

Garrett, Betty

From: Larry Teahon [Larry_Teahon@cameco.com]
Sent: Wednesday, February 23, 2011 5:48 PM
To: Burrows, Ronald
Cc: Lancaster, Thomas
Subject: 2011 Surety Spreadsheet
Attachments: 2011 Surety Final.xls

Ron:

Per our phone conversation concerning the calculation of certain surety items, I am sending you our spreadsheet that shows how the cells are calculated.

Regards,

Larry Teahon
SHEQ, Manager
Cameco Resources
Crow Butte Operations
P.O. Box 169
Crawford, NE 69339

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X-Ironport-ID: mail1

X-SBRS: 3.9

X-MID: 32319725

X-fn: 2011 Surety.Final.xls

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Feb 2011 16:47:40 -0600

From: Larry Teahon <Larry_Teahon@cameco.com>

To: "ronald.burrow@nrc.gov" <ronald.burrow@nrc.gov>

CC: "thomas.lancaster@nrc.gov" <thomas.lancaster@nrc.gov>

Subject: 2011 Surety Spreadsheet

Thread-Topic: 2011 Surety Spreadsheet

Thread-Index: AcvTq6pOuRIGJOPSToW7slWyKofvLA==

Date: Wed, 23 Feb 2011 22:47:39 +0000

Message-ID:

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Return-Path: prvs=10287dd6bc=larry_teahon@cameco.com

Crow Butte Resources, Inc.
Crow Butte Uranium Project 2011 Surety Estimate
(Revised September 2010)

Total Restoration and Reclamation Cost Estimate

I.	Groundwater Restoration (Sheets 3 to 6)		\$18,046,417
II.	Wellfield Reclamation (Sheets 7 to 10)		\$7,688,192
III.	Commercial Plant Reclamation/Decommissioning (Sheets 11 to 14)		\$783,185
IV.	R.O. Building Reclamation/Decommissioning (Sheets 11 to 14)		\$114,700
V.	Evaporation Pond Reclamation (Sheets 15 to 18)		\$1,037,049
VI.	Miscellaneous Site Reclamation (Sheets 19 to 21)		\$362,751
VII.	Deep Disposal Well Reclamation (Sheet 22)		\$128,411
VIII.	I-196 Brule Aquifer Restoration (Sheets 23 to 24)		\$37,930
	Subtotal Reclamation and Restoration Cost Estimate		\$28,198,635
	Contract Administration	10%	\$2,819,864
	Contingency	15%	\$4,229,795
		TOTAL	\$35,248,294

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Ground Water Restoration													
			Mine Unit 2	Mine Unit 3	Mine Unit 4	Mine Unit 5	Mine Unit 6	Mine Unit 7	Mine Unit 8	Mine Unit 9	Mine Unit 10	Mine Unit 11	Total
I.	IX Treatment Costs												
	PV's Required		3	3	3	3	3	3	3	3	3	3	
	Total Kgals for Treatment		64866	57219	104103	157680	181311	213447	323109	273090	685485	546573	2606883
	IX Treatment Unit Cost (\$/Kgal)	(Sheet 25)	\$0.44	\$0.44	\$0.44	\$0.44	\$0.44	\$0.44	\$0.44	\$0.44	\$0.44	\$0.44	
	Subtotal IX Treatment Costs per Wellfield		\$28,541.04	\$25,176.36	\$45,805.32	\$69,379.20	\$79,776.84	\$93,916.68	\$142,167.96	\$120,159.60	\$301,613.40	\$240,492.12	\$1,147,028.52
	Total IX Treatment Costs		\$1,147,028.52										
II.	Reverse Osmosis Costs												
	PV's Required		6	6	6	6	6	6	6	6	6	6	
	Total Kgals for Treatment		129732	114438	208206	315360	362622	426894	646218	546180	1370970	1093146	5213766
	Reverse Osmosis Unit Cost (\$/Kgal)	(Sheet 26)	\$1.72	\$1.72	\$1.72	\$1.72	\$1.72	\$1.72	\$1.72	\$1.72	\$1.72	\$1.72	\$1.72
	Subtotal Reverse Osmosis Costs per Wellfield		\$223,139.04	\$196,833.36	\$358,114.32	\$542,419.20	\$623,709.84	\$734,257.68	\$1,111,494.96	\$939,429.60	\$2,358,068.40	\$1,880,211.12	\$8,967,677.52
	Total Reverse Osmosis Costs		\$8,967,677.52										
III.	Recirculation Costs												
	PV's Required		2	2	2	2	2	2	2	2	2	2	
	Total Kgals for Treatment		43244	38146	69402	105120	120874	142298	215406	182060	456990	364382	1737922
	Recirculation Unit Cost (\$/Kgal)	(Sheet 27)	\$0.32	\$0.32	\$0.32	\$0.32	\$0.32	\$0.32	\$0.32	\$0.32	\$0.32	\$0.32	\$0.32
	Subtotal Recirculation Costs per Wellfield		\$13,838.08	\$12,206.72	\$22,208.64	\$33,638.40	\$38,679.68	\$45,535.36	\$68,929.92	\$58,259.20	\$146,236.80	\$116,602.24	\$556,135.04
	Total Recirculation Costs		\$556,135.04										
IV.	Consumables												
	Spare parts, filters and consumables =	\$20,725.50 year											
	Active restoration period (months)		7.09	6.25	11.37	17.22	19.80	23.31	35.28	29.81	74.85	59.68	284.66
	Consumable usage (months restoration x annual rate estimate)		\$12,245.32	\$10,794.53	\$19,637.41	\$29,741.09	\$34,197.08	\$40,259.28	\$60,932.97	\$51,485.60	\$129,275.31	\$103,074.82	\$491,643.41
	Subtotal Consumables per Mine Unit		\$12,245.32	\$10,794.53	\$19,637.41	\$29,741.09	\$34,197.08	\$40,259.28	\$60,932.97	\$51,485.60	\$129,275.31	\$103,074.82	\$491,643.41
	Total Consumables Costs		\$491,643.41										

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							Mine Unit 2	Mine Unit 3	Mine Unit 4	Mine Unit 5	Mine Unit 6	Mine Unit 7	Mine Unit 8	Mine Unit 9	Mine Unit 10	Mine Unit 11	Total
V.	Monitoring and Sampling Costs																
			Guideline 8 analysis =			\$200.00	analysis										
			6 parameter in-house analysis =			\$51.31	analysis										
			Total restoration wells					12	18	43	33	29	25	30	21	32	24
			Total monitor wells					13	10	20	48	54	33	50	33	63	43
			IX Treatment duration (months)					1.29	1.14	2.07	3.13	3.60	4.24	6.41	5.42	13.61	10.85
			Reverse Osmosis duration (months)					4.94	4.35	7.92	12.00	13.80	16.24	24.59	20.78	52.17	41.60
			Recirculation duration (months)					0.86	0.76	1.38	2.09	2.40	2.83	4.28	3.61	9.07	7.23
			Stabilization duration (months)					12	12	12	12	12	12	12	12	12	12
	A.	Restoration Well Sampling															
	1.	Well Sampling prior to restoration start															
			# of Wells					12	18	43	33	29	25	30	21	32	24
			\$/sample					\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00
	2.	IX Treatment Sampling															
			# of Wells					12	18	43	33	29	25	30	21	32	24
			Total # samples					24	36	129	132	116	125	210	126	448	264
			\$/sample					\$51.31	\$51.31	\$51.31	\$51.31	\$51.31	\$51.31	\$51.31	\$51.31	\$51.31	\$51.31
	3.	RO Sampling															
			# of Wells					12	18	43	33	29	25	30	21	32	24
			Total # samples					60	72	344	396	406	400	750	441	1664	1008
			\$/sample					\$51.31	\$51.31	\$51.31	\$51.31	\$51.31	\$51.31	\$51.31	\$51.31	\$51.31	\$51.31

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Ground Water Restoration																		
								Mine Unit 2	Mine Unit 3	Mine Unit 4	Mine Unit 5	Mine Unit 6	Mine Unit 7	Mine Unit 8	Mine Unit 9	Mine Unit 10	Mine Unit 11	Total
	4.	Recirculation Sampling																
		# of Wells						12	18	43	33	29	25	30	21	32	24	
		Total # samples						12	18	86	99	87	75	150	84	320	192	1123
		\$/sample						\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	
	5.	Stabilization Sampling (Guideline 8)																
		# of Wells						12	18	43	33	29	25	30	21	32	24	
		Total # samples						36	54	129	99	87	75	90	63	96	72	801
		\$/sample						\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	
	6.	Stabilization Sampling (6 parameter in-house)																
		# of Wells						12	18	43	33	29	25	30	21	32	24	
		Total # samples						144	216	516	396	348	300	360	252	384	288	3204
		\$/sample						\$51.31	\$51.31	\$51.31	\$51.31	\$51.31	\$51.31	\$51.31	\$51.31	\$51.31	\$51.31	
	7.	Monitor Well Sampling																
		# of Wells						13	10	20	48	54	33	50	33	63	43	
		\$/sample						\$51.31	\$51.31	\$51.31	\$51.31	\$51.31	\$51.31	\$51.31	\$51.31	\$51.31	\$51.31	
		Total # samples (2.2/mo for entire period)						546	402	1028	3086	3778	2564	5201	3035	12037	6781	38458
	8.	Other Laboratory Costs																
		Radon, urinalysis, etc. =						\$935.18	month									
		Total for Other Laboratory Costs:						\$6,630.43	\$5,844.88	\$10,633.00	\$16,103.80	\$18,516.56	\$21,799.05	\$32,993.15	\$27,877.72	\$69,998.22	\$55,811.54	\$266,208.35
Subtotal Monitoring and Sampling Costs per Mine Unit								\$58,344.37	\$61,095.94	\$165,725.27	\$268,056.90	\$297,605.44	\$230,688.64	\$421,585.66	\$259,226.46	\$905,286.45	\$541,388.25	\$3,209,003.38
Total Monitoring and Sampling Costs								\$3,209,003.38										
VI. MIT Costs																		
		MIT Costs per Well						\$256.61	\$256.61	\$256.61	\$256.61	\$256.61	\$256.61	\$256.61	\$256.61	\$256.61	\$256.61	\$256.61
		Restoration period, plus stabilization						19.09	18.25	23.37	29.22	31.80	35.31	47.28	41.81	86.85	71.68	
		Number of Wells MIT'd for Life of Mine Unit						144	163	293	498	550	618	710	552	863	487	
		Subtotal MIT Mine Unit						\$36,951.84	\$41,827.43	\$75,186.73	\$127,791.78	\$141,135.50	\$158,584.98	\$182,193.10	\$141,648.72	\$221,454.43	\$124,969.07	
		5-year MIT Costs for Disposal Wells						\$6,425										
		Number of DDWs						2										
		Number of MITs per DDW						2										
		Subtotal MIT DDW Costs						\$25,700										
		Total MIT Costs						\$1,277,444										

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						Mine Unit 2	Mine Unit 3	Mine Unit 4	Mine Unit 5	Mine Unit 6	Mine Unit 7	Mine Unit 8	Mine Unit 9	Mine Unit 10	Mine Unit 11	Total
VI.	Supervisory Labor Cost															