



Homestake Mining Company of California

Jesse R. Toepfer  
Closure Manager

13 March 2015

**ATTN: Document Control Desk**

Director, Office of Federal and State Materials and Environmental Management Programs  
U.S. Nuclear Regulatory Commission,  
Washington, DC 20555-0001

**ATTN: Mr. Jack Parrott, Sr. Project Manager**

Reactor Decommissioning Branch (Mailstop T-8F5)  
Division of Waste Management and Environmental Protection  
Office of Federal and State Materials and Environmental Management Program  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

**ATTN: Mr. David Mayerson**

Ground Water Quality Bureau  
New Mexico Environment Department  
PO Box 5469  
Santa Fe, NM 87502-5469

**RE: Replacement Pages for "Semi-Annual Environmental Monitoring Report for Period July – December 2014, In Accordance With Nuclear Regulatory Commission Docket No. 40-8903, License No. SUA 1471, and New Mexico Environment Department DP-200 Ground Water Discharge Plan" Submitted on 25 February 2015**

Mr. Parrott and Mr. Mayerson:

Per a request from Mr. Mayerson, please find the enclosed replacement pages for the subject Semi-Annual Environmental Monitoring Report for the second half of 2014.

If you or anyone on your staff has any questions, please contact me at the Grants office at 505.287.4456, extension 34, or call me directly on my cell phone at 505.290.3067.

Respectfully,

**Jesse R. Toepfer**

Closure Manager  
Homestake Mining Company of California  
Office: 505.287.4456 x34 | Cell: 505.290.3067

Copy To:

Document Control Desk, NRC, Washington, DC (w/encl.)  
J. Parrott, NRC, Rockville, Maryland (w/encl.)

NMSS01

Letter to Agencies  
*RE: Replacement Pages for Semi-Annual Environmental Monitoring Report  
Period Covering July – December 2014*

R. Edge, DOE, Westminster, Colorado (w/encl.)  
D. Barr, DOE, Grand Junction, Colorado (w/encl.)  
S. Appaji, Region VI EPA, Dallas, Texas (w/encl.)  
P. Malone, Barrick, Salt Lake City, Utah (electronic copy)  
B. Ferdinand, Barrick, Salt Lake City, Utah (electronic copy)  
G. Hoffman, Hydro-Engineering, Casper, Wyoming (electronic copy)  
M. Schierman, Environmental Restoration Group, Albuquerque, New Mexico (electronic copy)

**Table 3.1-7. Monthly Collection Totals by Aquifer and Area**

	On-Site Collection			Off-Site Collection				
	Alluvial	Upper Chinle	Middle Chinle	South Alluvial	South Upper Chinle	South Middle Chinle	South Lower Chinle	North Alluvial
<b>July</b>	15,144,189	6,952,120	0	9,555,890	0	3,332,110	0	0
<b>August</b>	12,169,637	5,377,930	0	3,336,215	0	1,539,785	0	0
<b>September</b>	11,352,473	4,919,460	0	3,887,610	0	1,314,390	0	0
<b>October</b>	13,215,952	5,363,240	0	6,335,129	0	5,624,871	0	0
<b>November</b>	9,993,695	4,611,300	0	7,249,475	0	5,294,525	0	0
<b>December</b>	11,494,536	5,421,990	0	7,857,325	0	5,009,675	0	0

Note: Totals are in gallons.

**Table 3.1-8. Monthly Injection Totals by Aquifer and Area**

	On-Site Injection			Off-Site Injection				
	Alluvial	Upper Chinle	Middle Chinle	South Alluvial	South Upper Chinle	South Middle Chinle	South Lower Chinle	North Alluvial
<b>July</b>	30,444,321	2,209,440	533,030	11,526,200	0	3,217,000	0	25,425,000
<b>August</b>	24,598,098	1,760,710	413,250	8,327,425	0	3,426,375	0	13,793,000
<b>September</b>	24,205,563	1,752,090	382,470	8,065,960	0	3,777,440	0	19,615,000
<b>October</b>	29,026,868	2,200,200	480,150	7,226,905	0	2,249,695	0	21,183,000
<b>November</b>	21,932,162	1,854,840	358,010	11,404,520	0	3,647,880	0	19,535,000
<b>December</b>	27,453,898	2,372,330	528,640	13,173,310	0	4,697,690	0	26,838,000

**Note:** Totals are in gallons.

**Table 3.1-11. Treatment System Effluent and Fresh Water Monthly Totals**

	Treatment Systems				Fresh Water Injection		
	Zeolite		RO Plant		On-Site	South Off-Site	North Off-Site
	Treated (gallons)	Contaminated (gallons)	Treated (gallons)	Contaminated (gallons)			
<b>July</b>	0	0	10,175,025	2,280,096	22,478,736	14,743,200	25,425,000
<b>August</b>	0	640,000	8,351,368	2,850,624	18,007,440	11,753,800	13,793,000
<b>September</b>	0	214,000	7,952,301	2,297,131	18,005,352	11,843,400	19,615,000
<b>October</b>	0	157,000	10,316,084	1,228,752	20,910,984	9,476,600	21,183,000
<b>November</b>	0	0	7,810,218	2,425,248	15,976,784	15,052,400	19,535,000
<b>December</b>	0	118,000	9,990,668	3,072,384	19,835,560	17,871,000	26,838,000

**Note:** Totals are in gallons.

Table 4.2-1. Lined Pond Water Quality, 3rd 4th Quarters 2014

Sample Point Name	Date	Temp (deg.C)	pH (f) (std. units)	Cond (calc.) (micromhos/cm)	CO3 (mg/l)	Ca (mg/l)	Cl (mg/l)	HCO3 (mg/l)	Mg (mg/l)	K (mg/l)	Na (mg/l)	SO4 (mg/l)	TDS (mg/l)	NO3 (mg/l)
Parameter Code	12	109	51	6	1	7	5	2	3	4	8	10	39	
E Coll Pond	8/4/14	22.70	9.03	13050	160	34.5	732	611	115	13	3310	5790	10500	0.8
	11/5/14	14.70	9.17	14530			852					6730	12000	
Evap Pond 1	8/4/14	22.40	9.41	57140	5280	11.6	5780	4690	289	97	19700	25400	60800	0.3
	11/5/14	15.10	9.27	52950			5460					24600	57700	
Evap Pond 2	8/4/14	22.10	9.19	24480	1200	27.6	1200	1830	138	30	7180	11000	21700	0.6
	11/5/14	14.10	9.20	21110			1310					9240	18200	
Evap Pond 3-A	8/4/14	22.30	9.20	131300	33800	16	44000	29500	601	511	78400	32700	189000	<0.5
	11/5/14	16.20	9.47	123900			48300					22400	215000	
Evap Pond 3-B	8/4/14	24.90	9.22	130900	19400	19	23300	16600	162	293	73400	33300	121000	<0.5
	11/5/14	17.40	9.14	52950			24000					26600	142000	
W Coll Pond	8/4/14	22.50	9.42	12760	294	5.5	720	442	104	12	3240	5620	10000	2.7
	11/5/14	14.40		8732			485					3850	6540	

f = field measurement

t = analyte, total

Table 4.2-1. Lined Pond Water Quality, 3rd 4th Quarters 2014, cont.

Sample Point Name	Date	Mn(t) (mg/l)	Se (mg/l)	Se (t) (mg/l)	Mo (mg/l)	Mo (t) (mg/l)	Unat (mg/l)	Unat (t) (mg/l)	Ra226 (pCi/l)	Ra228 (pCi/l)	Ra226+ Ra228 (pCi/l)	Th230 (pCi/l)	V (mg/l)
Parameter Code		134	40	140	36	136	15	115	45	57	372	48	42
E Coll Pond	8/4/14		0.305		37.8		18		5.5	1	6.5	0.9	0.02
	11/5/14	0.011	0.598		34.5		19						
Evap Pond 1	8/4/14		0.446		159		140		49	8.1	57.1	181	0.3
	11/5/14	0.013	0.231		204		123						
Evap Pond 2	8/4/14		0.552	0.67	64.9	50.4	36.3	28.6	67	2.9	69.9	33.4	0.05
	11/5/14	0.015	0.486		57		25						
Evap Pond 3-A	8/4/14		0.72	0.8	1250	1450	845	1000	171	8.1	179.1	1170	0.5
	11/5/14	<0.001	0.286		1660		1040						
Evap Pond 3-B	8/4/14		1.21	0.91	717	834	429	534	209	5.7	214.7	540	0.7
	11/5/14	<0.001	0.531		996		828						
W Coll Pond	8/4/14		0.518	0.49	31.1	29.6	20	19.5	1.4	0.8	2.2	0.09	0.01
	11/5/14	0.012	0.4		19.2			7.7					

f = field measurement  
t = analyte, total

**Table 4.2-2. Evaporation Pond Monitoring Wells Water Quality**

Sample Point Name	Date	WL (feet)	Temp (deg.C)	pH (f) (std. units)	Cond (calc.) (micromhos/cm)	CO3 (mg/l)	Ca (mg/l)	Cl (mg/l)	HCO3 (mg/l)	Mg (mg/l)	K (mg/l)	Na (mg/l)
Parameter Code		13	12	109	51	6	1	7	5	2	3	4
Site Standard Qal aquifer								250				
DD	8/5/14	48.03	16.40	7.10	3318			67				
	12/11/14	47.50	13.40	7.10	3450			69				
DD2	8/5/14	46.85	15.10	6.99	2808			61				
	12/11/14	46.41	12.60	7.20	2912			61				
X	7/10/14	24.25	16.80	7.35	1910	<5	199	137	502	44.6	5.7	173
	7/23/14					<5	168	114	478	36.4	5	162

Concentrations greater than site standards are in bold.

f = field measurement  
t = analyte, total



**Table 4.2-2. Evaporation Pond Monitoring Wells Water Quality, cont.**

Sample Point Name	Date	SO4 (mg/l)	TDS (mg/l)	NO3 (mg/l)	Se (mg/l)	Mo (mg/l)	Unat (mg/l)	Ra226 (pCi/l)	Ra228 (pCi/l)	Ra226+Ra228 (pCi/l)	Th230 (pCi/l)	V (mg/l)
Parameter Code		8	10	39	40	36	15	45	57	372	48	42
Site Standard Qal aquifer		1500	2734	12	0.32	0.1	0.16			5	0.3	0.02
DD	8/5/14	1770	<b>3020</b>		0.044	<0.03	0.135					
	12/11/14	1730	<b>3030</b>		0.044	<0.03	0.0946					
DD2	8/5/14	1400	2400		<0.005	<0.03	<b>0.21</b>					
	12/11/14	1360	2460		<0.005	<0.03	<b>0.191</b>					
X	7/10/14	475	1300	1.4	0.009	0.05	0.0741					
	7/23/14	391	1100	1.5	0.009	0.06	0.0621	0.32	-0.07	0.25	0.2	0.01

Concentrations greater than site standards are in bold.

f = field measurement  
t = analyte, total

**Table 4.2-3. Compliant Water Quality**

Sample Point Name	Date	Temp (deg.C)	pH (f) (std. units)	Cond (calc.) (micromhos/cm)	CO3 (mg/l)	Ca (mg/l)	Cl (mg/l)	HCO3 (mg/l)	Mg (mg/l)	K (mg/l)	Na (mg/l)
Parameter Code		12	109	51	6	1	7	5	2	3	4
RO SP2	7/10/14										
	8/4/14	21.90	8.02	1760							
	9/19/14										
	10/24/14	18.20	7.93	1321							
	11/5/14	17.00	8.07	1414							
	12/2/14	14.20	7.80	1050							

f = field measurement  
t = analyte, total

**Table 4.2-3. Compliant Water Quality, cont.**

Sample Point Name	Date	SO4 (mg/l)	TDS (mg/l)	NO3 (mg/l)	Se (mg/l)	Mo (mg/l)	Unat (mg/l)	Ra226 (pCi/l)	Ra228 (pCi/l)	Ra226+ Ra228 (pCi/l)	Th230 (pCi/l)	V (mg/l)
Parameter Code		8	10	39	40	36	15	45	57	372	48	42
RO SP2	7/10/14					<0.03	0.0176					
	8/4/14					0.06	0.0291					
	9/19/14	575	1440		0.007	0.03	0.0261					
	10/24/14					0.05	0.0112					
	11/5/14					0.11	0.026					
	12/2/14					0.08	0.0228					

f = field measurement  
t = analyte, total