



August 25, 2010

ATTN: Document Control Desk

Mr. Keith J. McConnell, Deputy Director
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RE: NRC License SUA-1548, Docket No. 40-8964, Semi-Annual Effluent and Environmental Monitoring Report, January 1 through June 30, 2010

Dear Mr. McConnell:

In accordance with 10 CFR 40.65 and per License Condition No. 12.2 of Source Materials License SUA-1548, please find enclosed the Semi-Annual Effluent and Environmental Monitoring Report for the period January 1 through June 30, 2010. Two copies of this report are also being forwarded to Mr. Douglas Mandeville, USNRC Headquarters and Mr. Arthur Howell, Director, Division of Nuclear Materials Safety, Region IV.

If you have questions regarding the report, please contact Angelo Kallas at (307) 358-6541, ext. 474.

Sincerely,

A handwritten signature in black ink, appearing to read "T. Young".

Thomas P. Young
Vice-President, Operations
Cameco Resources

Attachments: Semi-Annual Effluent and Environmental Monitoring Report

TY/kg

cc: A. Kallas w/atta J. Brister w/atta D. Mandeville, USNRC w/2 atta
A. Howell, DDNMS w/atta File SR 4.6.4.1 w/atta

**POWER RESOURCES, INC.
D/B/A CAMECO RESOURCES**

**USNRC SOURCE MATERIAL LICENSE
NO. SUA-1548**

DOCKET NO. 40-8964

**SEMI-ANNUAL EFFLUENT AND
ENVIRONMENTAL MONITORING
REPORT**

FOR THE PERIOD

**JANUARY 1 THROUGH
JUNE 30, 2010**

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1.0 RESULTS FROM EMPLOYEE URINALYSES IF AN EXPOSURE EXCEEDS ACTION LEVELS DESCRIBED IN THE OPERATIONS PLAN OF THE APPROVED LICENSE APPLICATION

No bio-assays exceeded the action level of 15 µg/L uranium during the report period.

2.0 INJECTION RATES, RECOVERY RATES, AND INJECTION TRUNK-LINE PRESSURES FOR EACH SATELLITE FACILITY

Tables 1A through 1D of Attachment A contain rate and pressure data at the satellite facilities for the period of the report.

2.1 Satellite No. 1

Satellite No. 1 did not operate during the report period, as restoration activities in the A and B Wellfield are complete. Mine Unit-B is awaiting NRC approval of restoration, and surface reclamation will begin with approval of a decommissioning plan. Therefore, no injection or recovery rates are available for the report period, as shown in Table 1A.

2.2 Satellite No. 2, Satellite No. 3, Central Processing Plant, Satellite SR-1, Satellite SR-2

The injection rates, recovery rates, and injection pressure data for Satellite No. 2, Satellite No. 3, Satellite SR-1, Satellite SR-2, and the Central Processing Plant (CPP) are contained in Tables 1B, 1C, and 1D. The injection rates represent the total recovery rates minus the purge (clean-out circuit) flow. The purge flow from Satellites No. 2 and No. 3 is treated for uranium, radium and selenium removal and pumped to the Satellite No. 2 Purge Storage Reservoir (PSR-2) prior to disposal by irrigation at the Satellite No. 2 Land Application Facility (Irrigator #2). Purge flow from Satellites SR-1 and SR-2, and the CPP is disposed by deep well injection through permitted waste disposal wells.

3.0 RESULTS OF EFFLUENT AND ENVIRONMENTAL MONITORING INCLUDING WATER QUALITY ANALYSES AND MONITORING REQUIRED BY THE WDEQ PERMIT FOR THE OPERATING IRRIGATION SYSTEMS

3.1 Stack Emission Surveys

When the Central Processing Facility (CPF) at the Highland Uranium Project is operational, Cameco Resources (CR) monitors the Yellowcake Dryer and Packaging scrubber exhaust stacks to determine the emission rate of particulates, uranium, radium, and thorium. During the report period, the Highland CPF remained on non-operating standby status and is anticipated to maintain that status during several upcoming report periods. All yellowcake processing activities (elution, precipitation, drying, and packaging) were conducted at the Smith Ranch CPP. The dryers at the CPP are zero emission vacuum dryers that do not require emission stack testing. Therefore, no stack tests were conducted during the report period.

3.2 Air Particulate, Radon, and Gamma Radiation Monitoring

CR maintains an Air Monitoring Station program at six various locations on and around the licensed area. The air monitoring stations are used to monitor air particulates, passive radon gas, and passive gamma radiation. Two of these stations (AS-4 and AS-5) are used to monitor downwind conditions of the Highland CPF and are operated only when yellowcake processing operations are active at the Highland CPF. One additional station (AS-6) will be used to monitor conditions downwind of the Reynolds Ranch Satellite Facility once the facility is constructed and becomes operational. Monitoring conditions at AS-6 will commence during construction of the facility and before it becomes operational. The monitoring results for each radionuclide are averaged and compared to background, for use in calculating annual dose to the public.

The air stations are located as follows:

- Air Station No. 1 (AS-1; Dave's Water Well): This station monitors background conditions, upwind of both the Smith Ranch and HUP wellfields and yellowcake processing facilities.
- Air Station No. 2 (AS-2; Smith Ranch Restricted Area): This station monitors conditions downwind of the Smith Ranch CPP Restricted Area Boundary.
- Air Station No. 3 (AS-3; Vollman Ranch): This station monitors the nearest downwind resident to the Smith Ranch CPP Restricted Area.
- Air Station No. 4 (AS-4; HUP Restricted Area): This station monitors conditions downwind of the HUP CPF Restricted Area Boundary (when the HUP CPF is operating).
- Air Station No. 5 (AS-5; Fowler Ranch): This station monitors the nearest downwind resident to the HUP CPF Restricted Area (when the HUP CPF is operating).
- Air Station No. 6 (AS-6; Reynolds Ranch Satellite Area): This station will monitor conditions downwind of the Reynolds Ranch Satellite Facility once the facility is constructed and becomes operational.

Monitoring at stations AS-4 and AS-5 was not conducted during the report period since the Highland CPF remains on standby status. Monitoring of conditions at AS-4 and AS-5 will only resume if the Highland CPF becomes operational. In addition, monitoring at station AS-6 was not conducted during the report period since the Reynolds Ranch Satellite Facility has not been constructed. Monitoring of conditions at AS-6 will commence during construction of the facility and before it becomes operational.

Table 2 shows the air particulate and radon data collected at stations AS-1 through AS-3 during the report period. Review of data collected during the report period shows that the concentrations of all parameters are significantly less than the 10 CFR 20, Appendix B, Effluent Concentration Limits.

Table 3 shows the gamma radiation data collected at stations AS-1 through AS-3 during the report period. Review of data collected during the report period shows that gamma radiation levels were within the range of previously reported values and comparable to upwind background values at station AS-1.

3.3 Water Sampling Data

3.3.1 *Groundwater and Surface Water Monitoring Stations*

During the report period, monitoring was completed at 20 water wells and 10 stock ponds throughout the permit area. Water samples are collected from the water wells and stock ponds on a quarterly basis for analysis of uranium and radium-226. Table 4 provides the analytical data for samples collected during the report period. A review of data collected during the report period shows that three stock ponds (SW-2, SW-3 and SW-4) were dry and there was no water available for sampling. Stock pond SW-10 was frozen the entire first quarter and inaccessible the second quarter, as the gate had been wired shut and could not be opened. Five water wells (GW-3, 5, 6, 8, and 12) did not run during the report period. A review of data collected from the available water wells and stock ponds show that the concentrations of uranium and radium-226 are less than the effluent concentration limits, as shows in 10 CFR 20, Appendix B.

3.4 Wastewater Land Application Facilities Monitoring

3.4.1 *Soil and Vegetation Sampling*

In accordance with the approved license application and the WDEQ permits for the Satellite No. 1 and Satellite No. 2 Wastewater Land Application Facilities, soil and vegetation sampling of the irrigation areas is conducted in late summer of each year. The soil and vegetation data are collected to monitor and evaluate any adverse effects to the irrigation areas. The 2010 soil and vegetation sampling at the irrigation areas will be conducted in August 2010 and results will be included with the July 1 through December 31, 2010 semi-annual report.

3.4.2 *Irrigation Fluid*

CR monitors the treated irrigation fluid that is disposed of at both irrigation facilities per the approved license application and the WDEQ Wastewater Land Application permits. Grab samples are collected at the irrigator pivot during each month of operation and analyzed for various parameters. Irrigators No. 1 and No. 2 were not operational for the entire reporting period, as noted in Tables 5 and 6, respectively.

3.4.3 Radium Treatment Systems

CR collects grab samples each month to ensure that the radium-226 treatment systems are adequately treating wastewater from Satellites No. 2 and No. 3 prior to discharge into the PSR-2. No samples were collected from the Satellite No. 1 radium treatment system since Satellite No. 1 did not operate during the report period. The monthly radium-226 grab samples for Satellite No. 2 and No. 3 are collected at the discharge points of the radium treatment system at each facility.

The results of this monitoring are included in Table 7A and 7B. As reported to Mr. Doug Mandeville of the NRC on July 8, 2010, the June 2010 sample from Satellite 2 was inadvertently missed. A monthly composite sample collected at the point where wastewater from Satellite 2 and Satellite 3 is comingled prior to entering the selenium treatment facility was analyzed for Radium 226 and that result is reported in Table 7A. Beginning in July, 2010 radium sampling of the wastewater streams will be performed at the point where wastewaters from Satellite 2 and Satellite 3 are comingled prior to entering the selenium treatment facility.

Review of the monitoring data shows that the radium-226 concentrations were slightly above the 10 CFR 20, Appendix B, Effluent Concentration Limit of $6.00\text{E-}8$ $\mu\text{Ci/ml}$ at Satellite No.3 in January. All other concentrations were below the limit.

3.4.4 Soil Water

In accordance with the approved SUA1548 license and the WDEQ Wastewater Land Application Facility permits, CR collects soil water samples at the irrigation areas in June of each year and analyzes them for various parameters, including uranium and radium-226. The 2010 sampling was conducted on June 10. As no irrigation had been performed prior the sampling, limited water was available and CR was unable to obtain a sample from any of the lysimeters, as shown in Tables 8A and 8B. A contractor was employed to evaluate the lysimeters and recommend what options are available in an effort to obtain soil water samples from the irrigators in the future.

3.4.5 Satellite No. 1 Purge Storage Reservoir Monitor Well

A shallow monitor well, located southwest of the Satellite No. 1 Purge Storage Reservoir (PSR-1) is monitored at least weekly for potential seepage from the reservoir. There was no evidence of seepage during the report period. PSR-1 was dry for the entire period and it is not anticipated that water will be diverted to PSR-1 in the near future. It is unlikely there will be any seepage from PSR-1 in the following reporting periods.

3.4.6 Satellite No. 2 Purge Storage Reservoir Shallow Wells

Water levels are measured on a quarterly basis and ground water samples are required on a semi-annual basis from the two shallow monitoring wells located adjacent to PSR-2. CR conducts quarterly sampling of both wells. Shallow Wells No. 1 and No.

2 are located adjacent to the south and east sides of the reservoir, respectively. In addition, 4 new monitoring wells were installed around the perimeter of PSR-2 for supplemental internal investigation regarding PSR-2. The wells are designated MW-1S (west), MW-2S (north), MW-3S (south) and MW-4S (east). Monitoring of the wells was conducted on March 23 and June 25, 2010. Table 9 contains the data for samples taken during this period.

4.0 SAFETY AND ENVIRONMENTAL EVALUATIONS

All safety and environmental evaluations made by the Safety and Environmental Review Panel (SERP) and resulting changed pages to the Operations Plan and Reclamation Plan of the approved license must be submitted on an annual basis. During the period January 1 through July 31, CR completed the following Safety and Environmental Evaluations (provided in Attachment B):

- Deep Disposal Wells SR-HUP dated February 2, 2010
- Organizational Restructure for EHS Reporting dated February 10, 2010

5.0 NRC ANNUAL INSPECTION

The Annual Inspection was conducted February 22 through February 25, 2010 and resulted in one level IV violation regarding improper posting of radiation areas (abated).

6.0 GAS HILLS, RUTH AND NORTH BUTTE ISL PROJECTS

The Gas Hills, Ruth and North Butte ISL Projects are licensed for commercial ISL uranium recovery activities as satellite facilities to the Smith Ranch-Highland Uranium Project. The projects remained non-operational during the report period, therefore, no effluent or environmental monitoring was conducted during the report period nor is it required by the NRC. Activities conducted during the report period consisted of quarterly inspections of the Ruth evaporation ponds in accordance with License Condition 10.2.2 of SUA-1548. Inspection of the perimeter fence, pond embankments, and pond liners yielded no deficiencies during the report period.

ATTACHMENT A

DATA TABLES 1-9

TABLE 1

**RATES AND PRESSURES
SATELLITE FACILITIES
1st and 2nd Quarters 2010**

**TABLE 1A
SATELLITE NO. 1 INJECTION RATES, RECOVERY RATES, INJECTION PRESSURES
(Satellite No. 1 has been non-operational since July 2004)**

MONTH	Injection Pressure (PSI)			Grounwater Sweep GPM	Radium Ponds GPM	RO Feed GPM	Injection GPM	RO Concentrate GPM	Purge Flow GPM
	RO #1	RO #2	RO #3						
Jan-10	0	0	0	0	0	0	0	0	0
Feb-10	0	0	0	0	0	0	0	0	0
Mar-10	0	0	0	0	0	0	0	0	0
Apr-10	0	0	0	0	0	0	0	0	0
May-10	0	0	0	0	0	0	0	0	0
Jun-10	0	0	0	0	0	0	0	0	0

**TABLE 1B
AVERAGE INJECTION RATES (GPM)**

MONTH	Satellite No. 2	Satellite No. 3	Central Processing Plant	Satellite SR-1	Satellite SR-2
Jan-10	1,872	3,708	1,380	2,541	2,621
Feb-10	1,819	3,821	1,450	2,245	2,507
Mar-10	1,784	3,724	1,479	2,326	2,715
Apr-10	1,720	3,748	1,498	2,337	3,273
May-10	1,633	3,621	1,372	2,196	3,438
Jun-10	1,656	3,538	1,364	2,338	3,630

**TABLE 1C
AVERAGE RECOVERY RATES (GPM)**

MONTH	Satellite No. 2	Satellite No. 3	Central Processing Plant	Satellite SR-1	Satellite SR-2
Jan-10	1,904	3,737	1,395	2,566	2,637
Feb-10	1,869	3,862	1,463	2,265	2,522
Mar-10	1,841	3,770	1,494	2,348	2,731
Apr-10	1,766	3,771	1,510	2,356	3,292
May-10	1,679	3,647	1,381	2,211	3,459
Jun-10	1,706	3,569	1,371	2,349	3,651

**TABLE 1D
INJECTION TRUNK LINE PRESSURES (PSI)**

MONTH	Satellite No. 2	Satellite No. 3	Central Processing Plant	Satellite SR-1	Satellite SR-2
Jan-10	100	120	157	92	180
Feb-10	104	124	159	84	180
Mar-10	103	123	153	82	179
Apr-10	99	118	160	86	177
May-10	96	134	142	74	143
Jun-10	99	133	131	60	177

TABLE 2
AIR SAMPLING DATA
ENVIRONMENTAL MONITORING SITES
1st and 2nd Quarters 2010

SAMPLE LOCATION	SAMPLE PERIOD	RADIONUCLIDE ($\mu\text{Ci/ml}$)	CONCENTRATION ($\mu\text{Ci/ml}$)	ERROR EST. +/- ($\mu\text{Ci/ml}$)	L.L.D. ($\mu\text{Ci/ml}$)	EFF. CONC. LIMIT ($\mu\text{Ci/ml}$)	% EFF. CONC. LIMIT %
AS-1							
DAVE'S WATER WELL Air Station Background Site	1st Quarter	U-Nat	1.04E-16	N/A	1.00E-16	9.00E-14	0.1
		Th-230	<1E-16	4.06E-17	1.00E-16	3.00E-14	
		Ra-226	<1E-16	5.31E-17	1.00E-16	9.00E-13	
		Pb-210	9.76E-15	9.68E-16	2.00E-15	6.00E-13	1.6
	2nd Quarter	U-Nat	1.32E-16	N/A	1.00E-16	9.00E-14	0.1
		Th-230	<1E-16	5.02E-17	1.00E-16	3.00E-14	
		Ra-226	<1E-16	3.54E-17	1.00E-16	9.00E-13	
		Pb-210	4.03E-15	6.02E-16	2.00E-15	6.00E-13	0.7
	All Period	Rn-222	8.00E-10		3.00E-10	1.00E-08	8.0
AS-2							
FENCE LINE Air Station Restricted Area Boundary (Background not deducted)	1st Quarter	U-Nat	3.97E-16		1.00E-16	9.00E-14	0.4
		Th-230	<1E-16		1.00E-16	3.00E-14	
		Ra-226	<1E-16		1.00E-16	9.00E-13	
		Pb-210	1.74E-14		2.00E-15	6.00E-13	2.9
	2nd Quarter	U-Nat	8.00E-15	N/A	1.00E-16	9.00E-14	8.9
		Th-230	1.07E-16	6.01E-17	1.00E-16	3.00E-14	0.4
		Ra-226	1.05E-16	7.66E-17	1.00E-16	9.00E-13	0.0
		Pb-210	4.96E-15	6.13E-16	2.00E-15	6.00E-13	0.8
	All Period	Rn-222	1.20E-09		3.00E-10	1.00E-08	12.0
AS-3							
VOLLMAN RANCH Air Station Downwind Nearest Residence (Background not deducted)	1st Quarter	U-Nat	9.76E-16	N/A	1.00E-16	9.00E-14	1.1
		Th-230	<1E-16	4.22E-17	1.00E-16	3.00E-14	0.0
		Ra-226	<1E-16	4.48E-17	1.00E-16	9.00E-13	0.0
		Pb-210	1.13E-15	1.13E-15	2.00E-15	6.00E-13	0.2
	2nd Quarter	U-Nat	5.34E-16	N/A	1.00E-16	9.00E-14	0.6
		Th-230	<1E-16	2.38E-17	1.00E-16	3.00E-14	
		Ra-226	<1E-16	3.45E-17	1.00E-16	9.00E-13	
		Pb-210	4.96E-15	6.12E-16	2.00E-15	6.00E-13	0.8
	All Period	Rn-222	9.00E-10		3.00E-10	1.00E-08	9.0
AS-4 HUP RESTRICTED AREA		STANDBY STATUS					
AS-5 FOWLER RANCH		STANDBY STATUS					
AS-6 REYNOLDS SATELLITE		NOT CONSTRUCTED					

TABLE 3

**DIRECT RADIATION (GAMMA) MEASUREMENT DATA
ENVIRONMENTAL MONITORING SITES
1st & 2nd QUARTERS 2010**

SAMPLE LOCATION	SAMPLE PERIOD	EXPOSURE RATE (mR/qtr)
AS-1 DAVE'S WATER WELL		
Air Station	1st Quarter	40
Background		
Site	2nd Quarter	36
AS-2 FENCE LINE		
Air Station	1st Quarter	49
Restricted Area		
Boundary	2nd Quarter	42
AS-3 VOLLMAN'S RANCH		
Air Station	1st Quarter	43
Downwind		
Nearest Residence	2nd Quarter	35
AS-4 HUP RESTRICTED AREA	STANDBY STATUS	
AS-5 FOWLER RANCH	STANDBY STATUS	
AS-6 REYNOLDS SATELLITE	NOT CONSTRUCTED	
CONTROL	1st Quarter	40
	2nd Quarter	34

Background has not been deducted
From any readings

TABLE 4

**WATER SAMPLING DATA
ENVIRONMENTAL MONITORING SITES
1st and 2nd Quarters 2010**

SAMPLE LOCATION	SAMPLE DATE	RADIONUCLIDE	CONCENTRATION (mg/L)	CONCENTRATION (pCi/L)	ERROR EST. +/- (pCi/L)	CONCENTRATION (μCi/ml)	EFF. CONC. LIMIT (μCi/ml)	% EFF. CONC. LIMIT
SW-1 Stock Pond Section 3 T35N, R74W	1st Quarter	U-Nat Ra-226	0.0206			1.4E-08	3.0E-07	4.6
				0.50	1.50E-01	5.0E-10	6.0E-08	0.8
	2nd Quarter	U-Nat Ra-226	DRY				3.0E-07 6.0E-08	
SW-2 Stock Pond Section 2 T35N, R74W	1st Quarter	U-Nat Ra-226	DRY				3.0E-07 6.0E-08	
	2nd Quarter	U-Nat Ra-226	DRY				3.0E-07 6.0E-08	
SW-3 Stock Pond Section 35 T36N, R74W	1st Quarter	U-Nat Ra-226	DRY				3.0E-07 6.0E-08	
	2nd Quarter	U-Nat Ra-226	DRY				3.0E-07 6.0E-08	
SW-4 Stock Pond Section 36 T36N, R74W	1st Quarter	U-Nat Ra-226	DRY				3.0E-07 6.0E-08	
	2nd Quarter	U-Nat Ra-226	DRY				3.0E-07 6.0E-08	
SW-5 Stock Pond Section 21 T36N, R73W	1st Quarter	U-Nat Ra-226	0.0004			2.7E-10	3.0E-07	0.1
				0.36	1.50E-01	3.6E-10	6.0E-08	0.6
	2nd Quarter	U-Nat Ra-226	0.0011			7.4E-10	3.0E-07	0.2
				0.51	1.70E-01	5.1E-10	6.0E-08	0.9

TABLE 4

**WATER SAMPLING DATA
ENVIRONMENTAL MONITORING SITES
1st and 2nd Quarters 2010**

SAMPLE LOCATION	SAMPLE DATE	RADIONUCLIDE	CONCENTRATION (mg/L)	CONCENTRATION (pCi/L)	ERROR EST. +/- (pCi/L)	CONCENTRATION (μCi/ml)	EFF. CONC. LIMIT (μCi/ml)	% EFF. CONC. LIMIT
SW-6 Stock Pond Section 22	1st Quarter	U-Nat Ra-226	<.0003	0.23	1.40E-01	2.3E-10	3.0E-07 6.0E-08	0.4
	2nd Quarter	U-Nat Ra-226	0.0025	0.11	1.10E-01	1.7E-09 1.1E-10	3.0E-07 6.0E-08	0.6 0.2
SW-7 Stock Pond Section 22 T36N, R73W	1st Quarter	U-Nat Ra-226	<.0003	0.13	1.10E-01	1.3E-10	3.0E-07 6.0E-08	0.2
	2nd Quarter	U-Nat Ra-226	0.0005	0.05	1.60E-01	3.4E-10 5.0E-11	3.0E-07 6.0E-08	0.1 0.1
SW-8 Stock Pond Section 18 T36N, R72W	1st Quarter	U-Nat Ra-226	0.0016	0.10	1.00E-01	1.1E-09 1.0E-10	3.0E-07 6.0E-08	0.4 0.2
	2nd Quarter	U-Nat Ra-226	0.0004	0.10	1.00E-01	2.7E-10 2.2E-10	3.0E-07 6.0E-08	0.1 0.4
SW-9 Stock Pond Section 18 T36N, R72W	1st Quarter	U-Nat Ra-226	<.0003	0.07	1.10E-01	7.0E-11	3.0E-07 6.0E-08	0.1
	2nd Quarter	U-Nat Ra-226	0.0005	Below Detection		3.4E-10	3.0E-07 6.0E-08	0.1
SW-10 Stock Pond Section 19 T36N, R72W	1st Quarter	U-Nat Ra-226	FROZEN				3.0E-07 6.0E-08	
	2nd Quarter	U-Nat Ra-226	CANNOT ACCESS				3.0E-07 6.0E-08	

TABLE 4

**WATER SAMPLING DATA
ENVIRONMENTAL MONITORING SITES
1st and 2nd Quarters 2010**

SAMPLE LOCATION	SAMPLE DATE	RADIONUCLIDE	CONCENTRATION (mg/L)	CONCENTRATION (pCi/L)	ERROR EST. +/- (pCi/L)	CONCENTRATION (μCi/ml)	EFF. CONC. LIMIT (μCi/ml)	% EFF. CONC. LIMIT
GW-1 Windmill Section 1 T35N, R74W	1st Quarter	U-Nat	0.0041			2.8E-09	3.0E-07	0.9
		Ra-226		1.90	0.28	1.9E-09	6.0E-08	3.2
	2nd Quarter	U-Nat	0.0241			1.6E-08	3.0E-07	5.4
		Ra-226		1.20	2.10E-01	1.2E-09	6.0E-08	2.0
GW-2 Water Well Section 35 T36N, R74W	1st Quarter	U-Nat	0.0172			1.2E-08	3.0E-07	3.9
		Ra-226		0.93	0.21	9.3E-10	6.0E-08	1.6
	2nd Quarter	U-Nat	0.0584			4.0E-08	3.0E-07	13.2
		Ra-226		1.10	2.60E-01	1.1E-09	6.0E-08	1.8
GW-3 Windmill Section 27 T36N, R74W	1st Quarter	U-Nat	NOT RUNNING				3.0E-07	0.0
		Ra-226					6.0E-08	0.0
	2nd Quarter	U-Nat	NOT RUNNING				3.0E-07	0.0
		Ra-226					6.0E-08	0.0
GW-4 Windmill Section 23 T36N, R74W	1st Quarter	U-Nat	NOT RUNNING				3.0E-07	
		Ra-226					6.0E-08	
	2nd Quarter	U-Nat	0.0753			5.1E-08	3.0E-07	17.0
		Ra-226		0.47	1.70E-01	4.7E-10	6.0E-08	0.8
GW-5 Windmill Section 30 T36N, R73W	1st Quarter	U-Nat	NOT RUNNING				3.0E-07	
		Ra-226					6.0E-08	
	2nd Quarter	U-Nat	NOT RUNNING				3.0E-07	
		Ra-226					6.0E-08	

TABLE 4

**WATER SAMPLING DATA
ENVIRONMENTAL MONITORING SITES
1st and 2nd Quarters 2010**

SAMPLE LOCATION	SAMPLE DATE	RADIONUCLIDE	CONCENTRATION (mg/L)	CONCENTRATION (pCi/L)	ERROR EST. +/- (pCi/L)	CONCENTRATION (μCi/ml)	EFF. CONC. LIMIT (μCi/ml)	% EFF. CONC. LIMIT
GW-6 Windmill Section 28 T36N, R73W	1st Quarter	U-Nat Ra-226	NOT RUNNING				3.0E-07 6.0E-08	
	2nd Quarter	U-Nat Ra-226	NOT RUNNING				3.0E-07 6.0E-08	
GW-8 Windmill Section 23 T36N, R73W	1st Quarter	U-Nat Ra-226	NOT RUNNING				3.0E-07 6.0E-08	
	2nd Quarter	U-Nat Ra-226	NOT RUNNING				3.0E-07 6.0E-08	
GW-9 Windmill Section 14 T36N, R73W	1st Quarter	U-Nat Ra-226	NOT RUNNING				3.0E-07 6.0E-08	
	2nd Quarter	U-Nat Ra-226	0.0012	Below Detection	8.00E-02	8.1E-10	3.0E-07 6.0E-08	0.3
GW-10 Water Well Section 14 T36N, R73W	1st Quarter	U-Nat Ra-226	NOT RUNNING				3.0E-07 6.0E-08	
	2nd Quarter	U-Nat Ra-226	0.0266	0.31	1.60E-01	1.8E-08 3.1E-10	3.0E-07 6.0E-08	6.0 0.5
GW-11 Water Well Section 11 T36N, R73W	1st Quarter	U-Nat Ra-226	NOT RUNNING				3.0E-07 6.0E-08	
	2nd Quarter	U-Nat Ra-226	0.0007	0.35	1.40E-01	4.7E-10 3.5E-10	3.0E-07 6.0E-08	0.2 0.6

TABLE 4

**WATER SAMPLING DATA
ENVIRONMENTAL MONITORING SITES
1st and 2nd Quarters 2010**

SAMPLE LOCATION	SAMPLE DATE	RADIONUCLIDE	CONCENTRATION (mg/L)	CONCENTRATION (pCi/L)	ERROR EST. +/- (pCi/L)	CONCENTRATION (μCi/ml)	EFF. CONC. LIMIT (μCi/ml)	% EFF. CONC. LIMIT
GW-12 Water Well Section 7 T36N, R72W	1st Quarter	U-Nat Ra-226	NOT RUNNING				3.0E-07 6.0E-08	
	2nd Quarter	U-Nat Ra-226	NOT RUNNING				3.0E-07 6.0E-08	
GW-13 Water Well Section 9 T36N, R72W	1st Quarter	U-Nat Ra-226	0.0032	0.93	2.00E-01	2.2E-09 9.3E-10	3.0E-07 6.0E-08	0.7 1.6
	2nd Quarter	U-Nat Ra-226	NOT RUNNING				3.0E-07 6.0E-08	
GW-14 Water Well Section 10 T36N, R72W	1st Quarter	U-Nat Ra-226	0.0017	2.20	3.10E-01	1.2E-09 2.2E-09	3.0E-07 6.0E-08	0.4 3.7
	2nd Quarter	U-Nat Ra-226	0.0017	1.40	2.30E-01	1.2E-09 1.4E-09	3.0E-07 6.0E-08	0.4 2.3
GW-15 Water Well Section 15 T36N, R72W	1st Quarter	U-Nat Ra-226	0.0180	1.20	2.30E-01	1.2E-08 1.2E-09	3.0E-07 6.0E-08	4.1 2.0
	2nd Quarter	U-Nat Ra-226	0.0157	1.10	2.30E-01	1.1E-08 1.1E-09	3.0E-07 6.0E-08	3.5 1.8
GW-16 Water Well Section 11 T36N, R72W	1st Quarter	U-Nat Ra-226	NOT RUNNING				3.0E-07 6.0E-08	
	2nd Quarter	U-Nat Ra-226	0.1530	1.20	2.00E-01	1.0E-07 1.2E-09	3.0E-07 6.0E-08	34.5 2.0

TABLE 4

**WATER SAMPLING DATA
ENVIRONMENTAL MONITORING SITES
1st and 2nd Quarters 2010**

SAMPLE LOCATION	SAMPLE DATE	RADIONUCLIDE	CONCENTRATION (mg/L)	CONCENTRATION (pCi/L)	ERROR EST. +/- (pCi/L)	CONCENTRATION (μCi/ml)	EFF. CONC. LIMIT (μCi/ml)	% EFF. CONC. LIMIT
GW-17 Water Well Section 8 T36N, R72W	1st Quarter	U-Nat	0.0025			1.7E-09	3.0E-07	0.6
		Ra-226		0.69	1.80E-01	6.9E-10	6.0E-08	1.2
	2nd Quarter	U-Nat	0.0022			1.5E-09	3.0E-07	0.5
		Ra-226		0.30	1.20E-01	3.0E-10	6.0E-08	0.5
GW-18 Water Well Section 2 T36N, R72W	1st Quarter	U-Nat	0.0149			1.0E-08	3.0E-07	3.4
		Ra-226		1.60	2.80E-01	1.6E-09	6.0E-08	2.7
	2nd Quarter	U-Nat	NOT RUNNING				3.0E-07	
		Ra-226					6.0E-08	
GW-20 Water Well Section 27 T36N, R73W	1st Quarter	U-Nat	<.0003				3.0E-07	
		Ra-226		0.31	1.40E-01	3.1E-10	6.0E-08	0.5
	2nd Quarter	U-Nat	<.0003				3.0E-07	
		Ra-226		0.09	1.20E-01	9E-11	6.0E-08	0.2

TABLE 5

SATELLITE NO. 1
LAND APPLICATION FACILITY (IRRIGATOR NO. 1)
MONTHLY IRRIGATION FLUID DATA
1st and 2nd Quarters 2010

IRRIGATION CYCLE

DATE SAMPLED	Jan-10	Feb-10	Mar-10	Apr-10	May-10	Jun-10
--------------	--------	--------	--------	--------	--------	--------

VOLUME (AF)

MAJOR IONS (mg/L)

Reporting
Limit

Calcium

1.0

Magnesium

1.0

Sodium

1.0

Potassium

1.0

Bicarbonate

1.0

Sulfate

1.0

Chloride

1.0

IRRIGATOR DID NOT OPERATE ALL REPORTING PERIOD

NON-METALS

TDS @ 180° C (mg/L)

10.0

pH (standard units)

0.010

SAR

0.01

TRACE METALS (mg/L)

Arsenic

0.001

Barium

0.10

Boron

0.10

Selenium

0.001

RADIOMETRIC

U-nat (uCi/mL)

2.03E-10

Ra-226 (uCi/mL)

2.00E-10

Ra Err. Est. +/-

TABLE 6

SATELLITE NO. 2
LAND APPLICATION FACILITY (IRRIGATOR NO. 2)
MONTHLY IRRIGATION FLUID DATA
1st and 2nd Quarters 2010

IRRIGATION CYCLE

DATE SAMPLED		Jan-10	Feb-10	Mar-10	Apr-10	18-May-10	16-Jun-10
VOLUME (AF)							
MAJOR IONS (mg/L)	Reporting Limit						
Calcium	1.0						
Magnesium	1.0						
Sodium	1.0						
Potassium	1.0						
Bicarbonate	1.0						
Sulfate	1.0						
Chloride	1.0						
		IRRIGATOR DID NOT OPERATE ALL REPORTING PERIOD					
NON-METALS							
TDS @ 180° C (mg/L)	10.0						
pH (standard units)	0.010						
SAR	0.01						
TRACE METALS (mg/L)							
Arsenic	0.001						
Barium	0.1						
Boron	0.10						
Selenium	0.001						
RADIOMETRIC							
U-nat (uCi/mL)	2.03E-10						
Ra-226 (uCi/mL)	2.00E-10						
Ra Err. Est. +/-							

TABLE 7A

SATELLITE NO. 2
RADIUM TREATMENT SYSTEM DISCHARGE
MONTHLY RADIUM GRAB SAMPLES
1st and 2nd Quarters 2010

SAMPLE DATE		<u>Jan-10</u>	<u>Feb-10</u>	<u>Mar-10</u>	<u>Apr-10</u>	<u>May-10</u>	<u>Jun-10</u>
	Laboratory Reporting Limit						
RADIOMETRIC							
Ra-226 (uCi/mL)	2.00E-10	1.1E-09	3.8E-09	1.5E-09	1.5E-09	1.1E-08	2.10E-10
Ra Err. Est. +/-		2.1E-10	4E-11	2E-10	2.3E-10	6.1E-10	1.30E-10
Eff. Con. Limit	6.00E-08						

Note: The June sample was taken as a monthly composite of the comingled Sat. 2 and Sat. 3 wastewater at the selenium plant

TABLE 7B

SATELLITE NO. 3
RADIUM TREATMENT SYSTEM DISCHARGE
MONTHLY RADIUM GRAB SAMPLES
1st and 2nd Quarters 2010

SAMPLE DATE		<u>Jan-10</u>	<u>Feb-10</u>	<u>Mar-10</u>	<u>Apr-10</u>	<u>May-10</u>	<u>Jun-10</u>
	Laboratory Reporting Limit						
RADIOMETRIC							
Ra-226 (uCi/mL)	2.00E-10	6.5E-08	1.5E-09	4.8E-08	1.8E-09	2.3E-08	4.60E-08
Ra Err. Est. +/-		1.5E-09	2.7E-10	1.2E-09	2.5E-10	7.6E-10	1.30E-09
Eff. Con. Limit	6.00E-08						

TABLE 8A

SATELLITE NO. 1
LAND APPLICATION FACILITY (IRRIGATOR NO. 1)
ANNUAL SOIL WATER DATA
1st and 2nd Quarters 2010

SAMPLE SITE	2'	4'	6'
	NW¼	NW¼	NW¼
	NE¼	NE¼	NE¼
	SW¼	SW¼	SW¼
	SE¼	SE¼	SE¼
	Lysimeter Composite	Lysimeter Composite	Lysimeter Composite

SAMPLE DATE 06/30/09

MAJOR IONS (mg/L)	LABORATORY REP. LIMIT
-------------------	--------------------------

Bicarbonate	1.0
Sulfate	1.0
Chloride	1.0

INSUFFICIENT
WATER FOR
SAMPLING

NON-METALS

Cond (umho/cm)	1.0
pH (standard units)	0.010

TRACE METALS (mg/L)

Boron	0.10
Selenium	0.001

RADIOMETRIC

U-nat: (mg/L)	0.0003
Ra-226: (pCi/L)	0.2
Ra Err. Est. +/-	
U-nat: (uCi/mL)	2.03E-10
Ra-226: (uCi/mL)	2.00E-10
Ra Err. Est. +/-	

TABLE 8B

**SATELLITE NO. 2
SATELLITE NO. 2 LAND APPLICATION FACILITY (IRRIGATOR NO. 2)
ANNUAL SOIL WATER DATA
1st and 2nd Quarters 2009**

SAMPLE SITE	2'	4'	6'
	NW¼	NW¼	NW¼
	NE¼	NE¼	NE¼
	SW¼	SW¼	SW¼
	SE¼	SE¼	SE¼
	Lysimeter Composite	Lysimeter Composite	Lysimeter Composite

SAMPLE DATE 06/30/09

MAJOR IONS (mg/L) **LABORATORY**
 REP. LIMIT

Bicarbonate	1.0
Sulfate	1.0
Chloride	1.0

**INSUFFICIENT
WATER FOR
SAMPLING**

NON-METALS

Cond (umho/cm)	1.0
pH (standard units)	0.010

TRACE METALS (mg/L)

Boron	0.10
Selenium	0.001

RADIOMETRIC

U-nat: (mg/L)	0.0003
Ra-226: (pCi/L)	0.2
Ra Err. Est. +/-	
U-nat: (uCi/mL)	2.03E-10
Ra-226: (uCi/mL)	2.00E-10
Ra Err. Est. +/-	

TABLE 9

SATELLITE NO. 2
PURGE STORAGE RESERVOIR (PSR-2)
SHALLOW MONITORING WELLS
WATER LEVEL AND WATER QUALITY DATA
1st and 2nd Quarters 2010

SAMPLE SITE		Shallow Well (No. 1 South)		Shallow Well (No. 2 East)		MW-1S (West)		MW-2S (North)		MW-3S (South)		MW-4S (East)	
SAMPLE DATE		3/23/10	6/25/10	3/23/10	6/25/10	3/23/10	6/30/10	3/23/10	6/30/10	3/23/10	6/30/10	3/23/10	6/30/10
WATER LEVEL (DTW)	Laboratory Reporting Limit	13.74	12.2	10.5	9.8	19.4	18.2	21.5	19.4	22.3	21.6	33.8	33.4
MAJOR IONS (mg/L)													
Bicarbonate	1.0	343	310	321	427	456	COULD	393	COULD	404	COULD	590	548
Sulfate	1.0	2050	2190	2320	2340	1870	NOT	238	NOT	952	NOT	1790	1750
Chloride	1.0	254	321	376	502	269	GET SAMPLE	70	GET SAMPLE	516	GET SAMPLE	112	126
NON-METALS													
Cond (µmho/cm)	1.0	4280	4400	5050	5280	4400		1170		3490		3840	3600
pH (standard units)	0.01	7.74	7.59	7.29	7.36	7.07		7.31		7.4		7.03	6.92
TRACE METALS (mg/L)													
Barium	0.001	ND	ND	ND	ND	ND		ND		ND		ND	ND
Selenium	0.0025	2.210	2.020	0.038	0.065	1.76		0.004		N.254		0.895	0.498
Boron	0.1000	ND	ND	ND	ND	ND		ND		ND		ND	ND
Arsenic	0.0010	ND	ND	0.001	0.003	ND		ND		ND		0.002	ND
RADIOMETRIC													
U-nat (uCi/mL)	6.77E-10	2.48E-07	5.57E-08	3.47E-08	5.57E-08	3.9E-08		8.1E-10		5.3E-07		1.3E-07	8.9E-08
Ra-226 (uCi/mL)	2.00E-10	2.40E-10	1.40E-09	1.60E-09	7.70E-10	8.1E-10		1.4E-10		1.2E-10		2.5E-10	2E-09
Ra-226 Err. Est. +/- (uCi/mL)		1.10E-10	1.10E-10	2.20E-10	1.60E-10	1.1E-10		1.2E-10		1.2E-10		1.1E-10	3.2E-10

ATTACHMENT B

SAFETY AND ENVIRONMENTAL EVALUATIONS (1ST HALF 2010)



CAMECO RESOURCES
Smith Ranch-Highland
Operation

Inter-Office Memo

To: Tom Cannon

From: Miriam Whatley

Date: February 2, 2010

Cc: John McCarthy, Bob Hembree, Miriam Whatley

Subject: ORC/SERP 0-02082010-1 Deep Disposal Wells SR-HUP

A. SERP Evaluation Checklist

(New) Change, Test and Experiment License Condition

- a. The licensee may, without obtaining a license amendment pursuant to §40.44, and subject to conditions specified in (b) of this condition:
 - 1) Make changes in the facility as described in the license application (as updated).
 - 2) Make changes in the procedures as described in the license application (as updated), and
 - 3) Conduct test or experiments not described in the license application (as updated).
- b. NRC License Condition 9.4b of SUA-1548 requires a license amendment prior to implementing a proposed change, test or experiment. The SERP shall review the Checklist to determine if a license amendment is required prior to implementing a proposed change.

SERP Evaluation Checklist

NRC LICENSE REQUIREMENT	YES	NO	N/A
Results in any appreciable increase in the frequency of occurrence of an accident previously evaluated in the license application (as updated)		X	
Results in any appreciable increase in the likelihood of occurrence of a malfunction of a structure, system, or component (SSC) important to safety previously evaluated in the license application (as updated)		X	
Results in any appreciable increase in the consequences of an accident previously evaluated in the license application (as updated)		X	
Results in any appreciable increase in the consequences of a malfunction of an SSC previously evaluated in the license application (as updated)		X	
Creates a possibility for an accident of a different type than any previously evaluated in the license application (as updated)		X	
Creates a possibility for a malfunction of an SSC with a different result than previously evaluated in the license application (as updated)		X	
Results in a departure from the method of evaluation described in the license application (as updated) used in establishing the final safety evaluation report (FSER) or the environmental assessment (EA) or technical evaluation reports (TERs) or other analyses and evaluations for license amendments.		X	

If all questions are answered NO then implementation can begin. If any of the questions are answered YES then an amendment to License must be submitted and approval received from NRC prior to implementation.

B. SAFETY AND ENVIRONMENTAL REVIEW PANEL (SERP)

NRC License condition 9.4d of SUA-1548 requires that any changes, test or experiments made under the Performance Based License Condition be evaluated by a SERP committee consisting of at least three individuals. One member must have management expertise and have the financial and management responsibility for approving changes. The second member must have operational and/or construction expertise and have responsibility for implementing any operational changes. The third member must be the Radiation Safety Officer (RSO) with the responsibility of assuring that the proposed activities will conform to radiation safety and environmental requirements. Members selected to perform this SERP review include:

SERP Member	QUALIFICATIONS TITLE
Tom Cannon	General Operations Mgr.
John McCarthy	Assistant Manager, Safety, Health, Environment and Quality (SHEQ) and RSO
Miriam Whatley	SHEQ Coordinator
Bob Hembree	Engineering Mgr.

C. EVALUATION OF PROPOSED CHANGE/TEST

Operations/Technical Review

The operational and technical reviews were completed during the Operational Review Committee (ORC) process prior to the SERP review. The ORC minutes and supporting documentation contain information (maps, schematics, process descriptions, etc.) regarding discussion of the new Deep Disposal Wells.

Environmental/Safety Review

Review of Environmental Assessment (EA), dated May 8, 2001 and Safety Evaluation (SER) report dated April, 2001 has been completed. The Deep Disposal Wells are described in the EA beginning on page 12 and discusses the requirement for EPA/WDEQ approval. The aquifer exemption action is issued by the EPA. The SER describes the deep well injection beginning on page 9 and mentions the wells are the preferred method of disposal and permitted by WDEQ/EPA.

Review of the Reynolds Ranch Environmental Assessment, dated November 2006 and Safety Evaluation Report (SER) dated January 2007 has been completed. The Reynolds Ranch SER discusses deep well injection to dispose of "production bleed, plant wash-down water, ground water restoration equipment effluent, restoration bleed and facility sanitary waste (PRI 2004 (Section 4.2) and 2006a). Production bleed. Plant wash-down water, and ground water restoration water will be disposed through a deep injection well permitted under the ground water injection control (UIC) program through the Wyoming DEQ-Water Quality Division." The Reynolds Ranch EA discusses operational wastes "generated at the proposed Reynolds Ranch satellite facility would be disposed of through a deep injection well. These wastes would include production bleed stream, wash down water, and ground water sweep (i.e., from ground water sweep and ground water treatment activities). The planned deep injection well would be similar in design and depth to the current injection wells at Smith Ranch and located near the Reynolds Ranch area. This deep injection well would be permitted through the WDEQ and operating according to permit requirements."

The deep well installation will be the same as previously installed wells and the injection formations are identical to existing deep disposal wells and are referenced herein. The pipelines, pumps, wellhead, mechanical integrity test (MIT), fall-off test, monitoring and reporting are consistent with the existing deep injection wells. The sampling requirements for the renewed and new wells are detailed on page 14 of UIC Permit 09-054. There are additional sampling parameters on the table as compared to Permits UIC 04-611 and 99-347. The installation, MTI and Fall-off Tests are completed by consultants and contractors in consultation with Cameco Resources. The consultant will supply any required Professional Engineer's seal and signature. All consultants and contractors will comply with Cameco Resources' SHEQ policies and procedures.

The application for the new permit was prepared and submitted by a consulting Professional Engineer with concurrence with CR's Engineering Department and the Safety, Health, Environment and Quality Department (SHEQ).

Maintenance work at the well heads or pump stations may require a Radiation Work Permit and Job Hazard Analysis prior beginning the task. The Radiation Safety Officer and/or Supervisor will evaluate the need for the RWP/JHA and any additional safeguards.

Safety: Standard Operating Procedure SOP 2269 "Waste Disposal Well" will need to be updated to include the new well information, operating parameters and monitoring requirements. SHEQ Volume VI, Environmental Manual, 3.7 will need to be updated as appropriate. All contractor and consultants will comply with all site safety, health and environmental procedures and all applicable regulations.

Cultural: Cultural inventories and surveys have been evaluated for potential impact and the reviewed documentation is listed in references below. The drill sites will not impact any known cultural resource localities; however, as stated in SUA-1548, condition 9.9, "In order to ensure that no unapproved disturbance of cultural resources occurs, any work resulting in the discovery of previously unknown cultural artifacts shall cease. The artifacts shall be inventoried and evaluated in accordance with 36CFR Part 800, and no disturbance of the area shall occur until the licensee has received authorization from the NRC to proceed."

Security and Environmental Concerns: The well heads and pumps are located within the closest satellite or in dog houses at the well heads. The wells are checked daily for operational concerns and security purposes. The wellhead and pump enclosures are heated to prevent freezing. Pipelines are pressure tested prior to use and periodically there after. The operational monitoring requirements are detailed in the permits and Standard Operating Procedures. The wells/pumps are also operationally monitored at the Central Processing Plant or a satellite's PLC and results maintained on file. For security purposes, keypad locks will be installed on all doors accessing out buildings containing deep disposal well heads and pumps.

Compliance Review: Documents for review: NRC License, SUA 1548 (Amendment 15, September 15, 2009), supporting application (October 26, 1999) and the below referenced documents.

D. CONCLUSIONS

The deep injection wells described in Permit 09-054 will inject into the same receiving formations as the existing permitted wells. The well construction, monitoring and operation are analogous to the approved permitted wells. As noted above, the only difference will be in the sampling parameters and this will be address in the SOPs. The WDEQ/EPA has reviewed for completeness and approved the construction and operation for the wells listed in Permit 09-054. The SERP has reviewed the Permit and below

referenced documentation and has determined the deep injection wells are not contrary to the license or reviews conducted by the NRC during previous approvals.

E. **REFERENCES**

1. Wyoming Department of Environmental Quality/Water Quality Division.2009
“UIC Permit 09-054, Smith Ranch Highland Project Class I Injection Permit,
Converse County, WY”, October 8, 2009.

Wells included are:

Morton 1-20 (renewal)
Vollman 33-27 (renewal)
SRHUP No. 6 (new well)
SRHUP No. 7 (new well)
SRHUP No. 8 (new well)
SRHUP No. 9 (new well)
SRHUP No. 10 (new well)

2. Wyoming Department of Environmental Quality/Water Quality Division.2005
“REYNOLDS RANCH DISPOSAL WELL #1 UIC Facility WYS 009-044,
Permit UIC 04-611 Converse County, WY”, March 31, 2005.

Reynolds Ranch Deep Well #1

3. Wyoming Department of Environmental Quality/Water Quality Division.1999
UIC PERMIT 99-347, October 21, 1999

Smith Ranch Disposal Wells #1 and #2

4. United States Nuclear Regulatory Commission. 2007 “Environmental Assessment
for the Addition of the Reynolds Ranch Mining Area to Power Resources, Inc’s
Smith Ranch/Highlands Uranium Project Converse County, Wyoming”,
November 2006

5. United States Nuclear Regulatory Commission. 2007 “Safety Evaluation Report
Amendment No. 11 to Source Material License No. SUA-1548 Addition of
Reynolds Ranch-Highland Uranium Project (SR-HUP) Converse County,
Wyoming”, January 2007.

6. United States Nuclear Regulatory Commission. 2001 “Safety Evaluation Report
For The Renewal Of Source Material License No. SUA-1548 Rio Algom Mining
Corp. Smith Ranch In-Situ Leaching Facility Converse County, Wyoming”,
April 2001.

7. United States Nuclear Regulatory Commission. 2001 "Environmental Assessment for Renewal Of Source Material License No. SUA-1548 Rio Algom Mining Corporation Smith Ranch Uranium Project Converse County, Wyoming", November 2006
8. Pronghorn Archaeological Services. 1998 "Class III Cultural Resource Inventory for the Smith Ranch Area Project Located In Converse County, Wyoming", December 1998.
9. Robert G. Roseberg. 1997 "Assessment Of Effects For The Bozeman Trail and Other Historic Sites Within The Rio Algom Mining Corp. Reynolds Project Permit Area, Converse County, Wyoming", September 1997.

SERP Member Signatory Approvals

Signature: [Signature] Date: 2.10.10

Signature: [Signature] Date: 2-10-10

Signature: [Signature] Date: 02-10-2010

Signature: [Signature] RSO Date: 2/10/10

Signature: Miriam Whalley Date: 2-10-10

Signature: _____ Date: _____

Signature: _____ Date: _____

Signature: _____ Date: _____

E. ATTACHMENTS (if any)

Refer to the above referenced documents and the ORC minutes.



CAMECO RESOURCES
Smith Ranch-Highland
Operation

Inter-Office Memo

To: Tom Cannon

From: Dawn Kolkman

Date: 2/10/10

Cc: Angelo Kallas, Arlene Faunce, John McCarthy, Miriam Whatley

Subject: Organizational Restructure for EHS Reporting – ORC #02/10-2

A. SERP Evaluation Checklist

(New) Change, Test and Experiment License Condition

- a. The licensee may, without obtaining a license amendment pursuant to §40.44, and subject to conditions specified in (b) of this condition:
 - 1) Make changes in the facility as described in the license application (as updated).
 - 2) Make changes in the procedures as described in the license application (as updated), and
 - 3) Conduct test or experiments not described in the license application (as updated).
- b. NRC License Condition 9.4b of SUA-1548 requires a license amendment prior to implementing a proposed change, test or experiment. The SERP shall review the Checklist to determine if a license amendment is required prior to implementing a proposed change.

SERP Evaluation Checklist

NRC LICENSE REQUIREMENT	YES	NO	N/A
Results in any appreciable increase in the frequency of occurrence of an accident previously evaluated in the license application (as updated)		X	
Results in any appreciable increase in the likelihood of occurrence of a malfunction of a structure, system, or component (SSC) important to safety previously evaluated in the license application (as updated)		X	
Results in any appreciable increase in the consequences of an accident previously evaluated in the license application (as updated)		X	
Results in any appreciable increase in the consequences of a malfunction of an SSC previously evaluated in the license application (as updated)		X	
Creates a possibility for an accident of a different type than any previously evaluated in the license application (as updated)		X	
Creates a possibility for a malfunction of an SSC with a different result than previously evaluated in the license application (as updated)		X	
Results in a departure from the method of evaluation described in the license application (as updated) used in establishing the final safety evaluation report (FSER) or the environmental assessment (EA) or technical evaluation reports (TERs) or other analyses and evaluations for license amendments.		X	

If all questions are answered NO then implementation can begin. If any of the questions are answered YES then an amendment to License must be submitted and approval received from NRC prior to implementation.

B. SAFETY AND ENVIRONMENTAL REVIEW PANEL (SERP)

NRC License condition 9.4d of SUA-1548 requires that any changes, test or experiments made under the Performance Based License Condition be evaluated by a SERP consisting of at least three individuals. One member must have management expertise and have the financial and management responsibility for approving changes. The second member must have operational and/or construction expertise and have responsibility for implementing any operational changes. The third member must be the Radiation Safety Officer (RSO), or equivalent (CRSO), with the responsibility of assuring that the proposed activities will conform to radiation safety and environmental requirements. Members selected to perform this SERP review include:

SERP Member	QUALIFICATIONS TITLE
Tom Cannon	General Manager of Operations
Terry Warner	Human Resources Manager
John McCarthy	RSO
Angelo Kallas	Safety, Health, Environment and Quality Mgr.
Dawn Kolkman	Environmental Coordinator
Arlene Faunce	RSO in Training
Miriam Whatley	Environmental Coordinator

C. EVALUATION OF PROPOSED CHANGE/TEST

Operations/Technical Review

The SR-HUP Application – Reynolds Ranch Amendment/Chapter 9 (as revised 1/08) describes the position of Director, Compliance and Licensing. The alignment of the site Environmental, Health and Safety Manager reporting to the Director, Compliance and Licensing will promote company compliance with regulatory requirements by providing support to the site Environmental, Health and Safety Manager. The Director also has the responsibility and authority to terminate immediately any activity determined to be a threat to employees or public health, the environment or potentially a violation of state or federal regulations as indicated in reports from the site Environmental, Health and Safety Manager.

Environmental/Safety Review

The proposed organizational realignment is consistent with NRC License SUA-1548 and Regulatory Guide 8.31 and should not compromise the effectiveness of the ALARA and environmental compliance programs.

Compliance Review

Regulatory Guide 8.31 has been reviewed to ensure that the organizational change is consistent with the guidance provided. NRC License SUA-1548 have also been reviewed to ensure that the proposed organizational changes can be effected through the SERP process.

D. CONCLUSIONS

The SERP has concluded that the proposed organizational realignment should be beneficial to the operation of the environmental, health and safety programs and is consistent with NRC License SUA-1548 and Regulatory Guide 8.31 and should not compromise the effectiveness of the ALARA and environmental compliance programs.

SERP Member Signatory Approvals

Signature: Miriam Whatley Date: 2/10/10

Signature: John McCarthy Date: 2/20/10

Signature: ANCEL Date: 2-10-10

Signature: Dawn Kellman Date: 2-10-10

Signature: [Signature] Date: 2.10.10

Signature: Alice Farrow Date: 2-10-10

Signature: Mum Drake Date: 2-10-10

Signature: _____ Date: _____

E. ATTACHEMENTS (if any)