40-8905

From: "Luthiger, Peter" <Peter.Luthiger@BHPBilliton.com>
To: "Stephen Cohen" <SJC7@nrc.gov>
Date: 2/14/06 10:40AM
Subject: RE: Latest CAP Report

Steve,
We have over 70 wells associated with the tailings site, of which 43 are in the alluvium. The isocontour plots contained in the annual CAP report use all wells to generate the pretty pictures. Obviously, using only the CAP associated wells would result in dashed lines everywhere due to the limited number of wells.
Please keep in mind that the plots are generated based on well water quality and we do not take in account what causes the value. This is clearly evident along the fresh water course that is used as part of the ground water sweep in the alluvium. The uranium, molybdenum, selenium, gross alpha concentrations in the wells near this channel are indicative of the water quality used in the sweep. These concentrations do not reflect tailings water quality.
I have attached the entire groundwater database for 2005 for all units.
Peter

-----Original Message-----
From: Stephen Cohen [mailto:SJC7@nrc.gov]
Sent: Tuesday, February 14, 2006 7:31 AM
To: Luthiger, Peter
Subject: Latest CAP Report

Peter:

In the August 1, 2005, CAP report you show uranium contours that appear to be drawn using data from wells that are not in the compliance network. Is this true, and if it is can you send to me a spreadsheet the ground water data for those additional wells. I'm trying to assess some of the hotspots located around the old Pond 4.

Steve

CC: "Erskine, Dan -- MTI" <DErskine@maximusa.com>

Mail Envelope Properties (43F1F9D6.FD6 : 21 : 57302)

Subject: RE: Latest CAP Report
Creation Date: 2/14/06 10:38AM
From: "Luthiger, Peter" <Peter.Luthiger@BHPBilliton.com>

Created By: Peter.Luthiger@BHPBilliton.com

Recipients
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SJC7 (Stephen Cohen)

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DErskine CC (Dan -- MTI Erskine)

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Files	Size	Date & Time
MESSAGE	1959	02/14/06 10:38AM
RAM GW 2005.xls	117760	
Mime.822	165788	

Options
Expiration Date: None
Priority: Standard
Reply Requested: No
Return Notification: None

Concealed Subject: No
Security: Standard

Monitor Well	Date	NRC	Depth To V	Total Depth	Spec. Con	Temp (C)	pH	As (mg/l)
1-01 KD	20-May-05			76.58				
17-01 KD	18-Apr-05		685.60	809.7	2520	22.8	1104	0.0041
17-01 KD	19-Sep-05	Y	684.50	809.5	1414	22.9	10.02	0.0019
19-77	26-Apr-05	Y	282.10	288.6	3970	15.6	7.78	
19-77	03-Oct-05	Y	278.70	288.5	3340	18.4	8.55	
25-01 KD	09-May-05			467.3	5160	17.7	7.67	
25-02	09-May-05		305.00	385.7	1113	16.6	10.63	
26-76 KD	10-May-05		281.60	291.9	1774	18.3	7.61	
30-01	03-May-05		199.40	207.6	1327	14.7	9.56	
30-02 KD	11-Apr-05		307.70	314.8	5640	15.3	7.29	-0.0005
30-02 KD	20-Sep-05	Y	308.20	314	1721	17.1	7.14	-0.003
30-03	16-Jun-05			18.55				
30-03	12-Sep-05			18.96				
30-04	17-May-05		36.27	88.6	3530	14.4	8.6	
30-04	11-Oct-05		36.05	88.45	4240	11.3	7.8	
30-46	16-Jun-05			38.4				
30-46	20-Sep-05			39				
30-47	17-May-05		30.37	79.31	4350	14.3	7.71	
30-47	24-Oct-05		31.05	79.96	5310	13.4	6.75	
30-48	17-May-05		33.92	79.45	4180	13.8	7.52	
30-48	21-Sep-05		35.10	80	1728	14.4	7.89	
30-48 KD	25-Apr-05	Y	338.70	339.7				
30-48 KD	21-Sep-05	Y		340.4				
30-49	31-May-05		45.23	68.75	4020	13.8	8.4	
30-49	21-Sep-05		46.53	90.13	3430	15.9	8.62	
30-53	16-Jun-05			50.1				
30-53	20-Sep-05			50.9				
30-68	23-Jun-05			63.46				
30-68	21-Oct-05			63.33				
31-01	01-Feb-05		201.00	251.49	2530	10.5	7.83	
31-01	13-Sep-05	Y	202.70	251.5	1434	16.8	7.69	
31-02	01-Feb-05		36.56	127.6	5300	9.9	7.15	
31-03 KD	09-May-05		337.60	342.3	1734	19.8	7.63	
31-05	01-Feb-05		28.40	74.2	5300	11.1	7.13	
31-05	11-Oct-05		34.52	73.77	6210	12.5	7.45	
31-61	15-Aug-05	Y	17.10	27.15	4150	13.5	6.79	
31-62 TRB	13-Jun-05		15.97	63.95	3870	13.9	7.19	
31-63	14-Feb-05		19.10	30.75	1228	13.4	6.48	
31-63	25-Oct-05		19.02	30.6	15330	11.5	6.56	
31-65	14-Feb-05		16.20	46.26	8250	11	7.23	
31-65	27-Sep-05		17.00	46.69	4930	15.3	7.8	
31-66	01-Feb-05		113.20	123.38	>10000	11.9	6.52	
31-66	30-Aug-05	Y	113.61	123.45	Or	16.5	6.38	
31-67	25-Jan-05	Y	20.29	96.42	4990	12.2	7.32	
31-67	29-Aug-05	Y	21.45	98.9	5580	15.5	7.13	
31-70	24-May-05		18.88	32.02	7050	14.8	7.14	
31-70	25-Oct-05		19.83	32.92	9140	12.3	6.42	
31-71	01-Feb-05		18.00	63.4	4360	11.9	7.22	
31-71	24-Oct-05		23.68	63.36	4740	13.5	7.44	
31-75 KD	17-Jun-05			251.89				
32-01	15-Feb-05		16.00	52.4	5080	13.4	8.16	

32-01	24-Oct-05		15.81	52.53	5090	12.3	8.64	
32-02	08-Feb-05		30.80	76.7	49.7	11.7	7.21	
32-02	11-Oct-05		33.00	72.68	5140	11.9	7.14	
32-41	08-Feb-05		21.10	59.01	6500	11.6	8.48	
32-41	24-Oct-05		21.46	58.02	6870	10.6	8.92	
32-42	08-Feb-05		22.85	28.74	4190	13	8.07	
32-42	24-Oct-05		23.48	28.63	4280	10.7	7.65	
32-43	15-Feb-05		16.29	76.85	7010	8.5	7.77	
32-43	24-Oct-05		17.32	76.58	7750	10.8	7.44	
32-44	13-Jun-05		104.90	163.88	1575	15.2	7.86	
32-45 KD	11-Apr-05	Y	253.10	278.1	1841	14.9	7.88	0.0008
32-45 KD	26-Sep-05	Y	253.40	278.4	1269	17.2	8.72	0.0023
32-50	24-May-05		34.80	91.27	3940	14.7	7.67	
32-50	25-Oct-05		27.18	89.63	4330	12.6	7.51	
32-51	31-May-05		25.00	75.55	4000	13.9	7.84	
32-51	05-Oct-05		25.05	84.48	1322	13.8	8.05	
32-51 KD	10-May-05		254.70	282.3	749	16.3	8.92	
32-52	31-May-05		26.85	66.82	3100	14.7	8.58	
32-52	05-Oct-05		26.67	66.8	1588	13	8.16	
32-52 KD	10-May-05		234.80	268.8				
32-56	13-Jun-05			57.65				
32-56	26-Sep-05			57.92				
32-57	13-Jun-05		38.20	53.87	4200	14.5	7.71	
32-57	28-Sep-05		38.91	54.46	4350	16.7	8.22	
32-58	31-May-05		10.75	34.6	3850	14.5	7.48	
32-58	11-Oct-05		10.69	34.43	5120	11.7	7.26	
32-59	24-Jan-05	Y	11.69	40	4520	12.7	7.41	
32-59	15-Aug-05	Y	14.00	39.53	3620	14.4	7.54	
32-60	14-Feb-05		16.20	27.75	7060	12.9	6.99	
32-60	27-Sep-05		17.09	27.22	4460	15.4	7.68	
32-64	15-Feb-05		8.00	36.3	6290	9.9	7.36	
32-69	01-Feb-05		22.70	67	4350	10.3	7.42	
32-69	24-Oct-05		23.32	66.54	4600	10.6	7.49	
32-72	06-Jun-05		10.30	40.33	4060	13.4	7.34	
32-72	27-Sep-05		10.95	40.64	3820	17.9	8.09	
33-01 TRA	04-Apr-05	Y	118.50	183.7	3510	14.5	8.01	
33-01 TRA	30-Aug-05	Y	118.70	183.9	3390	19	7.76	
36-01	24-Jan-05	Y	17.57	27.17	6400	12.9	6.94	
36-01	12-Jun-05	Y	57.20	58.8				
36-01 KD	20-May-05		57.36	58.82				
36-01	26-Sep-05	Y	57.90	59.37				
36-02	25-Jan-05	Y	47.00	57.89	8320	11.6	7.67	
36-02 TRA	23-Jun-05			235				
36-02	29-Aug-05	Y	45.50	57.95	6360	20.6	7.01	
36-03	20-May-05			63.35				
36-04	07-Jun-05			58.04				
36-04 KD	25-Apr-05		311.10	332.5	>10000	18.6	6.8	-0.01
36-06	25-Apr-05		176.50	198.2	8180	11.7	4.75	0.022
36-06	13-Sep-05	Y	177.30	198.1	5610	17.1	5.22	
36-74	03-May-05		146.70	153.3	1760	12.9	7.64	
5-01	06-Jun-05		22.27	44.95	1936	14.8	8.12	
5-01	05-Oct-05		18.00	44.92	1605	12.1	8.35	

5-01 KD	16-May-05		198.80	229.5	8700	15.3	8.5	-0.0005
5-02	07-Jun-05		21.92	38.88	4110	15.6	7.34	
5-02	11-Oct-05		27.45	38.63	5630	12.5	7.3	
5-02 KD	20-May-05			191.73				
5-03	24-Jan-05	Y	18.40	45.7	4230	13.8	9.06	
5-03	15-Aug-05	Y	20.00	44.65	3400	15	7.55	
5-04	06-Jun-05		17.70	64.84	3250	15.6	8.05	
5-04	05-Oct-05		11.37	64.78	5190	15.4	9.43	
5-05	16-May-05		93.00	137.9	3650	18.2	7.73	
5-06	20-May-05			96.34				
5-08	06-Jun-05		31.00	88	3860	15.6	7.95	
5-08	04-Oct-05		32.82	88.3	3600	14.8	7.81	
5-73	13-Jun-05		12.88	31.73	1882	13.2	7.83	
5-73	11-Oct-05		12.58	31.66	4870	12.8	7.52	
AW-1	17-May-05		36.38	81.43	3860	13.3	8.12	
AW-1	11-Oct-05		36.22	81.38	4530	11.3	7.73	
AW-2	31-May-05		28.80	83.9	3410	15.3	7.93	
AW-2	05-Oct-05		29.05	86	1548	12.9	8.26	
C-3	19-Jun-05			12.28				
C-3	21-Oct-05			12.12				
D-4	17-Jun-05		21.05	22.15				
D-4	21-Oct-05		20.92	21.85				
E-5	07-Jun-05		11.18	15.94	6580	13.9	7.36	
E-5	25-Oct-05		11.05	15.85	14040	13.8	7.03	
MW-24	17-Jun-05		50.12	50.27				
MW-24	15-Aug-05		50.25	50.35				
S-12	15-Feb-05		13.78	28.56	7420	11.5	7.18	
S-12	27-Sep-05		14.59	28.01	5010	15.6	7.65	
S-9	31-May-05		10.64	23.55	6400	14.5	7.98	
S-9	27-Sep-05		10.87	23.95	6870	17.3	7.53	

Be (mg/l)	Cd (mg/l)	Cl (mg/l)	CN (mg/l)	Mo (mg/l)	Ni (mg/l)	NO3 (mg/l)	Pb (mg/l)	Pb-210 (pC
-0.0001	0.0003	199	-0.01	0.097	0.0312	-0.02	-0.0001	2.4
-0.0001	-0.0001	122	-0.01	0.0581	0.0159	-0.02	-0.0001	3.1
		26	-0.01	0.006	0.004	0.98		3.4
		18	-0.01	0.007	0.006	0.48		1.9
		320	0.03	0.0077	0.0123	0.04		1.7
-0.0001	-0.0001	1500	-0.01	0.0023	0.0284	0.03	-0.0001	6.9
-0.0005	-0.0005	1700	-0.01	0.003	0.033	0.03	-0.0005	6.3
				0.005	0.002			0
		620				-0.02		
		900		-0.001	0.002	0.03		0
		650		0.013	0.002	0.04		1.6
		600				0.12		
		730		-0.003	0.027	0.21		0
		660				0.21		
		129	-0.01	0.0008	0.001	0.03		6.43
		680	-0.01	0.016	0.008	1.41		4.38
		470		0.0013	0.001	-0.02		1.49
		490				0.06		
		640		-0.005	0.023	1.38		0
		630	-0.01	-0.01	-0.003	0.02		2
		2570		-0.02	0.02	6.01		2.77
		660		0.0098	0.0827	1.99		4.8
		700				1.62		
		15400	-0.01	-0.005	0.15	1.07		0
		17300	-0.01	-0.03	0.19	1.08		0
		960	-0.01	-0.003	0.027	2.14		0
		810		-0.003	0.035	47.3		0
		460		0.0019	0.003	0.17		5.88
		580		0.0208	0.0016	0.11		2.83

		570		0.0031	0.042	-0.02		4.17
		580				-0.02		
		1220		0.0015	0.0218	0.08		4
		390		0.0007	0.0194	0.1		1.93
		430		0.012	0.01	310		3.01
		197	-0.01	-0.1	-0.0006	-0.02		0.54
-0.0001	0.0002	201	-0.01	0.0136	0.0046	0.02	-0.0001	6
-0.0001	-0.0001			0.0327	0.0049	0.44	-0.0001	1.6
		432		-0.001	0.01	0.11		2.1
		244		0.003	0.019	5.29		0
		270				8.07		
		207		0.002	0.014	0.06		0
		206				-0.02		
		860		0.007	-0.003	3.21		0
		880				4.6		
		570		-0.003	0.025	0.04		0
		570				-0.02		
		530		0.005	0.013	0.08		1.4
		650		0.0204	0.101	4.07		4.53
		690				6.15		
		580	-0.01	0.0256	0.0613	0.58		1.57
		410		0.342	0.002	0.14		1.13
		690				6.11		
		36	-0.01	0.0027	0.004	0.08		4.7
		75	-0.01	0.005	0.005	3.07		0
		See Case I	-0.01	-0.005	0.01	0.16		0
-0.002	-0.002	3200	-0.01	-0.01	0.01	0.15	-0.002	1
0.029	0.007	1220	-0.01	-0.005	0.313	-0.02	0.008	11
		29	-0.01	0.0033	0.02	0.26		1.3
		242				0.03		

-0.0001	-0.0001	40	-0.01	0.0007	-0.0006	0.42	0.0001	0
		1070		0.0006	0.0023	0.06		0
		1170				0.04		
		390		0.001	0.006	0.16		0
		32				0.05		
		1020	-0.01	-0.001	0.005	0.22		0
		710				0.11		
				0.002	0.003			0.8
		600				0.02		
		500		0.02	0.003	0.75		0.07
		490				0.85		
		212		0.006	0.021	0.11		0
		228				0.03		
		2950		-0.003	-0.003	0.28		0
		780		-0.005	0.008	0.47		0
		1030				1.08		
		2360		-0.005	-0.006	0.04		0
		2400				0.13		

Ra-226 (pC	Ra-228 (pC	Sb (mg/l)	Se (mg/l)	SO4 (mg/l)	TDS (mg/l)	Th-230 (pC	Unat (mg/l)	Gross Alph
0.11	0.24	0.0005	-0.001	620	1500	1	0.00154	9.1
0.27	2.5	-0.0004	-0.001	690	1250	0.15	0.0034	2.4
3.2	1.8		-0.001	1910	3410	-0.17	0.0127	47
1.9	2.2		-0.001	1990	3350	-0.5	0.0175	32
1.2	0.37		-0.001	320	1160	0.32	0.0024	3.5
0.55	1.4	-0.0002	-0.001	680	4230	0.05	0.00435	24
1.4	2.7	-0.002	-0.001	1080	4550	-0.06	0.0039	2.5
3.7	0.81		-0.001			-0.17	0.024	36
				1330	2990			
0.96	0.69		-0.001	1870	4170	-0.12	0.0059	30
0.77	1.2		0.003	1790	3700	0.18	0.0258	26
				1780	3790			
0.49	0.71		0.008	2120	4640	-0.33	0.0116	16
				2110	4470			
0.91	0.73		-0.001	1200	2070	-0.17	0.0038	6.64
1.59	1.51			2140	4670	0.48	1.3	985
22	5.34		0.002	2840	5160	-0.05	0.0116	16
				3040	5550			
1.3	0.35		-0.001	3320	6270	0	0.141	110
0.91	7.1		0.001	2370	5370	-0.06	0.0079	0.47
0.89	1.16		0.012	6350	14800	0.08	1.39	2270
0.89	1.67		0.001	4970	9000	0.4	0.247	260
				4980	8560			
4.85	12.6		0.008	5370	40000	-0.34	0.217	276
4.8	15		0.008	5090	32100	-0.19	0.251	800
2.3	4.9		-0.001	3010	6750	0.03	0.0833	68
0.92	1.1		0.006	4000	9270	0.07	0.664	400
0.31	0.35		0.036	1910	3890	-0.45	0.658	432
0.33	1.11		0.001	1890	4000	0.58	0.0103	4.6

1.23	0.16		-0.001	2140	4010	0.1	0.0126	44.7
				2150	4130			
1.24	0.77		-0.001	2010	3270	0.87	0.0022	13.4
0.8	0.27		-0.001	1730	3400	0.1	0.011	18.3
0.2	0.89		0.118	2910	6860	-0.09	0.127	108
0.71	2.2		-0.001	970	1830	-0.14	0.005	11
0.71	1.2	-0.0002	-0.001	810	1620	-0.28	0.00511	13
0.85	0.81	-0.0004	-0.001	790	1550	0.14	0.0097	18
0.91	1.4			2010	3780	0	0.0422	19
0.4	0.32		0.034	2980	5120	-0.27	0.0254	25
				3220	5110			
0.87	0.07			1920	3200	0.3	0.0023	0
				1980	3130			
6.7	1.6		0.022	2030	4800	-0.41	0.187	220
				2280	4950			
0.31	0.23		-0.001	1950	4100	0.12	1	690
				1950	4200			
0.25	1.3		-0.001	1920	4000	-0.2	0.181	130
1.23	0.78		0.005	3830	7220	0.24	0.205	163
				3820	7050			
0.23	0.89		0.048	2470	4730	0.33	0.116	104
0.63	0.11		0.01	1880	3750	-0.2	1.15	779
				2310	4680			
0.52	1.8		-0.001	1950	2690	-0.19	0.0132	8.9
1.1	1		-0.001	1880	2860	0.07	0.0075	28
1.1	1.8		0.004	2960	8670		0.008	73
2.6	2.2	-0.008	0.003	6480	14000	-0.05	0.007	160
48	8.3	-0.004	0.013	560	9370	150	1.17	1200
2	2.1		-0.001	1130	2120	0.17	0.0132	21
				2310	3770			

0.85	0.67	-0.0004	-0.001	390	650	0	0.0013	5
2.1	0.86		-0.001	2170	4810	-0.03	0.0041	34
				2280	5270			
0.75	0.61		-0.001	2060	3690	0	0.0062	18
				180	390			
1.7	1		-0.001	680	2830	0.16	0.0002	11
				2050	4170			
0.41	2.2		-0.001			-0.03	0.345	200
				1810	3910			
1	1.2		0.039	1750	3700	-0.2	0.762	570
				1780	3760			
0.41	1.6			2220	4020	-0.03	0.0574	56
				2240	3930			
2.1	0.6		-0.001	3660	10500	0.16	0.0199	40
0.77	6.3		0.005	3990	7360	0.12	0.158	123
				3840	8540			
8.3	1.5		-0.001	4100	10200	0.13	0.036	52
				4090	10500			

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