CAMECO RESOURCES,
CROW BUTTE OPERATION

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

(308) 665-2215
(308) 665-2341 – FAX

July 9, 2010

Mr. Keith I McConnell, Deputy Director
Decommissioning and Uranium Recovery Licensing Directorate
Division of Waste Management and Environmental Protection
Office of Federal and State Materials and Environmental Management Programs
Mailstop T8-F5
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Re: Source Materials License SUA-1534
Docket No. 40-8943
Commercial Evaporation Pond #3 Liner Leak

Dear Mr. McConnell:

On June 11, 2010 routine evaporation pond monitoring results of Cameco Resources - Crow Butte Operation (CBO) Commercial Evaporation Pond #3, water level readings from the northwest underdrain indicated a potential pond liner leak. A sample was collected from the underdrain and analyzed for chloride, alkalinity, conductivity, sodium, and sulfate. The results of this sample indicated that the concentration of the indicator analytes in the underdrain were similar to the pond contents. Based upon these results, it was determined that a potential liner leak existed in Commercial Evaporation Pond #3.

Mr. Ron Burrows was notified by voice mail and email on June 11, 2010 of the potential liner leak. As required by License Condition 12.3, this report provides analytical data, monitoring results, mitigative actions, and the results of those actions.

Upon confirmation of the potential liner leak, CBO began weekly sampling of the northwest underdrain. These samples were analyzed for alkalinity, chloride, sodium, conductivity, and sulfate. Attachment #1 contains copies of the Weekly Evaporation Pond Underdrain Analysis Forms and the analytical results from the CBO laboratory. Samples were obtained on June 11, 16, and 23, 2010.

In addition to weekly analysis of the underdrain, CBO obtained non-routine samples from pond monitor wells CPM-1 and CPM-2. CPM-1 and CPM-2 are completed in the first aquifer and are located down gradient of Commercial Evaporation Pond #3 at the fenced restricted area boundary. The samples were obtained and analyzed for the indicator analytes on June 11, 17, 23, and 30, 2010 to ensure that there was no indication of leakage in the secondary liner. Analytical results were consistent with historical sampling results and are contained in Attachment #2.

Upon confirmation of the potential liner leak, CBO began lowering the level of Commercial Evaporation Pond #3 by pumping water to Commercial Evaporation Pond #4. Concurrently, an immediate visual inspection of the pond liner was performed. Initial efforts to locate the leak were unsuccessful. The level of the pond actually increased from 10.8' to 11.1' in the first week following detection of the potential leak due to a large precipitation event during this time period. In the subsequent weeks, the pond level has been lowered to 10'. CBO has performed a number of visual inspections of the Pond#3 liner since the potential leak was detected and has been unable to locate any breach or tear in the upper liner. CBO will continue to monitor the underdrain level and inspect the upper liner for tears.

Attachment #3 contains copies of the Commercial Pond Inspection Forms for the period of June 9, 2010 to July 7, 2010.

If you have any questions or require any further information, please do not hesitate to call me at (308) 665-2215 ext 114.

Sincerely,
CAMECO RESOURCES
CROW BUTTE OPERATION

Larry Teahon
SHEQ Manager

Enclosures: As Stated

cc: Mr. Joe Brister – Cheyenne Office
Mr. Ronald Burrows – Program Manager
CBO File

Attachment #1

Commercial Evaporation Pond #3 Underdrain Analysis

11-Jun-10

SM/LT

		Alk	Cl	Cond	SO_4	Na
		mg/L	mg/L	µmhos	mg/L	mg/L
Pond 3	NW	2188	36,871	92,400	4635	25,240

16-Jun-10

SM/LT/MO

		Alk	Cl	Cond	SO_4	Na
		mg/L	mg/L	µmhos	mg/L	mg/L
Pond 3	NW	2650	48,925	103,700	4108	30,585

23-Jun-10

SM/LT/MO

	Alk	Cl	Cond	SO_4	Na
	mg/L	mg/L	µmhos	mg/L	mg/L
Pond 3	3000	51,644	113,600	5497	37,758
Pond 3 NW	2650	50,580	106,900	4994	33,936

Attachment #2

Pond Monitor Well CPM-1 and CPM-2 Analysis

11-June-10

SM/LT/MO

	Alk	Cl	Cond	SO_4	Na
	mg/L	mg/L	umhos	mg/L	mg/L
Commercial Pond Monitor #1	190	5.7	440	15	15
Commercial Pond Monitor #2	190	5.3	420	14	14

17-June-10

SM/LT/MO

	Alk	Cl	Cond	SO_4	Na
	mg/L	mg/L	umhos	mg/L	mg/L
Commercial Pond Monitor #1	195	5.7	450	13	16
Commercial Pond Monitor #2	185	5.3	420	13	13

23-June-10

SM/LT/MO

	Alk	Cl	Cond	SO_4	Na
	mg/L	mg/L	umhos	mg/L	mg/L
Commercial Pond Monitor #1	195	5.3	440	14	16
Commercial Pond Monitor #2	185	5.7	420	16	14

30-June-10

SM/LT/MO

	Alk	Cl	Cond	SO_4	Na
	mg/L	mg/L	umhos	mg/L	mg/L
Commercial Pond Monitor #1	195	5.7	440	14	16
Commercial Pond Monitor #2	185	5.7	420	14	14

Attachment #3

Commercial Pond Inspection Forms

6/9/10

CROW BUTTE RESOURCES, INC.

WEEKLY EVAPORATION POND UNDERDRAIN ANALYSIS

COMMERCIAL PONDS		UNDERDRAIN WATER DEPTH / INCHES	METER READING	TEMP °C	CONDUCTIVITY µmhos/cm	LAB RESULTS µmhos/cm
POND # 1 Depth = 17 feet	POND LEVEL	9.0'				
	*FREEBOARD	8.0'				
	NE UNDERDRAIN	1				
	NM UNDERDRAIN	0				
	NW UNDERDRAIN	3				
	SE UNDERDRAIN	1				
	SM UNDERDRAIN	0				
	SW UNDERDRAIN	9	62.5 ms	11.9		
POND # 3 Depth = 17.5 feet	POND LEVEL	10.8'				
	*FREEBOARD	6.7'				
	NE UNDERDRAIN	5				
	NM UNDERDRAIN	10	16.27 ms	11.6		
	NW UNDERDRAIN	11	80.3 ms	12.3		
	SE UNDERDRAIN	10	19.54 ms	11.8		
	SM UNDERDRAIN	4				
	SW UNDERDRAIN	5				
POND # 4 Depth = 17.5 feet	POND LEVEL	10.0'				
	*FREEBOARD	11.5'				
	NE UNDERDRAIN	32	138.8 ms	17.5		
	NM UNDERDRAIN	16	85.8 ms	14.4		
	NW UNDERDRAIN	18	89.0 ms	16.9		
	SE UNDERDRAIN	9	94.3 ms	12.8		
	SM UNDERDRAIN	19	123.0 ms	12.9		
	SW UNDERDRAIN	27	129.7 ms	16.9		

R & D POND LEVELS (Depth = 15 ft)	
EAST LEVEL:	9.1'
**EAST FREEBOARD:	5.9
EAST UNDERDRAIN:	1
WEST LEVEL:	10.0
**WEST FREEBOARD:	5.0
WEST UNDERDRAIN:	0

REMARKS: Windy, light rain. NRC went with me.

*COMMERCIAL POND FREEBOARD = 5 FT MAX

** R&D POND FREEBOARD = 3 FT MAX

SAMPLER: B. Bass

DATE: 6/9/10

CROW BUTTE RESOURCES, INC.
WEEKLY EVAPORATION POND UNDERDRAIN ANALYSIS

	COMMERCIAL PONDS	UNDERDRAIN WATER DEPTH / INCHES	METER READING	TEMP °C	CONDUCTIVITY µmhos/cm	LAB RESULTS µmhos/cm
POND # 1 Depth = 17 feet	POND LEVEL	9.3'				
	*FREEBOARD	7.7'				
	NE UNDERDRAIN	1				
	NM UNDERDRAIN	0				
	NW UNDERDRAIN	3				
	SE UNDERDRAIN	1				
	SM UNDERDRAIN	0				
	SW UNDERDRAIN	10	86.4 ms	13.6		
POND # 3 Depth = 17.5 feet	POND LEVEL	11.1'				
	*FREEBOARD	6.4'				
	NE UNDERDRAIN	4				
	NM UNDERDRAIN	10	16.46 ms	12.6		
	NW UNDERDRAIN	10	82.2	14.9		
	SE UNDERDRAIN	0				
	SM UNDERDRAIN	4				
	SW UNDERDRAIN	5				
POND # 4 Depth = 17.5 feet	POND LEVEL	6.8'				
	*FREEBOARD	10.7'				
	NE UNDERDRAIN	36	138.2 ms	17.7		
	NM UNDERDRAIN	16	85.7 ms	14.6		
	NW UNDERDRAIN	17	138.6 ms	16.7		
	SE UNDERDRAIN	32	103.1 ms	18.1		
	SM UNDERDRAIN	11	96.3 ms	14.4		
	SW UNDERDRAIN	33	129.8 ms	17.5		

R & D POND LEVELS (Depth = 15 ft)
EAST LEVEL: 9.7'
**EAST FREEBOARD:
EAST UNDERDRAIN: 1
WEST LEVEL: 10.4'
**WEST FREEBOARD:
WEST UNDERDRAIN: 0

REMARKS: Very windy

*COMMERCIAL POND FREEBOARD = 5 FT MAX

** R&D POND FREEBOARD = 3 FT MAX

SAMPLER: R. Pelton

DATE: 6-16-10

CROW BUTTE RESOURCES, INC.
WEEKLY EVAPORATION POND UNDERDRAIN ANALYSIS

COMMERCIAL PONDS		UNDERDRAIN WATER DEPTH / INCHES	METER READING	TEMP °C	CONDUCTIVITY µmhos/cm	LAB RESULTS µmhos/cm
POND # 1 Depth = 17 feet	POND LEVEL	9'				
	*FREEBOARD	8.0				
	NE UNDERDRAIN	1				
	NM UNDERDRAIN	1				
	NW UNDERDRAIN	3				
	SE UNDERDRAIN	0				
	SM UNDERDRAIN	0				
	SW UNDERDRAIN	8	87.9 ms	14.4		
POND # 3 Depth = 17.5 feet	POND LEVEL	10'8				
	*FREEBOARD	6.7'				
	NE UNDERDRAIN	5				
	NM UNDERDRAIN	10	1657 ms	12.9		
	NW UNDERDRAIN	13	84.6 ms	13.8		
	SE UNDERDRAIN	0				
	SM UNDERDRAIN	4				
	SW UNDERDRAIN	5				
POND # 4 Depth = 17.5 feet	POND LEVEL	7'				
	*FREEBOARD	10.5'				
	NE UNDERDRAIN	36	132.7	17.5		
	NM UNDERDRAIN	16	96.1	14.8		
	NW UNDERDRAIN	17	137.6	17.4		
	SE UNDERDRAIN	45	104.0	17.9		
	SM UNDERDRAIN	16	88.9	14.4		
	SW UNDERDRAIN	18	129.9	17.4		

R & D POND LEVELS (Depth = 15 ft)
EAST LEVEL: 9.5
**EAST FREEBOARD: 5.5
EAST UNDERDRAIN: 2
WEST LEVEL: 10.3
**WEST FREEBOARD: 4.7
WEST UNDERDRAIN: 0

REMARKS: Breezy

*COMMERCIAL POND FREEBOARD = 5 FT MAX

** R&D POND FREEBOARD = 3 FT MAX

SAMPLER: R. Pelton

DATE: 6-23-10

CROW BUTTE RESOURCES, INC.
WEEKLY EVAPORATION POND UNDERDRAIN ANALYSIS

WN 7/1.

COMMERCIAL PONDS		UNDERDRAIN WATER DEPTH / INCHES	METER READING	TEMP °C	CONDUCTIVITY µmhos/cm	LAB RESULTS µmhos/cm
POND # 1 Depth = 17 feet	POND LEVEL	8.9'				
	*FREEBOARD	8.1'				
	NE UNDERDRAIN	1				
	NM UNDERDRAIN	1				
	NW UNDERDRAIN	3				
	SE UNDERDRAIN	0				
	SM UNDERDRAIN	0				
	SW UNDERDRAIN	10	88.4 ms	14.9		
POND # 3 Depth = 17.5 feet	POND LEVEL	10.4'				
	*FREEBOARD	7.1'				
	NE UNDERDRAIN	4				
	NM UNDERDRAIN	9	16.74 ms			
	NW UNDERDRAIN	14	87.2 ms			
	SE UNDERDRAIN	0				
	SM UNDERDRAIN	4				
	SW UNDERDRAIN	5				
POND # 4 Depth = 17.5 feet	POND LEVEL	7.0'				
	*FREEBOARD	10.5'				
	NE UNDERDRAIN	36	135.0	17.4		
	NM UNDERDRAIN	15	86.6	15.2		
	NW UNDERDRAIN	18	140.8	17.8		
	SE UNDERDRAIN	45	108.8	19.2		
	SM UNDERDRAIN	25	98.7	14.8		
	SW UNDERDRAIN	20	127.6	17.6		

R & D POND LEVELS (Depth = 15 ft)
EAST LEVEL: 9.5'
**EAST FREEBOARD: 5.5'
EAST UNDERDRAIN: 2
WEST LEVEL: 10.3'
**WEST FREEBOARD: ~~10.3~~ 4.7'
WEST UNDERDRAIN: 0

REMARKS: Very windy - Monthly

*COMMERCIAL POND FREEBOARD = 5 FT MAX

** R&D POND FREEBOARD = 3 FT MAX

SAMPLER: Pelton

DATE: 6-30-10

CROW BUTTE RESOURCES, INC.
WEEKLY EVAPORATION POND UNDERDRAIN ANALYSIS

COMMERCIAL PONDS		UNDERDRAIN WATER DEPTH / INCHES	METER READING	TEMP °C	CONDUCTIVITY µmhos/cm	LAB RESULTS µmhos/cm
POND # 1 Depth = 17 feet	POND LEVEL	8.5'				
	*FREEBOARD	8.5'				
	NE UNDERDRAIN	1"				
	NM UNDERDRAIN	1"				
	NW UNDERDRAIN	3"				
	SE UNDERDRAIN	0				
	SM UNDERDRAIN	0				
	SW UNDERDRAIN	10"	90.3ms	15.1		
POND # 3 Depth = 17.5 feet	POND LEVEL	10'				
	*FREEBOARD	7.5'				
	NE UNDERDRAIN	4"				
	NM UNDERDRAIN	9"	16.92 ms	13.6		
	NW UNDERDRAIN	14"	89.2 ms	14.7		
	SE UNDERDRAIN	0				
	SM UNDERDRAIN	5"				
	SW UNDERDRAIN	5"				
POND # 4 Depth = 17.5 feet	POND LEVEL	7.5'				
	*FREEBOARD	10.0'				
	NE UNDERDRAIN	36"	135.0 ms	18.4		
	NM UNDERDRAIN	27"	102.8 ms	15.3		
	NW UNDERDRAIN	16"	138.8 ms	18.2		
	SE UNDERDRAIN	45"	109.1 ms	19.		
	SM UNDERDRAIN	28"	103.1 ms	15.		
	SW UNDERDRAIN	21"	129.3 ms	18.		

R & D POND LEVELS (Depth = 15 ft)
EAST LEVEL: 9.4'
**EAST FREEBOARD: 5.6'
EAST UNDERDRAIN: 2
WEST LEVEL: 10.2'
**WEST FREEBOARD: 4.8'
WEST UNDERDRAIN: 0

REMARKS: Very nice & calm

*COMMERCIAL POND FREEBOARD = 5 FT MAX

** R&D POND FREEBOARD = 3 FT MAX

SAMPLER: Bass - Pelton

DATE: 7-7-10