



CAMECO RESOURCES
Smith Ranch-Highland
Operation
Mail:
P.O. Box 1210
Glenrock, WY
82637 USA

Tel: (307) 358-6541
Fax: (307) 358-4533
www.cameco.com

December 17, 2010

Mr. Lowell Spackman, District I Supervisor
Land Quality Division
Wyoming Department of Environmental Quality
122 W. 25th Street
Cheyenne, WY 82002

CERTIFIED MAIL #70092820000140460474 RETURN RECEIPT REQUESTED

RE: TFN 5 1/201 Follow-up, Replacement Monitoring Well KM-15A, Cameco Resources, Smith Ranch Highland Uranium Project, Permit 633

Dear Mr. Spackman:

On October 14, 2010 Power Resources, Inc. d/b/a/ Cameco Resources (CR) submitted a revision to include KM-15A and KMP-14 in the Hydrologic Test Document. In that submittal, CR committed to providing an assessment of sampling results to confirm UCLs for replacement monitor well KM-15A. As reported to WDEQ/LQD, a Guideline 8 sample was collected and submitted to an offsite laboratory for analysis. Semi-monthly water quality samples were collected and analyzed on-site for the constituents Alkalinity, Chloride and Conductivity. CR compared the data results from KM-15A to data from KM-15, and then compared the results to baseline data from monitor wells in the vicinity including KM-14 and KM-16. Sampling results are illustrated on the last page of this document, Tables 1 through 4.

Comparison Discussion

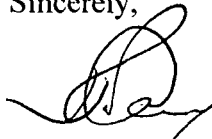
- A comparison of the Guideline 8 sampling results (Table 1) for the replacement monitor well KM-15A and the semi-monthly sampling (Table 2) indicates similar analysis of the initial sample collected September 16, 2010.
- A comparison of the replacement well data with the original monitor well KM-15 semi-monthly sampling data (Table 3) indicates constituent levels for Alkalinity and Conductivity are lower in the replacement monitor well.
- CR also compared baseline water quality of KM-14, KM-15 and KM-16 (Table 4) to the semi-monthly sampling of KM-15A (Table 2) which indicates that Chloride values are very similar, and Alkalinity and Conductivity levels in the replacement well appear to be lower.

- Alkalinity and Conductivity values, shown in Table 2, for KM-15A appear to be fluctuating; however, the last semi-monthly sample showed increased levels. The difference in Alkalinity and Conductivity may be the result of the purge volumes performed during semi-monthly sampling. Initially, three casing volumes were purged from KM-15A; however, the December 1, 2010 sample (Table 2) was purged for approximately 1 casing volume as approved in permit 633.

CR anticipates that water quality values for KM-15A, Alkalinity and Conductivity, will continue to increase as the well stabilizes with reduced purging volumes during subsequent semi-monthly sampling. CR therefore proposes to utilize the approved UCL values from KM-15 for KM-15A. The original KM-15 monitor well UCLs are approved at, 18 mg/L Chloride, 230 mg/L Alkalinity and 769 uMhos/cm Conductivity. It is worth noting that CR submitted correspondence dated November 1, 2010 requesting change in UCL values for Conductivity to 1038 uMhos/cm. CR will continue to use the approved UCL for Conductivity until that change request is approved by WDEQ/LQD.

Please contact Joe Brister at (307) 358-6541, ext. 462 if you have questions.

Sincerely,



Tom Cannon
General Manager of Operations

TC/dk

Attachments: Tables 1 – 4
Guideline 8 analysis for KM-15A

cc: D. Mandeville, USNRC (2 copies) File SR 4.3.3.1
ec: CR - Cheyenne

Table 1. Monitor Well KM-15A Guideline 8 data

Monitor Well KM-15A Guideline 8 Sample Results	Chloride (mg/L)	Alkalinity (mg/L CaCO ₃)	Conductivity (uMhos/cm)
9/16/2010	9	24	687

Table 2. KM-15A Semi Monthly Water Sampling Analysis

Monitor Well KM-15A Sample Results (internal semi-monthly sampling)	Chloride (mg/L)	Alkalinity (mg/L CaCO ₃)	Conductivity (uMhos/cm)
12/1/2010	3	75	697
11/15/2010	3	35	668
11/1/2010	3	44	710
10/19/2010	4	42	689
10/1/2010	6	58	826
9/16/2010	9	51	690

Table 3. KM-15 Semi Monthly Water Sampling Analysis (months prior)

	Chloride (mg/L)	Alkalinity (mg/L CaCO ₃)	Conductivity (uMhos/cm)
9/3/2010	4	165	861
8/23/2010	7	151	778
8/2/2010	2	178	847
7/19/2010	2	177	878
7/6/2010	2	177	839
6/21/2010	3	185	835
6/7/2010	2	180	807

Table 4. Baseline Data (including original well)

Date	KM- 14			KM-15 (original)			KM- 16		
	Chloride	Alkalinity	Conductivity	Chloride	Alkalinity	Conductivity	Chloride	Alkalinity	Conductivity
Round 1	5	162	851	1	170	848	4	170	881
Round 2	1	166	876	1	172	870	2	162	891
Round 3	1	174	865	2	166	884	1	170	880
Round 4	1	176	889	2	166	880	2	170	902



www.energylab.com
Analytical Excellence Since 1952

Helena, MT 877-472-0711 • Billings, MT 800-735-4489 • Casper, WY 888-235-0515
Gillette, WY 866-686-7175 • Rapid City, SD 888-672-1225 • College Station, TX 888-690-2218

LABORATORY ANALYTICAL REPORT

Client: Power Resources dba Cameco Corporation
Project: SR-HUP
Lab ID: C10090839-001
Client Sample ID: KM-015A

Report Date: 10/18/10
Collection Date: 09/16/10 14:17
Date Received: 09/18/10
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Carbonate as CO ₃	24	mg/L		5		A2320 B	09/21/10 22:36 / ja
Bicarbonate as HCO ₃	ND	mg/L		5		A2320 B	09/21/10 22:36 / ja
Calcium	52	mg/L		1		E200.7	09/23/10 15:02 / cp
Chloride	9	mg/L		1		E300.0	09/23/10 00:37 / ljl
Fluoride	0.5	mg/L		0.1		A4500-F C	09/22/10 11:12 / ja
Magnesium	4	mg/L		1		E200.7	09/23/10 15:02 / cp
Nitrogen, Ammonia as N	0.66	mg/L		0.05		A4500-NH ₃ G	09/22/10 21:55 / ljl
Nitrogen, Nitrate+Nitrite as N	0.1	mg/L		0.1		E353.2	09/22/10 14:19 / ljl
Potassium	24	mg/L		1		E200.7	09/23/10 15:02 / cp
Silica	11.3	mg/L		0.2		E200.7	09/23/10 15:02 / cp
Sodium	59	mg/L		1		E200.7	09/23/10 15:02 / cp
Sulfate	250	mg/L	D	2		E300.0	09/23/10 00:37 / ljl
PHYSICAL PROPERTIES							
Conductivity @ 25 C	687	umhos/cm		1		A2510 B	09/22/10 14:26 / lr
pH	10.9	s.u.		0.01		A4500-H B	09/22/10 14:26 / lr
Solids, Total Dissolved TDS @ 180 C	450	mg/L		10		A2540 C	09/22/10 17:09 / lr
METALS - DISSOLVED							
Aluminum	ND	mg/L		0.1		E200.7	09/23/10 15:02 / cp
Arsenic	0.009	mg/L		0.001		E200.8	09/24/10 19:55 / sml
Barium	ND	mg/L		0.1		E200.7	09/23/10 15:02 / cp
Boron	ND	mg/L		0.1		E200.7	09/23/10 15:02 / cp
Cadmium	ND	mg/L		0.005		E200.7	09/23/10 15:02 / cp
Chromium	ND	mg/L		0.05		E200.7	09/23/10 15:02 / cp
Copper	ND	mg/L		0.01		E200.7	09/23/10 15:02 / cp
Iron	ND	mg/L		0.03		E200.7	09/23/10 15:02 / cp
Lead	ND	mg/L		0.001		E200.8	09/24/10 19:55 / sml
Manganese	ND	mg/L		0.01		E200.7	09/23/10 15:02 / cp
Mercury	ND	mg/L		0.001		E200.8	09/24/10 19:55 / sml
Molybdenum	ND	mg/L		0.1		E200.7	09/23/10 15:02 / cp
Nickel	ND	mg/L		0.05		E200.7	09/23/10 15:02 / cp
Selenium	0.002	mg/L		0.001		E200.8	09/24/10 19:55 / sml
Uranium	0.127	mg/L		0.0003		E200.8	09/24/10 19:55 / sml
Vanadium	ND	mg/L		0.1		E200.7	09/23/10 15:02 / cp
Zinc	ND	mg/L		0.01		E200.7	09/23/10 15:02 / cp
METALS - TOTAL							
Iron	ND	mg/L		0.03		E200.8	09/23/10 04:17 / sml
Manganese	ND	mg/L		0.01		E200.8	09/23/10 04:17 / sml

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



www.energylab.com
Analytical Excellence Since 1952

Helena, MT 877-472-0711 • Billings, MT 800-735-4489 • Casper, WY 888-235-0515
Gillette, WY 866-686-7175 • Rapid City, SD 888-672-1225 • College Station, TX 888-690-2218

LABORATORY ANALYTICAL REPORT

Client: Power Resources dba Cameco Corporation
Project: SR-HUP
Lab ID: C10090839-001
Client Sample ID: KM-015A

Report Date: 10/18/10
Collection Date: 09/16/10 14:17
Date Received: 09/18/10
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES - DISSOLVED							
Gross Alpha	509	pCi/L			E900.0		10/01/10 13:07 / ep
Gross Alpha precision (±)	11.0	pCi/L			E900.0		10/01/10 13:07 / ep
Gross Alpha MDC	2.3	pCi/L			E900.0		10/01/10 13:07 / ep
Gross Beta	126	pCi/L			E900.0		10/01/10 13:07 / ep
Gross Beta precision (±)	3.0	pCi/L			E900.0		10/01/10 13:07 / ep
Gross Beta MDC	2.5	pCi/L			E900.0		10/01/10 13:07 / ep
Radium 226	70	pCi/L			E903.0		10/05/10 09:20 / dmf
Radium 226 precision (±)	1.6	pCi/L			E903.0		10/05/10 09:20 / dmf
Radium 226 MDC	0.13	pCi/L			E903.0		10/05/10 09:20 / dmf
Radium 228	2.9	pCi/L			RA-05		09/30/10 12:01 / plj
Radium 228 precision (±)	0.8	pCi/L			RA-05		09/30/10 12:01 / plj
Radium 228 MDC	1.2	pCi/L			RA-05		09/30/10 12:01 / plj
DATA QUALITY							
A/C Balance (± 5)	-1.02	%			Calculation		10/18/10 09:44 / kbh
Anions	6.30	meq/L			Calculation		10/18/10 09:44 / kbh
Cations	6.17	meq/L			Calculation		10/18/10 09:44 / kbh
Solids, Total Dissolved Calculated	437	mg/L			Calculation		10/18/10 09:44 / kbh
TDS Balance (0.80 - 1.20)	1.03				Calculation		10/18/10 09:44 / kbh

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.