

**CAMECO RESOURCES  
CROW BUTTE OPERATION**



**86 Crow Butte Road  
P.O. Box 169  
Crawford, Nebraska 69339-0169**

**(308) 665-2215  
(308) 665-2341 – FAX**

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October 7, 2021

USPS PRIORITY MAIL  
SIGNATURE CONFIRMATION

Sue Dempsey, Drinking Water and Groundwater Division Administrator  
Nebraska Department of Environment and Energy  
P.O. Box 98922  
Lincoln, NE 68509-8922

Class III UIC Permit NE0122611  
September 2021 Monthly Restoration Report

Dear Ms. Dempsey:

Please find enclosed the September 2021 Monthly Restoration Reports for Mine Units 2, 3, 4, 5, 6, 7 and 8. The reverse osmosis (RO) units continue to inject permeate and reductant into Mine Units 2, 4, 6, 7, and 8.

Mine Unit 3 and 5 remained in stability monitoring.

If you have any questions regarding this submittal, please feel free to contact me at (308) 665-2215, ext. 117.

Sincerely,  
Cameco Resources  
Crow Butte Operation

Walter D. Nelson  
SHEQ Coordinator

Enclosures: As Stated

cc: Ron Burrows – NRC  
CBO - File  
cc: CR – Electronic File  
Kory Winters – NDEE Field Office  
Amanda Jones – NDEE Program Coordinator

CROW BUTTE MINE  
MONTHLY RESTORATION REPORT

September 2021

MINE UNIT 2

1. RESTORATION ACTIVITY DURING MONTH:

	YES	NO	
a. Groundwater Transfer		X	(if yes, complete part 2)
b. Groundwater Sweep		X	(if yes, complete part 3)
c. Groundwater Treatment		X	
d. Wellfield Recirculation		X	
e. Other (explain):			

2. LIST WELLS USED IN GROUNDWATER TRANSFER DURING THE MONTH:

3. LIST WELLS USED IN GROUNDWATER SWEEP DURING THE MONTH:

4. LIST WELLS SAMPLED DURING MONTH AND ASSAY RESULTS:

CM1-6, P94, P97, PR8, PR15, I113P, I136P, I137P, I142P, I144P, I171P, I175P, I180P, I188P.

**Mine Unit 2 Restoration Data**

Well ID	Date	Alk	Ca	Cl	Mg	Na	SO4	Cond	pH	TDS	Fe	U	V
CM1-6	9/28/2021	191	4.22	49	0.70	160	78	722	8.57	448	0.05	0.31	0.04
I113P	9/28/2021	241	7.58	46	0.95	182	95	826	8.48	512	0.02	0.90	0.08
I136P	9/28/2021	235	7.94	50	1.46	190	119	876	8.18	543	0.03	0.19	0.05
I137P	9/28/2021	247	6.08	70	1.15	216	135	995	8.02	617	0.03	1.72	0.04
I142P	9/28/2021	199	6.34	42	1.30	170	106	771	7.48	478	0.29	0.04	0.04
I144P	9/28/2021	222	5.60	45	0.92	178	96	811	8.42	503	0.02	0.28	0.03
I171P	9/28/2021	195	6.21	56	1.06	170	104	793	8.53	492	0.02	0.35	0.04
I175P	9/28/2021	229	5.07	65	1.23	207	131	950	8.16	589	0.01	2.05	0.10
I180P	9/28/2021	201	3.35	58	0.54	184	111	830	8.22	515	0.03	0.99	0.11
I188P	9/28/2021	289	16.97	118	3.67	284	206	1388	8.24	861	0.01	1.15	0.09
P94	9/28/2021	189	12.10	47	0.72	161	105	753	8.13	467	0.04	0.26	0.03
P97	9/28/2021	296	10.08	94	2.39	259	163	1237	8.13	767	0.03	1.46	0.05
PR15	9/28/2021	255	6.41	72	1.32	224	133	1034	8.3	641	0.00	1.37	0.41
PR8	9/28/2021	279	6.84	93	1.49	260	175	1232	8.26	764	0.02	0.96	0.07

CROW BUTTE MINE  
MONTHLY RESTORATION REPORT

September 2021

MINE UNIT 3

1. RESTORATION ACTIVITY DURING MONTH:

	YES	NO	
a. Groundwater Transfer		X	(if yes, complete part 2)
b. Groundwater Sweep		X	(if yes, complete part 3)
c. Groundwater Treatment		X	
d. Wellfield Recirculation		X	
e. Other (explain):	X		The Mine Unit is in Stability Monitoring.

2. LIST WELLS USED IN GROUNDWATER TRANSFER DURING THE MONTH:

3. LIST WELLS USED IN GROUNDWATER SWEEP DURING THE MONTH:

4. LIST WELLS SAMPLED DURING MONTH AND ASSAY RESULTS:

No in-house samples were collected during the month.

CROW BUTTE MINE  
MONTHLY RESTORATION REPORT

September 2021

MINE UNIT 4

1. RESTORATION ACTIVITY DURING MONTH:

	YES	NO	
a. Groundwater Transfer		X	(if yes, complete part 2)
b. Groundwater Sweep		X	(if yes, complete part 3)
c. Groundwater Treatment	X		CM2-4, I549P
d. Wellfield Recirculation		X	
e. Other (explain):		X	

2. LIST WELLS USED IN GROUNDWATER TRANSFER DURING THE MONTH:

3. LIST WELLS USED IN GROUNDWATER SWEEP DURING THE MONTH:

4. LIST WELLS SAMPLED DURING MONTH AND ASSAY RESULTS:

BL-8, BL-9, BL-10, BL-18, BL-19, BL-20, CM1-7, CM2-1, CM2-2, CM2-3, CM2-4, CM3-9, CM3-10, P390, P391, P392, P393, P394, P456, I508P, I526P, I533P, I534P, I535P, I536P, I537P, I538P, I539P, I540P, I541P, I542P, I543P, I544P, I545P, I546P, I547P, I548P, I549P, I550P, I551P, I552P, PM-3

**Mine Unit 4 Restoration Data**

Well ID	Date	Alk	Ca	Cl	Mg	Na	SO4	Cond	pH	TDS	Fe	U	V
BL-10	9/28/2021	377	18.85	119	4.78	328	224	1619	7.96	1004	0.02	2.01	0.16
BL-18	9/28/2021	186	6.97	67	0.44	155	69	737	8.66	457	0.01	0.21	0.94
BL-19	9/28/2021	279	5.51	49	0.67	199	78	912	8.18	565	0.11	1.42	2.00
BL-20	9/28/2021	312	10.28	91	1.61	287	204	1405	7.81	871	0.03	0.81	0.13
BL-8	9/28/2021	313	9.05	64	2.28	230	121	1080	8.01	670	0.08	0.93	0.20
BL-9	9/28/2021	228	8.92	51	1.65	186	100	876	7.46	543	0.15	0.19	0.05
CM1-7	9/28/2021	295	7.56	68	1.85	239	140	1131	7.64	701	0.01	0.81	0.09
CM2-1	9/28/2021	368	13.56	76	3.24	274	150	1321	7.98	819	0.01	1.53	0.14
CM2-2	9/28/2021	279	9.98	62	1.56	214	115	1011	8.35	627	0.03	0.71	0.10
CM2-3	9/28/2021	341	16.17	135	2.50	328	217	1624	7.8	1007	0.02	0.27	0.06
CM2-4	9/28/2021	380	14.51	143	3.92	368	263	1818	7.98	1127	0.03	0.61	0.04
CM3-10	9/28/2021	302	7.51	70	1.31	242	139	1158	8.08	718	0.05	0.23	0.04
CM3-9	9/28/2021	310	9.23	69	1.87	243	141	1160	8.4	719	0.02	1.38	0.99
I508P	9/28/2021	237	7.31	83	0.92	218	127	1033	8.17	640	0.01	0.79	0.04
I526P	9/28/2021	293	22.57	72	3.58	212	137	1088	8.14	675	0.04	0.49	0.03
I533P	9/28/2021	457	15.12	111	3.29	361	220	1695	8.27	1051	0.01	2.10	0.13
I534P	9/28/2021	351	10.80	111	1.99	303	179	1457	8.3	903	0.01	1.70	0.10
I535P	9/28/2021	426	20.05	130	3.83	367	240	1759	7.79	1091	0.04	2.35	0.04
I536P	9/28/2021	441	28.36	145	7.61	388	296	1980	8.14	1228	0.00	1.72	0.09

**Mine Unit 4 Restoration Data**

Well ID	Date	Alk	Ca	Cl	Mg	Na	SO4	Cond	pH	TDS	Fe	U	V
I537P	9/28/2021	341	16.80	130	2.75	310	205	1531	7.91	949	0.01	0.05	0.02
I538P	9/28/2021	388	20.54	153	4.85	360	255	1824	8.08	1131	0.01	0.61	0.08
I539P	9/28/2021	477	23.77	183	6.39	436	299	2198	8.14	1363	0.03	2.54	0.08
I540P	9/28/2021	323	8.88	58	0.98	233	133	1104	8.17	684	0.01	2.05	0.08
I541P	9/28/2021	242	4.30	47	0.66	182	93	840	8.56	521	0.01	1.52	0.09
I542P	9/28/2021	541	46.00	164	8.63	431	309	2197	8.07	1362	0.02	2.84	0.07
I543P	9/28/2021	356	8.63	67	1.57	263	148	1230	8.19	763	0.02	1.44	0.03
I544P	9/28/2021	303	10.16	64	2.28	230	138	1104	7.92	684	0.02	0.55	0.16
I545P	9/28/2021	323	8.88	70	1.98	254	154	1210	7.97	750	0.01	0.64	0.10
I546P	9/28/2021	517	19.15	96	4.42	356	187	1714	8.04	1063	0.01	0.80	0.04
I547P	9/28/2021	294	9.22	65	1.62	232	137	1105	7.79	685	0.17	1.51	0.03
I548P	9/28/2021	259	4.99	48	0.98	199	103	921	8.71	571	0.01	0.21	0.14
I549P	9/13/2021	564	34.55	160	10.10	517	449	2429	7.22	1506	0.06	2.39	0.22
I550P	9/28/2021	735	45.78	219	13.23	633	495	3093	7.49	1918	0.01	0.79	0.44
I551P	9/28/2021	299	18.27	54	3.88	201	113	1020	7.9	632	0.02	0.58	0.20
I552P	9/28/2021	296	16.48	74	1.37	226	123	1115	8.08	691	0.04	0.74	0.45
P390	9/28/2021	293	6.59	56	1.14	222	128	1037	8.03	643	0.02	0.49	0.04
P391	9/28/2021	376	9.85	78	1.91	284	152	1350	8.42	837	0.01	2.17	0.07
P392	9/28/2021	307	11.07	62	1.65	221	128	1074	8.34	666	0.01	1.52	0.11

## Mine Unit 4 Restoration Data

Well ID	Date	Alk	Ca	Cl	Mg	Na	SO4	Cond	pH	TDS	Fe	U	V
P393													
	9/28/2021	227	10.59	40	1.21	162	76	752	8.11	466	0.01	0.01	0.02
P394													
	9/28/2021	233	13.11	55	1.40	187	115	910	7.54	564	0.08	0.03	0.02
P456													
	9/28/2021	220	9.87	46	1.23	162	73	766	8.24	475	0.11	0.29	0.05
PM-3													
	9/28/2021	318	14.30	103	3.18	284	193	1415	7.77	877	0.05	0.63	0.05



CROW BUTTE MINE  
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September 2021

MINE UNIT 5

1. RESTORATION ACTIVITY DURING MONTH:

	YES	NO	
a. Groundwater Transfer		X	(if yes, complete part 2)
b. Groundwater Sweep		X	(if yes, complete part 3)
c. Groundwater Treatment		X	
d. Wellfield Recirculation		X	
e. Other (explain):	X		The Mine Unit is in Stability Monitoring.

2. LIST WELLS USED IN GROUNDWATER TRANSFER DURING THE MONTH:

3. LIST WELLS USED IN GROUNDWATER SWEEP DURING THE MONTH:

4. LIST WELLS SAMPLED DURING MONTH AND ASSAY RESULTS:

No in-house samples were collected during the month.

CROW BUTTE MINE  
MONTHLY RESTORATION REPORT

September 2021

MINE UNIT 6

1. RESTORATION ACTIVITY DURING MONTH:

	YES	NO	
a. Groundwater Transfer		X	(if yes, complete part 2)
b. Groundwater Sweep		X	(if yes, complete part 3)
c. Groundwater Treatment	X		P1337, P1399, P1461, P1625, P1628
d. Wellfield Recirculation		X	
e. Other (explain):		X	

2. LIST WELLS USED IN GROUNDWATER TRANSFER DURING THE MONTH:

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3. LIST WELLS USED IN GROUNDWATER SWEEP DURING THE MONTH:

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4. LIST WELLS SAMPLED DURING MONTH AND ASSAY RESULTS:

CM5-14, CM5-15, CM5-16, CM5-17, CM6-6, CM6-7, P1265, I1266P, I1267P, P1268, P1269, I1270P, I1272P, P1273, I1274P, I1285P, P1318, P1337, P1348, P1355, I1356P, I1357P, P1358, P1376, P1396, I1397P, I1398P, P1399, I1423P, P1426, P1439, P1446, P1457, P1461, P1494, P1532, I1581P, P1584, P1590, I1600P, I1601P, I1602P, P1611, P1612, P1624, P1625, P1628, P1663, I1667P, P1689, P1690, P1703, P1706, P1751, P1765, P1800, P1832, P1843.

**Mine Unit 6 Restoration Data**

Well ID	Date	Alk	Ca	Cl	Mg	Na	SO4	Cond	pH	TDS	Fe	U	V
CM5-14	9/20/2021	315	22.73	188	4.80	424	389	2119	8.19	1314	0.01	0.09	0.06
CM5-15	9/20/2021	348	12.87	76	2.39	275	162	1316	8.21	816	0.02	1.24	0.09
CM5-16	9/20/2021	376	11.31	82	2.54	296	160	1395	8.29	865	0.02	1.25	0.66
CM5-17	9/20/2021	426	21.41	160	5.47	442	366	2166	8.07	1343	0.07	0.11	0.05
CM6-6	9/28/2021	294	15.51	173	3.72	398	353	1956	8.6	1213	0.02	0.00	0.04
CM6-7	9/28/2021	277	17.45	178	4.22	399	386	1983	8.59	1229	0.01	0.02	0.04
I1266P	9/20/2021	219	4.21	48	0.83	167	64	776	8.8	481	0.08	0.74	0.57
I1267P	9/20/2021	252	5.25	67	1.49	221	129	1036	8.45	642	0.41	1.19	0.25
I1270P	9/20/2021	335	12.50	90	2.81	274	153	1298	8.39	805	0.01	0.60	1.17
I1272P	9/20/2021	411	17.15	132	4.45	386	285	1882	7.97	1167	0.02	0.51	0.06
I1274P	9/20/2021	495	17.01	182	4.53	500	369	2375	7.79	1473	0.04	1.36	0.22
I1285P	9/20/2021	381	6.25	79	1.42	298	159	1357	8.44	841	0.02	2.32	0.51
I1356P	9/20/2021	191	5.03	49	0.66	156	73	723	8.44	448	0.05	0.59	0.15
I1357P	9/20/2021	319	24.20	139	5.30	355	322	1816	7.44	1126	0.37	0.43	0.07
I1397P	9/20/2021	305	8.52	91	1.54	277	181	1323	8.36	820	0.01	1.57	0.27
I1398P	9/20/2021	318	12.29	84	2.77	267	168	1297	8.33	804	0.01	0.49	0.19
I1423P	9/20/2021	270	7.43	95	1.82	276	196	1320	8.24	818	0.02	1.17	0.69
I1581P	9/20/2021	305	13.72	174	3.78	397	344	1963	8.33	1217	0.01	0.79	0.23
I1600P	9/20/2021	353	8.04	129	1.76	339	214	1614	8.72	1001	0.01	3.07	0.38

**Mine Unit 6 Restoration Data**

Well ID	Date	Alk	Ca	Cl	Mg	Na	SO4	Cond	pH	TDS	Fe	U	V
I1601P													
	9/20/2021	353	7.12	87	1.32	282	151	1303	8.87	808	0.05	2.66	2.25
I1602P													
	9/20/2021	213	5.75	68	1.30	190	111	914	8.25	567	0.02	0.10	0.17
I1667P													
	9/20/2021	383	37.33	149	7.71	349	267	1802	8	1117	0.06	0.23	0.07
P1265													
	9/20/2021	341	8.51	83	2.28	285	167	1362	8.31	844	0.01	0.53	0.08
P1268													
	9/20/2021	308	6.67	87	1.74	274	170	1301	8.4	807	0.05	0.89	1.66
P1269													
	9/20/2021	228	5.77	55	0.86	193	116	902	8.24	559	0.02	0.31	0.20
P1273													
	9/20/2021	438	11.52	123	2.98	387	257	1828	7.87	1133	0.07	3.65	0.11
P1318													
	9/20/2021	306	9.24	87	1.64	275	176	1273	8.4	789	0.01	0.56	1.20
P1337													
	9/13/2021	415	9.52	93	2.64	331	186	1469	8.14	911	0.01	1.90	0.62
P1348													
	9/20/2021	242	4.51	75	1.04	223	140	1052	8.07	652	0.09	0.34	0.19
P1355													
	9/20/2021	429	12.17	107	3.16	362	225	1683	8.15	1043	0.01	2.89	0.37
P1358													
	9/20/2021	239	3.92	50	1.13	184	92	852	8.47	528	0.75	0.78	0.96
P1376													
	9/20/2021	182	3.54	53	0.62	163	97	746	8.25	463	0.11	0.32	0.20
P1396													
	9/20/2021	278	14.51	148	3.59	351	303	1759	8.22	1091	0.02	0.04	0.06
P1399													
	9/13/2021	447	24.78	178	5.98	462	365	2156	8.13	1337	0.02	1.37	0.21
P1426													
	9/20/2021	346	20.61	163	3.68	384	297	1882	7.88	1167	0.09	1.65	0.13
P1439													
	9/20/2021	529	10.73	121	2.98	420	222	1909	8.17	1184	0.06	1.93	0.97
P1446													
	9/20/2021	280	20.02	175	4.63	394	379	2008	8.15	1245	0.03	-0.02	0.05
P1457													
	9/20/2021	411	7.24	107	2.33	356	211	1626	8.53	1008	0.70	0.65	1.83

**Mine Unit 6      Restoration Data**

Well ID	Date	Alk	Ca	Cl	Mg	Na	SO4	Cond	pH	TDS	Fe	U	V
P1461	9/13/2021	368	16.41	168	4.51	419	325	1984	8.13	1230	0.01	1.08	0.40
P1494	9/20/2021	294	4.51	54	1.10	223	116	1033	8.2	640	0.03	0.69	0.47
P1532	9/20/2021	328	13.87	178	3.72	426	380	2085	7.81	1293	0.01	0.15	0.05
P1584	9/20/2021	296	6.23	77	1.23	252	147	1186	8.58	735	0.02	1.39	0.44
P1590	9/20/2021	268	8.16	75	1.68	227	133	1096	8.77	680	0.11	5.01	0.14
P1611	9/20/2021	321	14.87	166	4.06	396	348	1988	8.11	1233	0.21	2.72	0.36
P1612	9/20/2021	289	5.74	66	1.31	236	143	1107	8.59	686	0.01	0.64	0.57
P1624	9/20/2021	221	5.56	47	1.15	167	70	770	8.57	477	0.01	0.64	0.18
P1625	9/13/2021	437	18.06	145	5.06	400	278	1880	8.05	1166	0.01	1.68	0.56
P1628	9/13/2021	309	9.13	130	2.89	332	236	1564	8.37	970	0.01	0.62	0.49
P1663	9/20/2021	365	7.70	110	2.53	328	197	1562	8.45	968	0.02	1.20	0.23
P1689	9/20/2021	302	21.15	207	4.49	411	342	2064	8.24	1280	0.02	0.67	0.06
P1690	9/20/2021	367	18.54	162	4.99	393	310	1926	8.21	1194	0.01	1.50	0.11
P1703	9/20/2021	249	16.60	78	3.25	224	158	1112	8.02	689	0.18	0.97	0.10
P1706	9/20/2021	293	2.58	46	0.74	216	96	971	8.7	602	0.02	1.05	1.79
P1751	9/20/2021	126	3.25	34	0.54	104	43	472	8.02	293	0.48	0.04	0.16
P1765	9/20/2021	418	7.92	85	2.11	324	174	1480	8.35	918	0.50	1.64	0.41
P1800	9/20/2021	262	6.86	79	1.30	236	137	1111	8.44	689	0.01	0.98	0.25
P1832	9/20/2021	414	10.32	90	2.88	328	183	1516	8.31	940	0.01	2.11	0.50

# Mine Unit 6 Restoration Data

Well ID	Date	Alk	Ca	Cl	Mg	Na	SO4	Cond	pH	TDS	Fe	U	V
P1843	9/20/2021	469	10.26	154	3.18	432	290	2034	8.36	1261	0.05	2.42	2.07

CROW BUTTE MINE  
MONTHLY RESTORATION REPORT

September 2021

MINE UNIT 7

1. RESTORATION ACTIVITY DURING MONTH:

	YES	NO	
a. Groundwater Transfer		X	(if yes, complete part 2)
b. Groundwater Sweep		X	(if yes, complete part 3)
c. Groundwater Treatment	X		IX and RO BL-17, CM4-14, CM4-15, CM4-16, CM4-17, CM4-18, I1971P, P1972, I1973P, I1975P, I1978P, P1986, P2014, P2038, P2040, P2103, I2183P, I2185P, P2188, P2216, P2226, P2316, P2359, P2384, P2401, I2429P, P2470, P2476, I2502P, P2505, P2523, P2538, P2601, P2610, P2660, P5220, P5230, P5250, P5283.
d. Wellfield Recirculation		X	
e. Other (explain):		X	

2. LIST WELLS USED IN GROUNDWATER TRANSFER DURING THE MONTH:

3. LIST WELLS USED IN GROUNDWATER SWEEP DURING THE MONTH:

4. LIST WELLS SAMPLED DURING MONTH AND ASSAY RESULTS:

BL-17, CM4-13, CM4-14, CM4-15, CM4-16, CM4-17, CM4-18, I1971P, P1972, I1973P, I1975P, I1978P, P1986, P2014, P2038, P2040, I2183P, I2185P, P2188, P2216, P2226, P2316, P2359, P2384, P2401, I2429P, P2470, P2476, P2481, I2502P, P2505, P2523, P2538, P2601, P2610, P2660, P5230, P5250, P5283.

**Mine Unit 7 Restoration Data**

Well ID	Date	Alk	Ca	Cl	Mg	Na	SO4	Cond	pH	TDS	Fe	U	V
BL-17													
	9/13/2021	452	11.83	86	3.02	333	181	1521	8.04	943	0.00	0.40	1.44
CM4-13													
	9/13/2021	377	25.04	66	4.00	272	160	1269	7.67	787	0.02	0.48	0.34
CM4-14													
	9/13/2021	946	74.41	272	21.42	846	754	3943	7.41	2445	0.01	2.12	0.40
CM4-15													
	9/13/2021	825	59.38	214	17.24	716	619	3387	7.23	2100	0.01	1.51	0.56
CM4-16													
	9/13/2021	860	64.32	229	19.01	747	636	3544	7.32	2197	0.01	1.02	0.28
CM4-17													
	9/13/2021	756	54.97	199	16.38	628	518	3045	7.45	1888	0.05	0.58	0.09
CM4-18													
	9/13/2021	459	24.25	114	6.68	360	235	1761	7.69	1092	0.02	0.30	0.43
I1971P													
	9/13/2021	776	51.03	166	13.65	642	510	2970	7.44	1841	0.01	1.48	0.29
I1973P													
	9/13/2021	760	42.78	160	10.26	604	458	2814	7.62	1745	0.01	4.31	0.62
I1975P													
	9/13/2021	865	60.43	230	18.53	742	630	3478	7.53	2156	0.01	4.35	0.31
I1978P													
	9/13/2021	437	29.00	82	5.75	327	216	1578	7.76	978	0.01	1.32	0.42
I2183P													
	9/13/2021	584	44.12	142	10.27	484	395	2344	7.51	1453	0.01	5.66	0.89
I2185P													
	9/13/2021	0	68.44	244	20.50	888	793	4074	7.48	2526	0.01	4.16	2.09
I2429P													
	9/13/2021	429	20.37	108	5.65	358	249	1711	7.73	1061	0.01	2.81	0.46
I2502P													
	9/13/2021	325	19.80	182	5.21	404	365	2013	8.07	1248	0.01	0.47	0.18
P1972													
	9/13/2021	513	26.30	110	7.07	420	326	1996	7.38	1238	0.04	2.23	0.50
P1986													
	9/13/2021	497	24.64	156	7.23	461	352	2206	7.72	1368	0.01	1.17	0.58
P2014													
	9/13/2021	208	7.16	39	1.62	159	80	720	7.37	446	0.09	0.05	0.20
P2038													
	9/13/2021	610	36.47	154	10.67	518	426	2493	7.47	1546	0.03	1.80	0.21



**Mine Unit 7 Restoration Data**

Well ID	Date	Alk	Ca	Cl	Mg	Na	SO4	Cond	pH	TDS	Fe	U	V
P2040	9/13/2021	825	66.91	234	21.43	740	674	3540	7.41	2195	0.01	2.66	0.21
P2188	9/13/2021	277	7.72	51	2.07	213	119	981	7.55	608	0.01	0.60	1.06
P2216	9/13/2021	478	32.50	186	7.15	489	398	2375	7.75	1473	0.01	3.17	0.67
P2226	9/13/2021	438	10.97	81	3.02	333	193	1506	7.81	934	0.01	1.58	0.64
P2316	9/13/2021	706	49.33	151	12.92	549	454	2637	7.66	1635	0.01	4.25	0.66
P2359	9/13/2021	480	27.97	95	7.48	362	261	1766	7.63	1095	0.02	2.34	0.34
P2384	9/13/2021	582	44.87	151	12.63	504	448	2476	7.46	1535	0.01	2.17	0.54
P2401	9/13/2021	389	23.69	80	5.90	261	218	1448	7.8	898	0.01	0.48	0.40
P2470	9/13/2021	334	15.84	99	3.16	294	201	1405	8	871	0.01	0.63	0.62
P2476	9/13/2021	434	22.05	101	5.98	356	250	1698	7.76	1053	0.02	1.01	0.64
P2481	9/13/2021	589	18.21	112	5.28	456	283	2108	7.72	1307	0.01	1.20	1.55
P2505	9/13/2021	295	15.31	115	3.21	298	217	1444	7.98	895	0.01	0.25	0.59
P2523	9/13/2021	349	11.69	66	2.91	263	157	1227	7.63	761	0.01	0.80	0.64
P2538	9/13/2021	323	15.17	98	4.45	305	218	1469	7.6	911	0.05	0.42	0.98
P2601	9/13/2021	441	25.87	167	6.79	429	334	2097	7.69	1300	0.07	0.29	0.57
P2610	9/13/2021	682	30.23	156	9.39	543	379	2550	7.66	1581	0.01	1.63	1.16
P2660	9/13/2021	429	19.23	91	4.82	338	222	1611	7.62	999	0.02	1.12	0.48
P5230	9/13/2021	865	61.67	204	16.21	726	614	3432	7.47	2128	0.11	3.72	0.58
P5250	9/13/2021	476	25.78	115	7.40	386	289	1874	7.51	1162	0.01	0.69	1.16

# Mine Unit 7 Restoration Data

Well ID	Date	Alk	Ca	Cl	Mg	Na	SO4	Cond	pH	TDS	Fe	U	V
P5283	9/13/2021	685	38.67	157	11.36	560	448	2634	7.69	1633	0.04	1.92	1.36

CROW BUTTE MINE  
MONTHLY RESTORATION REPORT

September 2021

MINE UNIT 8

1. RESTORATION ACTIVITY DURING MONTH:

	YES	NO	
a. Groundwater Transfer		X	(if yes, complete part 2)
b. Groundwater Sweep		X	(if yes, complete part 3)
c. Groundwater Treatment	X		CM6-11, CM6-20, CM6-21, I2671P, I2672P, P2689, I2692P, P2701, P2702, P2715, P2724, P2734, P2740, P2758, P2764, P2765, P2770, P2774, P2808, P2844, P2855, P2863, P2880, P2904, P2908, P2926, P3153, P3166, P3170, P3173, P3178, P3189, P3192, P3209, P6101, P6102, P6103, P6104, P6105, P6107, P6109, P6110, P6111, P6112, P6127, P6140.
d. Wellfield Recirculation		X	
e. Other (explain):		X	

2. LIST WELLS USED IN GROUNDWATER TRANSFER DURING THE MONTH:

3. LIST WELLS USED IN GROUNDWATER SWEEP DURING THE MONTH:

4. LIST WELLS SAMPLED DURING MONTH AND ASSAY RESULTS:

CM6-11, CM6-20, CM6-21, CM6-22, CM6-23, CM6-24, I2671P, I2672P, I2685P, P2686, P2689, P2700, P2702, P2715, P2724, P2729, P2734, P2758, P2764, P2765, P2770, P2774, P2808, P2844, P2904, P2908, P2926, I2976P, P3153, P3166, P3170, P3173, P3178, P3189, P3192, P3209, P3441, P6103, P6104, P6105, P6107, P6109, P6110, P6112, P6127, P6140.

**Mine Unit 8 Restoration Data**

Well ID	Date	Alk	Ca	Cl	Mg	Na	SO4	Cond	pH	TDS	Fe	U	V
CM6-11	9/13/2021	404	24.55	205	6.15	458	405	2291	8.12	1420	0.01	0.47	0.07
CM6-20	9/13/2021	430	14.33	156	3.75	404	260	1925	8.12	1194	0.03	1.00	0.33
CM6-21	9/13/2021	707	35.54	270	9.47	680	517	3167	7.85	1964	0.00	15.62	0.41
CM6-22	9/13/2021	411	15.54	195	4.50	447	333	2146	8.05	1331	0.01	2.36	0.29
CM6-23	9/13/2021	492	9.15	184	3.79	481	319	2240	8.14	1389	0.01	2.12	0.92
CM6-24	9/13/2021	678	24.96	281	8.98	679	491	3155	7.87	1956	0.01	1.73	0.90
I2671P	9/13/2021	713	23.09	207	6.99	610	390	2784	8.14	1726	0.03	4.53	0.62
I2672P	9/13/2021	468	11.18	177	3.26	459	321	2140	8.12	1327	0.04	1.25	0.11
I2685P	9/13/2021	709	24.44	290	8.41	717	531	3318	7.99	2057	0.01	8.72	0.92
I2976P	9/13/2021	559	16.18	224	5.61	560	404	2645	8.13	1640	0.01	1.37	0.64
P2686	9/13/2021	456	10.88	165	3.44	435	294	2032	8.12	1260	0.01	3.20	0.83
P2689	9/13/2021	668	32.30	287	7.83	701	538	3223	7.95	1998	0.08	6.79	0.15
P2700	9/13/2021	490	29.71	250	8.33	541	445	2660	8	1649	0.02	1.57	0.39
P2702	9/13/2021	495	10.65	177	3.38	471	322	2185	8.23	1355	0.01	2.59	0.74
P2715	9/13/2021	434	9.75	153	3.24	414	283	1923	8.25	1192	0.01	1.14	0.68
P2724	9/13/2021	826	26.41	347	10.69	847	626	3855	7.96	2390	0.01	5.33	1.20
P2729	9/13/2021	372	8.23	123	2.57	337	205	1574	8.5	976	0.01	1.05	1.06
P2734	9/13/2021	762	24.97	315	8.86	776	588	3551	7.9	2202	0.01	13.51	0.99
P2758	9/13/2021	532	10.23	195	3.88	505	346	2368	8.17	1468	0.01	2.49	1.37

**Mine Unit 8 Restoration Data**

Well ID	Date	Alk	Ca	Cl	Mg	Na	SO4	Cond	pH	TDS	Fe	U	V
P2764	9/13/2021	625	29.86	255	6.98	621	441	2906	7.93	1802	0.02	6.59	1.09
P2765	9/13/2021	399	7.68	157	2.46	391	258	1841	8.08	1141	0.03	1.35	0.31
P2770	9/13/2021	508	12.96	188	4.73	482	325	2278	8.31	1412	0.01	1.25	1.78
P2774	9/13/2021	514	15.90	204	4.97	509	353	2397	8.06	1486	0.01	2.94	0.77
P2808	9/13/2021	488	12.36	188	4.37	472	312	2228	8.18	1381	0.01	1.57	1.13
P2844	9/13/2021	461	12.90	194	4.19	468	332	2225	8.19	1380	0.01	1.26	0.98
P2904	9/13/2021	624	29.59	276	8.68	636	472	3043	7.83	1887	0.01	2.75	0.56
P2908	9/13/2021	563	12.43	198	4.21	536	365	2476	8.13	1535	0.01	5.57	0.70
P2926	9/13/2021	458	12.31	174	3.91	433	288	2027	8.17	1257	0.01	1.98	0.84
P3153	9/13/2021	481	17.14	145	3.22	422	261	1955	8.28	1212	0.05	3.45	0.53
P3166	9/13/2021	524	18.13	189	5.73	487	345	2310	8.22	1432	0.01	2.91	0.42
P3170	9/13/2021	513	20.92	202	5.99	503	348	2386	8.07	1479	0.01	1.95	0.38
P3173	9/13/2021	549	14.75	218	5.10	552	387	2574	8.15	1596	0.01	4.75	0.76
P3178	9/13/2021	598	20.08	224	6.56	587	434	2720	8.12	1686	0.01	2.69	0.39
P3189	9/13/2021	422	20.18	171	5.09	407	298	1962	8.12	1216	0.02	0.59	0.13
P3192	9/13/2021	629	31.45	267	8.65	638	498	3023	8	1874	0.03	1.82	0.15
P3209	9/13/2021	619	24.29	255	7.13	624	479	2943	8.03	1825	0.03	5.30	0.24
P3441	9/13/2021	924	55.59	0	16.53	969	788	4511	7.91	2797	0.01	7.43	0.35
P6103	9/13/2021	442	13.86	172	4.28	424	283	2002	8.26	1241	0.01	0.50	0.79

**Mine Unit 8 Restoration Data**

Well ID	Date	Alk	Ca	Cl	Mg	Na	SO4	Cond	pH	TDS	Fe	U	V
P6104	9/13/2021	607	20.19	245	7.49	601	436	2826	8.13	1752	0.01	0.81	0.54
P6105	9/13/2021	415	13.53	166	3.55	405	267	1919	8.21	1190	0.05	0.21	0.28
P6107	9/13/2021	437	12.55	162	3.58	419	285	1976	8.25	1225	0.01	0.68	0.35
P6109	9/13/2021	444	7.58	157	2.75	424	282	1956	8.4	1213	0.01	0.91	0.72
P6110	9/13/2021	416	15.79	169	4.56	406	258	1925	8.21	1194	0.01	0.34	0.41
P6112	9/13/2021	420	10.49	161	2.76	411	270	1917	8.41	1189	0.01	0.20	0.40
P6127	9/13/2021	464	12.11	176	3.85	455	311	2132	8.29	1322	0.01	0.49	0.37
P6140	9/13/2021	525	16.33	204	5.24	508	353	2376	8.19	1473	0.01	0.39	0.65