

**CAMECO RESOURCES
CROW BUTTE OPERATION**

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



(308) 665-2215
(308) 665-2341 – FAX

February 6, 2012

**CERTIFIED MAIL
RETURN RECEIPT REQUESTED**

Mr. Michael Linder, Director
Nebraska Department of Environmental Quality
P.O. Box 98922
Lincoln, NE 68509-8922

Subject: Class III UIC Permit NE0122611
January 2012 Monthly Restoration Report

Dear Mr. Linder:

Please find enclosed the January 2011 Monthly Restoration Reports for Mine Units 2, 3, 4, 5 and 6. Mine Unit 2 was placed into recirculation on July 7, 2011 in order to homogenize the aquifer in preparation for stability monitoring. This mine unit has been put back into reverse osmosis treatment so that permeate can be injected into patterns connected to Wellhouses 3 and 5. The reverse osmosis (RO) units continue to inject permeate and reductant into Mine Units 3 and 5. In Mine Unit 4, permeate is being injected into one wellhouse while the other two wellhouses remain in ion exchange. A hydrologic bleed was maintained in Mine Unit 6 for excursion control.

If you have any questions regarding this submittal, please feel free to contact me at (308) 665-2215, ext. 114.

Sincerely,
Cameco Resources
Crow Butte Operation

Larry Teahon
SHEQ Manager

Enclosures: As Stated

cc: Lindsey Phillips, NDEQ Chadron Office
Ron Burrows, NRC
CBO File
ec: CR - Cheyenne

CROW BUTTE MINE
MONTHLY RESTORATION REPORT
JANUARY 2012
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		RO PR15, P97, I180P, I188P, and P209.
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:

P97, I188P, and P209.

Mine Unit 2 Restoration Data

Well	Date	U ₃ O ₈	V	Total CO ₃	pH	Ca	Na	Cl	SO ₄	Cond
P97	01/05/12	2.23								1342
P97	01/10/12	2.25								
P97	01/18/12	2.13								1213
P97	01/25/12	2.28								
I188P	01/05/12	2.07								1164
I188P	01/10/12	2.17								
I188P	01/18/12	1.81								1135
I188P	01/25/12	2.08								
P209	01/05/12	1.77								1268
P209	01/10/12	1.72								
P209	01/18/12	1.58								1208
P209	01/25/12	1.84								

CROW BUTTE MINE
MONTHLY RESTORATION REPORT
JANUARY 2012
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		RO and Reductant CM1-11, IJ13P, P228, I298P, RES1E, RES2E, and RES3E.
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:

CM1-11, P228, I298P, RES1E, RES2E, and RES3E.

Mine Unit 3 Restoration Data

Well	Date	U ₃ O ₈	V	Total CO ₃	pH	Ca	Na	Cl	SO ₄	Cond
CM1-11	01/05/12	0.38								
CM1-11	01/10/12	0.37								
CM1-11	01/18/12	0.14								1870
CM1-11	01/25/12	0.54								
P228	01/05/12	1.30								756
P228	01/10/12	1.24								
P228	01/18/12	1.03								750
P228	01/25/12	1.41								
I298P	01/05/12	0.21								466
I298P	01/10/12	0.17								
I298P	01/18/12	0.00								474
I298P	01/25/12	0.32								
RES1E	01/05/12	1.68								967
RES1E	01/10/12	1.72								
RES1E	01/18/12	1.22								964
RES1E	01/25/12	1.87								
RES2E	01/05/12	2.09								1327
RES2E	01/10/12	2.13								
RES2E	01/18/12	1.97								1300
RES2E	01/25/12	2.22								
RES3E	01/05/12	1.41								984
RES3E	01/10/12	1.53								
RES3E	01/18/12	1.41								973
RES3E	01/25/12	1.73								

CROW BUTTE MINE
MONTHLY RESTORATION REPORT
JANUARY 2012
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		RO and Reductant P371 IX P393, P394, P430, P434, P437, P438, P442, P443, P447, P450, P456, P461, I548P, I549P, I551P, and I613.
d. Wellfield Recirculation		X	
e. Other (explain):			

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:

P371, P394, P430, P437, P438, P442, P443, P447, P450, P456, P461, I549P, I551P, and I613P.

Mine Unit 4 Restoration Data

Well	Date	U ₃ O ₈	V	Total CO ₃	pH	Ca	Na	Cl	SO ₄	Cond
P371	01/05/12	5.67								2007
P371	01/10/12	5.47								
P371	01/18/12	5.50								1935
P371	01/25/12	5.34								
P394	01/05/12	8.41	<1							4260
P394	01/10/12	8.48								
P394	01/18/12	8.11								4210
P394	01/25/12	8.30								
P430	01/05/12	3.32								1087
P430	01/10/12	3.35								
P430	01/18/12	3.31								1083
P430	01/25/12	3.40								
P437	01/05/12	6.12								3750
P437	01/10/12	6.30								
P437	01/18/12	6.01								3750
P438	01/05/12	2.07								3850
P438	01/10/12	2.43								
P438	01/18/12	2.53								3860
P438	01/25/12	3.15								
P442	01/05/12	10.54								3920
P442	01/10/12	10.36								
P442	01/18/12	10.70								3920
P442	01/25/12	10.31								
P443	01/05/12	5.12								3890
P443	01/10/12	5.27								
P443	01/18/12	5.26								3870
P443	01/25/12	5.48								
P447	01/05/12	3.54								3940
P447	01/10/12	3.52								
P447	01/18/12	3.40								3900
P447	01/25/12	3.60								
P450	01/05/12	8.86	<1							4420
P450	01/10/12	8.97								
P450	01/18/12	9.14								4390
P450	01/25/12	8.20								

Mine Unit 4 Restoration Data

Well	Date	U ₃ O ₈	V	Total CO ₃	pH	Ca	Na	Cl	SO ₄	Cond
P456	01/05/12	3.50	<1							3300
P456	01/10/12	3.64								
P456	01/18/12	3.42								3260
P456	01/25/12	3.49								
P461	01/05/12	7.86	<1							5060
P461	01/10/12	7.97								
P461	01/18/12	8.17								5030
P461	01/25/12	8.60								
I549P	01/05/12	6.89	<1							4600
I549P	01/10/12	7.04								
I549P	01/18/12	6.61								4520
I549P	01/25/12	6.09								
I551P	01/05/12	9.29	<1							4150
I551P	01/10/12	9.23								
I551P	01/18/12	8.87								4120
I551P	01/25/12	8.50								
I613P	01/05/12	3.18								1653
I613P	01/10/12	3.08								
I613P	01/18/12	3.04								1511
I613P	01/25/12	3.18								

CROW BUTTE MINE
MONTHLY RESTORATION REPORT
JANUARY 2012
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		RO and Reductant BL5-5, I676P, P690, P691, P707, P709, P773, P790, P800, I854P, P962, P1099, P1155, P1209, and P1232.
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:

BL5-5, I676P, P709, P773, P790, P800, I854P, and P1232.

Mine Unit 5 Restoration Data

Well	Date	U ₃ O ₈	V	Total CO ₃	pH	Ca	Na	Cl	SO ₄	Cond
BL5-5	01/05/12	0.53								3280
BL5-5	01/10/12	0.69								
BL5-5	01/18/12	0.38								3290
BL5-5	01/25/12	0.83								
I676P	01/05/12	8.84	<1							2749
I676P	01/10/12	9.33								
I676P	01/18/12	9.09								2728
I676P	01/25/12	8.70								
P709	01/05/12	8.78	<1							3070
P709	01/10/12	9.62								
P709	01/18/12	9.53								3100
P709	01/25/12	9.72								
P773	01/05/12	2.36	<1							2254
P773	01/10/12	2.62								
P773	01/18/12	2.38								2353
P773	01/25/12	2.79								
P790	01/05/12	3.49	1.2							1728
P790	01/10/12	3.52								
P790	01/18/12	2.82								1527
P790	01/25/12	2.91								
P800	01/05/12	3.56	<1							3020
P800	01/10/12	3.88								
P800	01/18/12	3.38								3040
P800	01/25/12	3.43								
I854P	01/05/12	2.49	<1							3560
I854P	01/10/12	2.60								
I854P	01/18/12	2.32								3480
I854P	01/25/12	2.48								
P1232	01/10/12	9.34								
P1232	01/18/12	10.11								2980
P1232	01/25/12	10.22								

CROW BUTTE MINE
MONTHLY RESTORATION REPORT
JANUARY 2012
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	
d. Wellfield Recirculation		X	
e. Other (explain):	X		Wellfield bleed for excursion control. P1567 and P1633.

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:

P1567 and P1633

Mine Unit 6 Restoration Data

Well	Date	U ₃ O ₈	V	Total CO ₃	pH	Ca	Na	Cl	SO ₄	Cond
P1567	01/05/12	11.23								3690
P1567	01/10/12	10.80								
P1567	01/18/12	11.95								3670
P1567	01/25/12	11.32								
P1633	01/05/12	22.68								4000
P1633	01/10/12	22.34								
P1633	01/18/12	22.53								3950
P1633	01/25/12	21.70								