9718	-11.9718	-11.9718	-11.9718
CPC14-3		Isotope	PRODUCED WATER	PRODUCED WATER CPC14	2/14/2015	29985	IT2			δ18O H2O			Groundwater	-11.39					-11.39	-11.39	-11.39	-11.39
CPC14-3		Isotope	PRODUCED WATER	PRODUCED WATER CPC14	2/14/2015	29985	IT2			δ2H H2O												

Hole ID	Composite Type	Analysis Type	Sample ID	Sample Number	Sample Date	Lab ID	Lab Name	Date Analyzed	Time Analyzed	Parameter	Cas Number	EPA Method	Matrix	Result	Qual	Units	MDL	PQL	Reported Result	Value	Value (NDD)	Value (NDZ)
CPC14-3		Isotope	PRODUCED WATER	PRODUCED WATER CPC14	2/14/2015	29985	IT2			$\delta^{34}\text{S SO}_4$			Groundwater	8.6					8.6	8.6	8.6	8.6
CPC14-3		Isotope	PRODUCED WATER	PRODUCED WATER CPC14	2/14/2015	29985	IT2			$\delta^{13}\text{C DIC}$			Groundwater	-14.30114					-14.30114	-14.30114	-14.30114	-14.30114

APPENDIX 4

GHC15-1 - WATER CHEMISTRY

Appendix 4.1:GHC15-1 Groundwater Chemistry

Sample Groundwater Chemistry	Units	GHC15-1-3025		GHC15-1-3433		GHC15-1-3433 DUP		GHC15-1-3450		GHC15-1-3735		GHC15-1-WT	
		Value	MDL	Value	MDL	Value	MDL	Value	MDL	Value	MDL	Value	MDL
pH	s.u.	8.1	0.1	7	0.1	7	0.1	8.3	0.1	7.9	0.1	7.7	0.1
TDS (Residue, Filterable @180C)	#N/A	720	100	1200	100	1400	100	580	100	860	100	62	10
TDS (calculated)	mg/L	933		1710		1710		987		1100		47.6	
TDS (ratio - measured/calculated)	--	0.77		0.7		0.82		0.59		0.78		1.3	
Total Alkalinity	mg/L	370	3	675	3	677	3	370	3	346	3	9.7	2
Carbonate as CaCO3	mg/L	3	3	3	3	3	3	8	3	3	3	2	2
Bicarbonate as CaCO3	mg/L	370	3	675	3	677	3	362	3	346	3	9.7	2
Hydroxide as CaCO3	mg/L	3	3	3	3	3	3	3	3	3	3	2	2
Anions													
Chloride	mg/L	17.9	5	27.9	5	26.8	5	13.2	5	13	5	5.94	0.5
Fluoride	mg/L	1.66	0.5	0.85	0.5	0.86	0.5	1.69	0.5	1.6	0.5	1.91	0.05
Sulfate	mg/L	373	5	790	5	786	5	366	5	493	5	17.1	0.5
Cations													
Calcium, dissolved	mg/L	29.5	0.1	141	0.1	136	0.1	62.6	0.1	76	0.1	8.5	0.1
Potassium, dissolved	mg/L	4.2	0.2	4.4	0.2	4.4	0.2	4.3	0.2	4.3	0.2	1.4	0.2
Metals													
Aluminum, dissolved	mg/L	1.53	0.03	0.11	0.03	0.07	0.03	2.54	0.03	2.47	0.03	0.06	0.03
Antimony, dissolved	mg/L	0.0011	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004	0.0007	0.0004	0.0004	0.0004
Arsenic, dissolved	mg/L	0.0014	0.0002	0.0003	0.0002	0.0003	0.0002	0.0029	0.0002	0.0024	0.0002	0.0002	0.0002
Barium, dissolved	mg/L	0.218	0.003	0.117	0.003	0.115	0.003	0.298	0.003	0.282	0.003	0.033	0.003
Beryllium, dissolved	mg/L	0.00176	0.00005	0.00005	0.00005	0.00005	0.00005	0.00823	0.00005	0.00492	0.00005	0.00028	0.00005
Bismuth, dissolved	mg/L	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Boron, dissolved	mg/L	0.04	0.01	0.14	0.01	0.15	0.01	0.04	0.01	0.04	0.01	0.01	0.01
Cadmium, dissolved	mg/L	0.0004	0.0001	0.0001	0.0001	0.0001	0.0001	0.0005	0.0001	0.0005	0.0001	0.0001	0.0001
Chromium, dissolved	mg/L	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Cobalt, dissolved	mg/L	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Copper, dissolved	mg/L	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Gallium, dissolved	mg/L	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Iron, dissolved	mg/L	6.77	0.02	1.15	0.02	2.75	0.02	10.5	0.02	9.07	0.02	0.66	0.02
Lead, dissolved	mg/L	0.0154	0.0001	0.0068	0.0001	0.0068	0.0001	0.0224	0.0001	0.0208	0.0001	0.0006	0.0001
Lithium, dissolved	mg/L	0.018	0.008	0.062	0.008	0.064	0.008	0.027	0.008	0.025	0.008	0.008	0.008
Magnesium, dissolved	mg/L	4.7	0.2	20.6	0.2	20.3	0.2	9.8	0.2	8.5	0.2	1.6	0.2
Manganese, dissolved	mg/L	0.174	0.005	1.12	0.005	1.09	0.005	0.744	0.005	0.553	0.005	0.06	0.005
Mercury, dissolved	mg/L	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
Molybdenum, dissolved	mg/L	0.21	0.02	0.12	0.02	0.13	0.02	0.07	0.02	0.12	0.02	0.02	0.02
Nickel, dissolved	mg/L	0.008	0.008	0.019	0.008	0.022	0.008	0.008	0.008	0.008	0.008	0.008	0.008
Scandium, dissolved	mg/L	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Selenium, dissolved	mg/L	0.0008	0.0001	0.0006	0.0001	0.0006	0.0001	0.0008	0.0001	0.0009	0.0001	0.0001	0.0001
Silver, dissolved	mg/L	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Sodium, dissolved	mg/L	267	0.2	312	0.2	313	0.2	288	0.2	283	0.2	4.4	0.2
Strontium, dissolved	mg/L	0.953	0.005	2.56	0.005	2.46	0.005	1.87	0.005	1.79	0.005	0.044	0.005
Thallium, dissolved	mg/L	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Tin, dissolved	mg/L	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Titanium, dissolved	mg/L	0.022	0.005	0.005	0.005	0.005	0.005	0.013	0.005	0.032	0.005	0.005	0.005
Vanadium, dissolved	mg/L	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Zinc, dissolved	mg/L	0.12	0.01	0.01	0.01	0.01	0.01	0.12	0.01	0.07	0.01	0.05	0.01