

**CAMECO RESOURCES
CROW BUTTE OPERATION**



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

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

April 16, 2018

**USPS PRIORITY MAIL
SIGNATURE CONFIRMATION**

Marty Link, Water Quality Division Administrator
Nebraska Department of Environmental Quality
P.O. Box 98922
Lincoln, NE 68509-8922

Class III UIC Permit NE0122611
March 2018 Monthly Restoration Report

Dear Ms. Link:

Please find enclosed the March 2018 Monthly Restoration Reports for Mine Units 2, 3, 4, 5 and 6. Deep Well #1 was returned to service on March 20, 2018, and restoration activities were returned to more normal levels. The reverse osmosis (RO) units were restarted, and were used to inject permeate and reductant into Mine Units 4, and 6 with groundwater sweep continuing in portions of the two mine units as well as Mine Unit 5. Spot treatment with permeate and reductant was restarted in P246 in Mine Unit 3.

Mine Unit 2 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 – NDEQ Field Office
Amanda Jones – NDEQ Program Coordinator

CROW BUTTE MINE
MONTHLY RESTORATION REPORT

March 2018

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):	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 wells were sampled during the month.

CROW BUTTE MINE
MONTHLY RESTORATION REPORT

March 2018

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		IX and RO P246
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:

No wells were sampled in the mine unit during the month

CROW BUTTE MINE
MONTHLY RESTORATION REPORT

March 18

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		IX and RO I536P.
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:

BL-10 and P372.

4. LIST WELLS SAMPLED DURING MONTH AND ASSAY RESULTS:

No wells were sampled in MU 4 during the month.

CROW BUTTE MINE
MONTHLY RESTORATION REPORT

March 2018

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	

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

3. LIST WELLS USED IN GROUNDWATER SWEEP DURING THE MONTH:
BL5 and P1002.

4. LIST WELLS SAMPLED DURING MONTH AND ASSAY RESULTS:

No wells were sampled in MU 5 during the month.

CROW BUTTE MINE
MONTHLY RESTORATION REPORT

March 2018

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		IX and RO P1265, I1272P, P1273, I1285P, P1314, P1315, P1318, P1355, I1356P, P1358, P1399, P1402, P1404, P1426, P1449, P1494, P1532, P1582, P1584, P1585, I1602P, I1667P, P1690, P1704, P1751, P1765, P1800.
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:

P1337 and I1423P.

4. LIST WELLS SAMPLED DURING MONTH AND ASSAY RESULTS:

P1273, I1285P, P1337, P1355, I1356P, P1402, P1404, I1423P, P1426, P1449, P1494, P1532, P1584, P1585, I1602P, P1690, and P1704.

Mine Unit 6 Restoration Data

Well ID	Date	Alk	Ca	Cl	Mg	Na	SO4	Cond	pH	TDS	Fe	U	V
I1285P	3/22/2018	412	10.06	133	2.66	364	251	1735	8.11	1076	0.01	2.33	0.896
I1356P	3/22/2018	424	16.98	158	4.40	389	293	1929	7.71	1196	0.04	4.90	0.226
I1423P	3/22/2018	399	23.47	220	5.79	493	468	2404	7.85	1490	0.01	3.55	0.406
I1602P	3/22/2018	471	11.72	152	3.43	425	305	2054	8.12	1273	0.01	1.93	0.926
P1273	3/22/2018	354	10.64	114	2.54	309	220	1510	7.77	936	0.05	1.91	0.131
P1337	3/22/2018	498	13.84	131	3.58	398	252	1838	7.91	1140	0.01	2.81	0.537
P1355	3/22/2018	516	18.94	170	5.14	461	332	2201	7.9	1365	0.03	3.59	0.459
P1402	3/22/2018	300	3.37	44	0.67	190	86	905	8.09	561	0.13	1.64	0.223
P1404	3/22/2018	210	2.34	40	0.42	157	80	734	8.44	455	0.28	0.33	0.386
P1426	3/22/2018	261	24.34	153	5.67	309	294	1605	7.48	995	0.13	0.77	0.039
P1449	3/22/2018	337	5.12	66	0.81	241	122	1115	8.18	691	0.13	2.09	0.787
P1494	3/22/2018	417	15.66	169	3.94	407	331	2025	7.75	1256	0.09	2.17	0.233
P1532	3/22/2018	360	7.74	84	1.96	298	200	1411	7.65	875	0.05	0.20	-0.001
P1584	3/22/2018	445	11.03	141	3.10	383	270	1874	8.19	1162	0.01	2.68	0.584
P1585	3/22/2018	559	12.73	176	4.17	476	317	2249	8.17	1394	0.01	2.44	0.959
P1690	3/22/2018	592	26.92	220	7.58	540	410	2635	7.79	1634	0.03	3.58	0.122
P1704	3/22/2018	145	2.15	66	0.49	156	120	787	7.95	488	0.42	0.32	0.34