
From: Stephen Cohen
Sent: Tuesday, August 19, 2008 9:16 AM
To: Betty Garrett
Subject: Please Docket under Kennecott
Attachments: Spill of Pumpback Fluid

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To: Betty Garrett <Betty.Garrett@nrc.gov>
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Subject: Please Docket under Kennecott
Thread-Topic: Please Docket under Kennecott
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Betty Garrett

From: Paulson, Oscar (RTEA) [Oscar.Paulson@riotinto.com]
Sent: Monday, August 18, 2008 6:40 PM
To: Stephen Cohen
Cc: Schutterle, Shelley (RTEA); Kelley, Harold (RTEA)
Subject: Spill of Pumpback Fluid
Attachments: spill_08_18_08.ppt; Incident spreadsheet.xls

Stephen Cohen:

As described briefly to you in our telephone conversation today, a six (6) inch diameter polyethylene line into which pump back fluid from the following six wells, TMW-7, 18, 57, 58, 96 and 97 flowed became plugged and the fluid flowed out of the top of the line and down the outside of the western tailings impoundment embankment onto the ground on the North side of the impoundment ramp.

The following pertains to the incident:

Spill Description

	Date:	Time:		
Start:	18-Aug-08	0:00		
Stop:	18-Aug-08	8:00		
Estimated Duration:	480	minutes		
Flow Rate of Well:	38.08	gallons per minute		
Estimated Volume Released:	18278.4	gallons		
Radionuclides:	Table 2 Effluent Concentration (pCi/L)	Concentration (pCi/L)	Fractional Concentration	
Natural uranium:	300	10.7	0.0355	
Radium-226	60	2.1	0.0350	
Radium-228	60	7.5	0.1243	
Thorium-230	100	0.03	0.0003	
Sum of fractions:			0.1952	

Notes: Concentrations based on most recent samples collected from wells

A small volume of spilled fluid was still on the ground. As much as possible was pumped into a tank and hauled to the tailings impoundment. The total volume of fluid pumped from fluid pooled on the ground was 119 gallons (1,000 pounds of fluid).

The fluid on the ground was sampled.

The concentrations of radionuclides in the fluid are below the limits in 10 CFR 20 Appendix B Table 2 - Effluent Concentrations

The spill did not enter any drainages.

The spill occurred entirely on private land

All spilled fluid either pooled on the ground surface or soaked into the soil

All spilled fluid accumulated above the plume in the underlying aquifer.

Radionuclide concentrations were below the allowable Effluent Concentrations in Table 2 of Appendix B of 10 CFR Part 20 and the quantities involved do not exceed any Allowable Limits of Intake (ALIs). The residual fluid on the surface rapidly soaked into the ground. Approximately 119 gallons were removed by pumping of accumulated/pooled fluid.

An image of the spill as the Microsoft PowerPoint (*.ppt) file *spill_08_18_08.ppt* is attached as well as the Microsoft Excel (*.xls) file *Incident_spreadsheet.xls* that contains the most recent analysis data for the wells involved, a weighted average concentration for the spilled fluid based on these analysis results (Sheet: 08-18-08 SPILL), well flow rate calculations (Sheet: FLOW DATA) and other information (Sheet: FRACTIONAL CONC).

The border of the area impacted by the spill was marked with wooden lathes and will be surveyed so a permanent record of the impacted area will be made

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Spilled Fluid North of Ramp



**Kennecott Uranium Company
Sweetwater Uranium Project**

Spill Description

	Date:	Time:
Start:	18-Aug-08	0:00
Stop:	18-Aug-08	8:00
Estimated Duration:	480 minutes	
Flow Rate of Well:	38.08 gallons per minute	
Estimated Volume Released:	18278.4 gallons	

Radionuclides:	Table 2 Effluent Concentration (pCi/L)	Concentration (pCi/L)	Fractional Concentration
Natural uranium:	300	10.7	0.0355
Radium-226	60	2.1	0.0350
Radium-228	60	7.5	0.1243
Thorium-230	100	0.0	0.0003
Sum of fractions:			0.1952

Notes:

Concentrations based on most recent samples collected from wells
A small volume of spilled fluid was still on the ground. As much as possible was pumped into a tank and hauled to the tailings impoundment. The total volume of fluid pumped from fluid pooled on the ground was 119 gallons (1,000 pounds of fluid).
The fluid on the ground was sampled.
The concentrations of radionuclides in the fluid are below the limits in 10 CFR 20 Appendix B Table 2 - Effluent Concentrations
The spill did not enter any drainages.
The spill occurred entirely on private land
All spilled fluid either pooled on the ground surface or soaked into the soil
All spilled fluid accumulated above the plume in the underlying aquifer.

KENNECOTT URANIUM COMPANY								
Weighting Factor Based on Flow		0.20	0.25	0.13	0.04	0.16	0.22	1.00
NORTHING: 148,500.01 EASTING: 323,807.75	Groundwater Protection							
ND = Non-detectable	Standard	TMW-7	TMW-18	TMW-57	TMW-58	TMW-96	TMW 97	Weighted
FIELD DATA mg/l:	(GPS)	04/14/2008	04/14/2008	04/23/2008	04/23/2008	04/14/2008	05/20/2008	Average
Temperature (C)	as of 5/26/05	14.8	12	14.6	13.2	11.8	12.6	13.04
pH (Std. Units)		7	6.6	7.4	7.1	7.8	7.6	7.22
Cond. (umho/cm)		1018	3010	755	1521	981	867	1456.24
TDS								
MAJOR IONS mg/l:								
Alk-CaCO3		162	449	109	182	116	97	204.68
Bicarbonate (HCO3)		198	578	133	222	142	118	257.21
Calcium (Ca)		167	611	124	296	195	152	277.42
Carbonate (CO3)		0	0	0	0	0	0	0.00
Chloride (Cl)		24	87	13	46	23	19	37.76
Fluoride (F)		0	0	0.1	0	0.1	0.1	0.05
Magnesium (Mg)		13.8	49.2	9.2	24.1	13.8	10.7	21.67
Nitrate-N (NO3)		0	0	0	0	0	0	0.00
Potassium (K)		3.7	6.4	3.3	4.8	3.9	3.3	4.30
Silica (SiO2)		8	11	8	7	7	8	8.53
Sodium (Na)		49	94	40.2	59	52	43.7	58.65
Sulfate (SO4)		383	1340	302	697	460	348	626.16
NON-METALS:								
Cyanide (CN)		0	0	0	0	0	0	0.00
PHYSICAL PROPERTIES:								
Cond (umho/cm)		1030	2880	768	1580	1080	885	1450.70
pH	GPS (6.8)	7.35	6.87	8.09	7.99	7.84	7.93	7.56
TDS @ 180° C.	GPS (500)	749	2520	523	1230	801	670	1167.04
METALS-DISSOLVED mg/l:								
Aluminum (Al)	GPS (1.8)	0	0	0	0	0	0	0.00
Arsenic (As)	GPS (.05)	0	0	0	0.001	0	0	0.00
Barium (Ba)		0	0	0	0	0	0	0.00
Beryllium (Be)	GPS (.01)	0	0	0	0	0	0	0.00
Boron (B)		0	0.3	0.3	0.1	0	0	0.12
Cadmium (Cd)	GPS (.01)	0	0	0	0	0	0	0.00
Chromium (Cr)	GPS (.05)	0	0	0	0	0	0	0.00
Cobalt (Co)		0	0.002	0.002	0.002	0	0	0.00
Copper (Cu)		0	0	0	0	0	0	0.00
Iron (Fe)	GPS (0.6)	0.14	8.56	0.06	0.023	0	0	2.14
Lead (Pb)		0	0	0	0	0	0	0.00
Manganese (Mn)	GPS (0.2)	0.34	1.4	0.1	0.26	0.12	0.1	0.48
Mercury (Hg)		0	0	0	0	0	0	0.00
Molybdenum (Mo)		0	0	0	0	0	0	0.00
Nickel (Ni)	GPS (.01)	0	0	0	0	0	0	0.00
Selenium (Se)	GPS (.01)	0	0	0	0.004	0.003	0	0.00
Silver (Ag)		0	0	0	0	0	0	0.00
Thallium (Tl)		0	0	0	0	0	0	0.00
Vanadium (V2O5)		0.1	0.1	0	0.2	0	0	0.05
Zinc (ZN)		0.02	0.02	0	0.02	0	0	0.01
RADIOMETRIC pCi/l:								
Uranium, natural	GPS (36)	5.4	1	3.7	18	25.4	18	10.66
Radium 226		1.4	2.5	2.1	3.5	2.4	1.8	2.10
Radium Precision +/-		0.22	0.31	0.19	0.36	0.28	0.3	0.27
Radium 228		4.3	11.9	5.3	9.6	7	6.5	7.46
Radium Precision +/-		0.8	1	1	0.9	0.9	0.9	0.92
Combined Ra226/228	GPS (5.8)	5.7	14.4	7.4	13.1	9.4	8.3	9.56
Thorium 230	GPS (7.0)	0.1	0	0.1	0	0	0	0.03
Thorium Precision +/-		0.1	0.1	0.1	0.1	0.2	0.1	0.12
Lead (Pb210)	GPS (8.9)	0	0.5	-1	-1.2	0.9	7.9	1.86
Lead Precision +/-		1.5	0.4	11.9	11.9	0.5	17.8	6.54
Gross Alpha	GPS (15)	5.5	12.1	3.1	7.2	6.9	3.7	6.70
Gross Alpha Precision +/-		1	1.5	0.6	1	1.1	0.6	1.00
QUALITY ASSURANCE DATA:								0.00
TDS A/C Balance (dec. %)		1	-1.02	0.92	0.99	0.97	1.04	1.00

**Kennecott Uranium Company
Sweetwater Uranium Project**

Spill Data

Date: 18-Aug-08

Well Flows:

Well ID	Date	Time	Reading	Flow Rate	Fractio
TMW-97	#####	8:08	6115260		
	#####	10:01	6165430		
			50170	8.54 GPM	0.224
TMW-96	#####	8:06	4974360		
	#####	10:01	5009970		
			35610	6.06 GPM	0.159
TMW-7	#####	7:48	3859290		
	#####	9:53	3903150		
			43860	7.45 GPM	0.196
TMW-57	#####	7:49	2072440		
	#####	9:54	2101700		
			29260	4.97 GPM	0.131
TMW-18	#####	7:51	1730370		
	#####	9:56	1785510		
			55140	9.37 GPM	0.246
TMW-58	#####	7:52	332160		
	#####	9:57	342040		
			9880	1.68 GPM	0.044
Total:				38.08 GPM	1.00

Spill Duration: 8 Hours

Spill Volume: 18278.4 Gallons

Fluid Recovered: 119 Gallons