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April 14, 2011

Document Control Desk  
U.S. Nuclear Regulatory Commission  
11555 Rockville Pike  
Rockville, MD 20852-2746

RE: Groundwater Monitoring Results for 2010  
Docket No. 40-8102  
License No. SUA-1139  
Highland Reclamation Project

Dear Mr. McConnell:

Pursuant to the semiannual reporting requirements of Materials License No. SUA-1139, Conditions 22 and 33, attached are the annual environmental monitoring results covering the Highland Reclamation Project for the period January 1, 2010 through December 31, 2010. This report was prepared on behalf of ExxonMobil by Advanced Environmental Sciences, Inc. (AES).

A summary of the groundwater elevation data is found in Attachment 1. Summaries of the water quality data are found in Attachment 2. Monitoring locations are shown on the map in Figure 1. Sampling of environmental media other than groundwater is not required by the Materials License and was not performed as part of this report.

Static groundwater levels (Attachment 1) show no significant changes in groundwater elevations over the course of the year 2010. Monitored Groundwater quality data (Attachment 2) show no significant changes in concentrations of monitored parameters over the course of 2010. Monitored parameters in the Tailings Dam Sandstone (TDSS) groundwater compliance wells were within groundwater protection standards during 2010, with the exception of uranium concentrations in POC well 175 and combined radium in POC well 176. The uranium concentration in well 175 has been discussed in previous correspondence (letter to Tom McLaughlin, NRC, from ExxonMobil, January 5, 2011) and Alternate Concentration Limits (ACLs) for this well are proposed in the forthcoming ACL Amendment Application which will be submitted to NRC shortly.

The combined radium concentration in well 176 exceeded the groundwater protection standard (5.0 pCi/L) in the first quarter of 2010, with a result of 7.1 pCi/L +/- 1.25. A statistical analysis of the historic combined radium concentration data for this well was performed. The data are normally

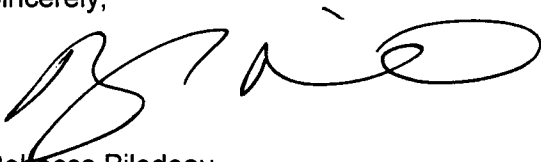
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distributed, and therefore a regression analysis and seasonal regression analysis are the appropriate statistical methods to determine if there is a significant trend or a significant seasonal trend. The results show no significant trend upward or downward. The 95 upper confidence limit on the mean (UCL95) was calculated, with a result of 4.585 pCi/L, which is below the groundwater protection standard. The groundwater protection standards are defined by License Condition 33 of the Material License.

If there are any questions or comments regarding the groundwater monitoring results, please contact me at (970) 461-5054 or Mahesh Vidyasagar with ExxonMobil at (281) 654-8458.

Sincerely,

A handwritten signature in black ink, appearing to read 'Rebecca Bilodeau', with a large, stylized initial 'B' and a long horizontal stroke.

Rebecca Bilodeau  
Project Manager

cc: Keith McConnell, NRC  
Thomas McLaughlin, NRC  
Mahesh Vidyasagar, ExxonMobil  
Bruce Wielinga, AMEC

**Attachment 1 - Water Level Data 2010**

Well Number	Well Name	Datum (ft)	Water Level (ft)			
			1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
15	TDM DR	5186.8	Dry	Dry	Dry	Dry
112	TDM VII	5188.8	5119.69	5119.73	5118.8	5119.5
114	TDM IX	5243.53	5099.83	5099.94	5098.83	5099.33
116	TDM XI	5243.41	5058.08	5058.73	5054.18	5058.17
117	TDM XII	5265.35	5121.8	Dry	Dry	Dry
120	TDM XXI	5224.82	5111.78	5111.63	5114.97	5114.77
125	TDM XXVI	5171.3	5121.15	5120.95	5119.9	5122.3
127	TDM XXVIII	5203.6	Dry	Dry	Dry	Dry
128	TDM XXIX	5203.8	5069.7	5069.04	5069.98	5068.49
129	TDM XXX	5226.36	5063.06	5063.08	5060.54	5060.94
134	RM-4	5158.7	5125.18	5125.26	5124.43	5124.64
148	TDM XXXII	5112.9	Dry	Dry	Dry	Dry
171	TDM XXXVIII	5205.3	5049.9	5050.78	5051.3	5042.51
172	EM-5	5272.09	5079.71	5080.15	5080.09	5079.62
173	TDM XXXIX	5241.09	5065.73	5065.92	5059.8	5065.35
174	TDM XL	5380.39	5084	5084.75	5084.24	5083.88
175	TDM XLI	5259.6	5105.4	5105.7	5106.78	5105.1
176	TDM XLII	5452.5	5309.2	5309.1	5308.84	5310.75
177	TDM XLIII	5264.19	Dry	Dry	Dry	Dry
178	TDM XLIV	5277.14	5113.21	5112.72	5112.98	5114.24
179	TDM XLV	5295.7	5111.87	5111.77	5114.45	5111.53
180	TDM XLVI	5324.39	Dry	Dry	Dry	Dry
181	TDM XLVII	5237.7	5115.3	5115.37	5118.8	5114.9
182	TDM XLVIII	5240.4	5111.5	5111.77	5114.7	5114.29
183	TDM XLIX	5301.4	5103.92	5103.9	5105.84	5105.5

Attachment 2 - Water Quality Data 2010

Well Number	Well Name	Sample Date	As (mg/l)	Cd (mg/l)	Cl (mg/l)	Cr (mg/l)	Gross Alpha (pCi/L)	Pb (mg/l)	Ni (mg/l)	NO2 +NO3 (mg/l)	pH-Field (s.u.)	Ra226 (pCi/L)	Ra228 (pCi/L)	Ra226 +228 (pCi/L)	Se (mg/l)	Na (mg/l)	SO4 (mg/l)	TDS (mg/l)	Th230 (pCi/L)	Unat (mg/l)		
<b>Backfill Monitor</b>																						
171	TDM XXXVIII	02/12/10	<0.00095	<0.0002	60.5	<0.0006	1.1 +/- 0.3	<0.00005	0.00062	<0.04	6.46	<0.2	2 +/- 0.93	<2.2	<0.00099	108	544	833	<0.2	0.0011		
		05/14/10			33.7						<0.04	6.96					105	494	885			
		08/18/10	<0.00095	<0.0002	37	<0.0006	<0.6	0.0024	0.0012		0.058	6.88	<0.22	<1.2	<1.42	<0.00025	98	552	869	<0.1	0.0012	
173	TDM XXXIX	11/01/10			34.7					<0.04	6.71					99.9	477	850				
		02/12/10	<0.00095	<0.0002	93.7	<0.0006	1.1 +/- 0.3	<0.00005	<0.0005	<0.04	7.31	0.42 +/- 0.19	2.2 +/- 1	2.62 +/- 1.19	<0.00099	91.5	452	869	<0.1	0.0031		
		05/10/10			109						<0.04	7.36					94.2	410	901			
180	TDM XLVI	08/18/10	<0.00095	<0.0002	102	<0.0006	0.8 +/- 0.5	<0.001	<0.0005	<0.04	7.01	0.47 +/- 0.19	1.3 +/- 0.75	1.77 +/- 0.94	<0.00025	85.1	454	884	<0.1	0.0032		
		11/03/10			83.4						<0.04	7.39					85.9	392	870			
		03/03/10	Dry																			
		05/14/10	Dry																			
		08/20/10	Dry																			
		11/05/10	Dry																			
<b>OSS Monitor</b>																						
116	TDM XI	02/06/10	<0.00095	<0.0002	75.6	<0.0006	2.4 +/- 0.6	<0.00005	<0.0005	<0.04	7.01	1.9 +/- 0.27	4.2 +/- 0.93	6.1 +/- 1.2	<0.00099	106	860	1500	<0.1	0.0148		
		04/29/10			66.6						<0.04	7.22					109	733	1490			
		07/30/10	<0.00095	<0.0002	69.6	<0.0006	1.7 +/- 0.7	<0.00005	<0.0005	<0.04	7.32	0.91 +/- 0.21	2.8 +/- 0.75	3.71 +/- 0.96	<0.00025	113	739	1550	0.2 +/- 0.1	0.0156		
128	TDM XXIX	10/30/10			85.3					<0.04	7.24					97.2	751	1560				
		02/08/10	<0.00095	<0.0002	7	<0.0006	0.8 +/- 0.4	0.0019	0.0043	<0.04	7.09	0.42 +/- 0.14	<1.2	<1.62	<0.00099	103	161	462	<0.2	0.005		
		05/03/10			6.8						0.049	7.47					95.9	123	434			
129	TDM XXX	08/02/10	<0.00095	<0.0002	7.1	<0.0006	<0.7	0.002	0.0044	<0.04	7.14	<0.17	<1	<1.17	<0.00025	99.7	134	453	<0.2	0.0041		
		11/01/10			6.8						<0.04	7.55					91.3	128	444			
		02/10/10	0.0012	<0.0002	64	<0.0006	0.8 +/- 0.4	0.00009	0.003	0.047	6.96	0.45 +/- 0.13	<1.1	<1.55	0.0016	164	547	967	<0.2	0.0011		
148	TDM XXXII	05/03/10			42.8					4.3	7.29					166	491	1090				
		08/02/10	<0.00095	<0.0002	20	<0.0006	<0.7	0.00013	0.0216	5.2	6.79	0.23 +/- 0.12	<0.96	<1.19	0.864	195	1200	1880	<0.1	0.0044		
		11/01/10			42.8					0.38	7.1					174	946	1710				
		03/03/10	Dry																			
		05/14/10	Dry																			
		08/20/10	Dry																			
		11/05/10	Dry																			
<b>TDSS Background</b>																						
134	RM-4	02/11/10	<0.00095	<0.0002	16.8	<0.0006	1.3 +/- 0.5	<0.00005	<0.0005	<0.04	7.32	<0.2	2.1 +/- 0.91	<2.3	<0.00099	218	653	1130	<0.1	0.001		
		05/04/10			17.7						<0.04	7.30					217	551	1130			
		08/16/10	<0.00095	<0.0002	18.1	<0.0006	<0.7	<0.001	<0.0005	<0.04	7.56	0.41 +/- 0.17	1 +/- 0.64	1.41 +/- 0.81	<0.00025	199	521	1180	<0.1	0.0013		
172	EM-5	11/01/10			20.6					<0.04	7.39					197	576	1150				
		02/15/10	<0.00095	<0.0002	7	<0.0006	1.1 +/- 0.3	<0.00005	<0.0005	<0.04	7.59	0.6 +/- 0.21	2 +/- 0.99	2.6 +/- 1.2	<0.00099	118	327	574	<0.09	<0.0003		
		05/10/10			8.7						<0.04	7.55					119	287	596			
174	TDM XL	08/13/10	<0.00095	<0.0002	9.1	<0.0006	1.3 +/- 0.6	<0.00005	<0.0005	<0.04	7.89	0.92 +/- 0.24	<1.2	<2.12	<0.00025	118	315	604	<0.1	0.0003		
		11/02/10			8.2						<0.04	7.54					109	284	577			
		02/15/10	<0.00095	<0.0002	4.6	<0.0006	0.9 +/- 0.3	<0.00005	<0.0005	<0.04	7.51	0.29 +/- 0.13	<1.2	<1.49	<0.00099	68	91.5	309	<0.2	<0.0003		
182	TDM XLVIII	04/30/10			4.6					<0.04	7.62					65.9	94.2	307				
		08/13/10	<0.00095	<0.0002	5.8	<0.0006	<0.6	<0.00005	<0.0005	<0.04	8.08	<0.16	<0.9	<1.06	<0.00025	73.6	106	318	<0.1	<0.0003		
		11/02/10			5.3						<0.04	7.83					67.2	94.8	312			
182	TDM XLVIII	02/16/10	<0.00095	<0.0002	8.9	<0.0006	0.6 +/- 0.3	0.000093	<0.0005	<0.04	7.93	0.46 +/- 0.17	1.7 +/- 0.94	2.16 +/- 1.11	<0.00099	121	189	426	<0.1	<0.0003		
		05/04/10			13.1						<0.04	7.79					114	176	422			
		08/13/10	<0.00095	<0.0002	12.6	<0.0006	<0.6	0.000094	0.00084	<0.04	7.71	0.39 +/- 0.15	<1.4	<1.79	<0.00025	113	204	432	<0.2	<0.0003		
		11/04/10			12.5					<0.04	8.01					89.9	186	422				
<b>TDSS Compliance Monitor Well</b>																						
<b>TDSS Compliance Standards*</b>			0.05	0.01	---	0.1	15	0.05	0.1	---	---	---	---	5	0.05	---	---	---	0.55	0.03		
125	TDM XXVI	02/08/10	<0.00095	<0.0002	12.3	<0.0006	2.8 +/- 0.7	0.000076	0.002	1.4	7.12	1.2 +/- 0.22	1.8 +/- 0.87	3 +/- 1.09	0.0142	81.9	403	754	0.5 +/- 0.2	0.0167		
		05/03/10			10.8						1.5	7.27					84	322	799			
		08/02/10	<0.00095	<0.0002	11.7	<0.0006	4.1 +/- 0.9	<0.00005	0.0015	1.6	7.29	0.77 +/- 0.21	1.6 +/- 0.76	2.37 +/- 0.97	0.0151	82.4	328	803	0.6 +/- 0.2	0.0161		
175	TDM XLI	10/30/10			13.8					1.6	7.2					82.1	366	812				
		02/16/10	<0.00095	<0.0002	371	<0.0006	2.3 +/- 0.5	0.00026	0.766	<0.04	6.34	1.5 +/- 0.23	9.1 +/- 0.93	10.6 +/- 1.16	<0.00099	281	2850	4640	<0.5	0.0065		
		05/10/10			275						0.045	6.48					300	2880	4880			
176	TDM XLII	08/03/10	<0.00095	<0.0002	281	<0.0006	1 +/- 0.5	0.00022	0.703	<0.04	6.39	0.6 +/- 0.19	6.7 +/- 0.9	7.3 +/- 1.09	0.00032	290	2720	4780	<0.1	0.0325		
		11/03/10			269						<0.04	6.52					266	2820	4740			
		02/23/10	<0.00095	<0.0002	235	<0.0006	1.2 +/- 0.4	<0.00005	<0.0005	<0.04	6.81	1.4 +/- 0.25	5.7 +/- 1	7.1 +/- 1.25	<0.00099	228	2100	3970	<0.2	<0.0003		
177	TDM XLIII	05/05/10			237					<0.04	6.89					224	1990	4040				
		08/03/10	<0.00095	<0.0002	257	<0.0006	1.1 +/- 0.5	0.000067	0.0015	<0.04	6.79	0.8 +/- 0.22	3.8 +/- 0.82	4.6 +/- 1.04	<0.00025	230	2020	4060	<0.2	<0.0003		
		11/03/10			254						<0.04	6.87					211	2070	3890			
		03/15/10	No sample -unable to measure																			
		05/14/10	No sample -unable to measure																			
		08/20/10	No sample -unable to measure																			
		11/04/10	No sample -unable to measure																			

Attachment 2 - Water Quality Data 2010

Well Number	Well Name	Sample Date	As (mg/l)	Cd (mg/l)	Cl (mg/l)	Cr (mg/l)	Gross Alpha (pCi/L)	Pb (mg/l)	Ni (mg/l)	NO2 +NO3 (mg/l)	pH-Field (s.u.)	Ra226 (pCi/L)	Ra228 (pCi/L)	Ra226 +228 (pCi/L)	Se (mg/l)	Na (mg/l)	SO4 (mg/l)	TDS (mg/l)	Th230 (pCi/L)	Unat (mg/l)
TDSS Monitor																				
15	TDM DR		Dry																	
		05/03/10	Dry																	
		08/20/10	Dry																	
		11/05/10	Dry																	
112	TDM VII	02/05/10	<0.00095	<0.0002	108	<0.0006	1.6 +/- 0.5	<0.00005	0.0031	<0.04	7.12	1.1 +/- 0.21	2 +/- 0.91	3.8 +/- 1.12	<0.00099	248	1730	2950	<0.1	0.0363
		04/29/10			103					<0.04	7.11					244	1560	2960		
		07/30/10	<0.00095	<0.0002	102	<0.0006	0.8 +/- 0.5	0.00014	0.0031	<0.04	7.20	0.28 +/- 0.14	2 +/- 0.73	2.28 +/- 0.87	<0.00025	243	1460	2870	<0.1	0.0376
		10/29/10			99.6					<0.04	7.18					214	1550	2840		
114	TDM IX	02/05/10	<0.00095	<0.0002	292	<0.0006	7.8 +/- 1	<0.00005	0.541	<0.04	6.33	2 +/- 0.33	3.3 +/- 0.78	5.3 +/- 1.11	<0.00099	303	3620	5210	<0.2	<0.0003
		04/29/10			308					<0.04	6.43					295	3230	5220		
		07/29/10	<0.00095	<0.0002	279	<0.0006	2.8 +/- 0.8	0.000096	0.667	<0.04	5.73	0.19 +/- 0.11	3.6 +/- 0.69	3.79 +/- 0.8	<0.00025	296	3030	5180	0.4 +/- 0.1	0.0003
		10/29/10			343					<0.04	6.13					273	3240	5110		
117	TDM XII	03/15/10	Dry																	
		05/03/10	Dry																	
		08/20/10	Dry																	
		11/04/10	Dry																	
120	TDM XXI	02/06/10	<0.00095	<0.0002	455	<0.0006	2.3 +/- 0.6	<0.00005	0.0049	<0.04	6.77	0.72 +/- 0.15	<0.96	<1.68	<0.00099	310	2170	4210	<0.2	0.0005
		05/03/10			378					<0.04	6.87					325	1670	4190		
		08/02/10	<0.00095	<0.0002	403	<0.0006	1.1 +/- 0.6	0.00015	0.0066	<0.04	6.78	<0.28	<1.7	<1.98	0.00029	342	1840	4320	<0.2	0.0006
		10/30/10			478					<0.04	6.86					290	1970	4220		
127	TDM XXVIII	02/08/10	Dry																	
		05/03/10	Dry																	
		08/20/10	Dry																	
		11/01/10	Dry																	
178	TDM XLIV	02/12/10	<0.00095	0.0014	303	<0.0006	1.6 +/- 0.4	0.0024	0.236	1.4	6.53	0.6 +/- 0.15	1.3 +/- 0.62	1.9 +/- 0.77	<0.00099	268	2440	4080	<0.1	0.0027
		05/14/10			237					1	6.99					265	2180	4180		
		08/03/10	<0.00095	0.0013	255	0.0013	NA	0.0078	0.236	1.3	6.81	NA	NA	NA	0.002	255	2050	4150	NA	NA
		11/04/10			253					1.4	7.13					255	2150	3990		
179	TDM XLV	02/23/10	<0.00095	<0.0002	172	<0.0006	0.8 +/- 0.3	<0.00005	<0.0005	<0.04	7.17	0.84 +/- 0.21	2.3 +/- 0.92	3.14 +/- 1.13	<0.00099	286	1540	2740	<0.2	<0.0003
		05/05/10			173					<0.04	7.19					284	1510	2690		
		08/13/10	<0.00095	<0.0002	183	<0.0006	1.8 +/- 0.6	0.000097	0.00093	<0.04	7.13	1.5 +/- 0.25	2.3 +/- 0.65	3.8 +/- 0.9	<0.00025	287	1590	2740	0.09 +/- 0.08	0.0007
		11/05/10			167					<0.04	7.2					278	1560	2670		
181	TDM XLVII	02/16/10	<0.00095	<0.0002	58.8	<0.0006	0.8 +/- 0.3	<0.00005	<0.0005	<0.04	7.24	0.77 +/- 0.2	<1.4	<2.17	<0.00099	225	661	1290	<0.2	<0.0003
		05/04/10			67.5					<0.04	7.09					220	600	1310		
		08/11/10	<0.00095	<0.0002	73	<0.0006	<0.6	0.000099	0.00082	<0.04	6.94	<0.19	1.8 +/- 0.73	<1.99	<0.00025	219	673	1340	<0.09	<0.0003
		11/04/10			70					<0.04	7.22					208	653	1330		
183	TDM XLIX	02/23/10	<0.00095	<0.0002	131	<0.0006	0.7 +/- 0.3	<0.00005	<0.0005	<0.04	7.2	1 +/- 0.22	2 +/- 0.86	3 +/- 1.08	<0.00099	237	1110	2020	<0.1	<0.0003
		05/05/10			130					<0.04	7.31					245	1010	2060		
		08/16/10	<0.00095	<0.0002	148	<0.0006	1.3 +/- 0.5	<0.001	0.0015	<0.04	6.89	0.68 +/- 0.18	1.7 +/- 0.83	2.38 +/- 1.01	<0.00025	244	1100	2100	<0.2	<0.0003
		11/05/10			132					<0.04	7.3					222	1090	2070		

\*Note: Alternate Concentration Limits (ACL) apply to:

Well 125: Unat = 0.089 mg/l

Well 175: Ni = 1.8 mg/l; Ra226+228 = 25 pCi/L

Well 177: Unat = 0.11 mg/l

NM = not measured

Bold = Result exceeds Groundwater Protection Standards



**Figure 1**  
**Annual Monitoring Report - Monitoring Well Location Map**  
**Highland Reclamation Project**