Advanced Environmental Sciences, Inc.

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April 16, 2010

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

RE: Groundwater Monitoring Results for 2009
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, 2009 through December 31, 2009. 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 2009.

Monitored Groundwater quality data (Attachment 2) show no significant changes in concentrations of monitored parameters over the course of 2009. Monitored parameters in the Tailings Dam Sandstone (TDSS) groundwater compliance wells were within groundwater protection standards during 2009. The groundwater protection standards are defined by Condition 33 of the Materials License which was modified in 2006, via license amendment 58.

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,

Rebecca Bilodeau
Project Manager

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

NMSS01
NMSS

Attachment 1 - Water Level Data 2009

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	5120.4	5120.2	5119.85	5119.77
114	TDM IX	5243.53	5098.48	5099.93	5100.03	5099.73
116	TDM XI	5243.41	5057.61	5057.91	5057.86	5057.81
117	TDM XII	5265.35	5120.45	Dry	Dry	Dry
120	TDM XXI	5224.82	5114.94	5111.92	5111.92	5111.92
125	TDM XXVI	5171.3	5122.5	5122	5121.77	5121.54
127	TDM XXVIII	5203.6	Dry	Dry	Dry	Dry
128	TDM XXIX	5203.8	5062.8	5069.07	5069	5069.05
129	TDM XXX	5226.36	5062.36	5062.66	5062.43	5062.73
134	RM-4	5158.7	5124.3	5126.9	5125.2	5125.17
148	TDM XXXII	5112.9	Dry	Dry	Dry	Dry
171	TDM XXXVIII	5205.3	5050.1	5050.2	5050.5	5049.28
172	EM-5	5272.09	5079.79	5080.29	5078.21	5080.02
173	TDM XXXIX	5241.09	5065.32	5065.39	5067.39	5065.7
174	TDM XL	5380.39	5084.09	5084.09	5084.12	5084.87
175	TDM XLI	5259.6	5103.6	5105.7	5105.72	5105.98
176	TDM XLII	5452.5	5309.35	5311.4	5309.4	5309.59
177	TDM XLIII	5264.19	Dry	Dry	Dry	Dry
178	TDM XLIV	5277.14	5113.18	5113.04	5112.6	5113.42
179	TDM XLV	5295.7	5112	5112.3	5112.4	5112.12
180	TDM XLVI	5324.39	Dry	Dry	Dry	Dry
181	TDM XLVII	5237.7	5115.7	5115.6	5115.5	5115.58
182	TDM XLVIII	5240.4	5116.8	5111.8	5111.75	5111.78
183	TDM XLIX	5301.4	5102.9	5104.2	5104.18	5104.35

Attachment 2 - Water Quality Data 2009

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)
Backfill Monitor																				
171	TDM XXXVIII	3/2/2009	<0.00095	<0.00021	30.5	<0.00068	<0.8	0.00031	0.0022	<0.04	6.58	0.46 +/- 0.11	1.4 +/- 0.67	1.86 +/- 0.78	<0.00099	106	484	857	<0.2	0.001
		5/18/2009			63.9					<0.04	6.28					99.1	559	854		
		8/13/2009	<0.00095	<0.0002	33.9	<0.0006	0.9 +/- 0.6	0.000072	0.0012	0.064	6.24	0.34 +/- 0.13	<1.2	<1.54	<0.00099	107	598	860	<0.2	0.0011
		11/9/2009			34.1					<0.04	6.48					105	497	858		
173	TDM XXXIX	2/23/2009	<0.00095	<0.00021	92.4	<0.00068	2.3 +/- 0.8	0.00018	<0.0005	<0.04	7.09	0.81 +/- 0.13	1.5 +/- 0.65	2.31 +/- 0.78	<0.00099	90.3	406	884	<0.2	0.0029
		5/18/2009			114					<0.04	7.55					91.7	462	891		
		8/10/2009	<0.00095	<0.0002	126	<0.0006	0.8 +/- 0.5	0.000064	<0.0005	<0.04	7.61	0.49 +/- 0.14	<1.2	<1.69	<0.00099	90.2	438	890	<0.2	0.0029
		11/11/2009			98.1					<0.04	7.63					97.7	419	883		
180	TDM XLVI	3/13/2009	Dry																	
		5/20/2009	Dry																	
		8/31/2009	Dry																	
		11/20/2009	Dry																	
OSS Monitor																				
116	TDM XI	2/18/2009	<0.00095	<0.00021	81.9	<0.00068	1.4 +/- 0.7	<0.00005	<0.0005	<0.04	7.22	0.97 +/- 0.2	5.3 +/- 0.73	6.27+/- 0.93	<0.00099	109	731	1470	<0.2	0.0137
		5/19/2009			78.1					<0.04	7.21					98.7	840	1510		
		8/31/2009	<0.00095	<0.0002	78.1	<0.0006	2.1 +/- 0.6	<0.00005	<0.0005	<0.04	7.15	1.4 +/- 0.26	4.7 +/- 1.1	6.1 +/- 1.36	<0.00099	106	720	1530	<0.1	0.015
		11/3/2009			68.1					<0.04	7.13					106	723	1510		
128	TDM XXIX	4/1/2009	<0.00095	<0.00021	2.3	<0.00068	1.4 +/- 0.5	0.00025	0.003	<0.04	NM	<0.25	<1.4	<1.65	<0.00099	102	36	463	<0.1	0.0048
		6/17/2009			6.6					<0.04	7.27					104	179	469		
		8/25/2009	<0.00095	<0.0002	9.3	<0.0006	<0.7	0.00023	0.0027	<0.04	6.9	<0.18	<1.1	<1.28	<0.00099	93.3	150	466	<0.2	0.0042
		11/6/2009			7.5					<0.04	7.10					106	177	462		
129	TDM XXX	2/19/2009	<0.00095	<0.00021	52	<0.00068	1.5 +/- 0.7	0.000056	0.0059	<0.04	7.11	<0.17	1.7 +/- 0.63	<1.87	0.0017	166	597	1140	<0.2	0.0012
		5/21/2009			35.1					14.5	7.12					187	1160	1880		
		9/1/2009	<0.00095	<0.0002	61.7	0.0007	<0.7	0.000076	0.0118	2.8	6.92	<0.17	<1.1	<1.27	0.272	183	964	1670	<0.2	0.0024
		11/9/2009			65.1					0.5	7.30					168	737	1420		
148	TDM XXXII	3/13/2009	Dry																	
		6/17/2009	Dry																	
		8/24/2009	Dry																	
		11/17/2009	Dry																	
TDSS Background																				
134	RM-4	3/2/2009	<0.00095	<0.00021	16.2	<0.00068	<0.8	<0.00005	<0.0005	<0.04	7.49	<0.17	<0.96	<1.13	<0.00099	219	581	1150	<0.2	0.0009
		5/18/2009			20.5					<0.04	7.41					197	675	1160		
		8/10/2009	<0.00095	<0.0002	18.6	<0.0006	<0.7	<0.00005	<0.0005	<0.04	7.55	0.43 +/- 0.16	<1.2	<1.63	<0.00099	191	648	1130	<0.1	0.001
		11/6/2009			19.5					<0.04	7.54					213	611	1170		
172	EM-5	2/18/2009	<0.00095	<0.00021	8.2	<0.00068	1.3 +/- 0.7	<0.00005	<0.0005	<0.04	7.77	0.98 +/- 0.15	1.5 +/- 0.68	2.48 +/- 0.83	<0.00099	110	296	575	<0.1	<0.0003
		5/19/2009			10.2					<0.04	7.79					112	326	582		
		8/12/2009	<0.00095	<0.0002	175	<0.0006	1.6 +/- 0.6	<0.00005	<0.0005	<0.04	7.82	0.67 +/- 0.17	1.6 +/- 0.83	2.27 +/- 1.0	<0.00099	123	386	564	<0.2	<0.0003
		11/11/2009			6.1					<0.04	7.62					118	292	572		
174	TDM XL	2/18/2009	<0.00095	<0.00021	5.4	<0.00068	1 +/- 0.3	<0.00005	<0.0005	<0.04	7.86	0.29 +/- 0.1	1.2 +/- 0.73	1.49 +/- 0.83	<0.00099	76.4	100	306	<0.2	<0.0003
		5/19/2009			6.3					<0.04	7.81					71.2	106	311		
		9/2/2009	<0.00095	<0.0002	5.3	<0.0006	1 +/- 0.6	0.000066	<0.0005	<0.04	7.82	<0.17	<1.3	<1.47	<0.00099	64	108	311	<0.2	<0.0003
		11/12/2009			5					<0.04	7.75					73.5	105	311		
182	TDM XLVIII	3/5/2009	<0.00095	<0.00021	11.1	<0.00068	1 +/- 0.3	<0.00005	<0.0005	<0.04	8.11	<0.21	<1.1	<1.31	<0.00099	112	188	418	<0.2	<0.0003
		5/21/2009			12					<0.04	7.94					117	203	426		
		8/11/2009	<0.00095	<0.0002	97.3	<0.0006	<0.7	0.000091	<0.0005	<0.04	8.11	0.23 +/- 0.12	<1.3	<1.53	<0.00099	129	203	426	<0.2	<0.0003
		11/5/2009			12.2					<0.04	7.93					114	206	437		
TDSS Compliance Monitor Well																				
125	TDM XXVI	2/19/2009	<0.00095	<0.00021	14.2	0.001	3.7 +/- 2	<0.00005	0.0029	0.31	7.19	<0.17	<0.94	<1.11	0.0038	90.6	630	819	<0.2	0.015
		5/22/2009			13					1.1	7.23					78.3	374	768		
		8/24/2009	<0.00095	<0.0002	12.6	<0.0006	2.1 +/- 0.9	0.00019	0.0015	1	7.03	0.8 +/- 0.18	2.8 +/- 0.82	3.6 +/- 1.0	0.0103	77.2	356	757	0.7 +/- 0.2	0.0173
		11/11/2009			10.2					1.2	7.22					86.8	333	765		
175	TDM XLI	2/19/2009	<0.00095	<0.00021	280	<0.00068	2.4 +/- 0.5	0.00055	0.808	<0.4	6.35	1.4 +/- 0.17	7.4 +/- 0.85	8.8 +/- 1.02	<0.00099	307	3090	5100	<0.2	0.0284
		5/20/2009			300					<0.04	6.39					308	3330	3980		
		8/31/2009	<0.00095	<0.0002	296	<0.0006	1.3 +/- 0.6	0.000054	0.797	0.042	6.37	0.81 +/- 0.16	9.4 +/- 1	10.21 +/- 1.16	<0.005	290	2840	5070	<0.2	0.0289
		11/12/2009			295					<0.04	6.39					282	3140	4950		
176	TDM XLII	3/3/2009	<0.00095	<0.00021	231	<0.00068	2.1 +/- 0.4	<0.00005	<0.0005	<0.04	7.01	0.95 +/- 0.21	3.3 +/- 0.74	4.25 +/- 0.95	<0.00099	246	2310	4150	<0.2	<0.0003
		5/21/2009			241					0.043	6.84					248	2840	4020		
		8/12/2009	<0.00095	<0.0002	217	<0.0006	1.1 +/- 0.6	0.000056	<0.0005	<0.04	7.02	0.83 +/- 0.16	4.4 +/- 0.83	5.23 +/- 0.99	<0.00099	241	1990	4100	<0.2	<0.0003
		11/6/2009			264					<0.04	6.87					212	2180	4100		
177	TDM XLIII	3/13/2009	No sample -unable to measure																	
		5/20/2009	No sample -unable to measure																	
		9/1/2009	No sample -unable to measure																	
		11/20/2009	No sample -unable to measure																	

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	3/13/2009	Dry																	
		5/22/2009	Dry																	
		8/13/2009	Dry																	
		11/18/2009	Dry																	
112	TDM VII	2/19/2009	<0.00095	<0.00021	121	<0.00068	1.3 +/- 0.7	0.00018	0.0038	<0.04	7.08	0.56 +/- 0.17	0.96 +/- 0.58	1.52 +/- 0.75	<0.00099	237	1760	3080	<0.1	0.0358
		5/22/2009			144					<0.04	7.04					240	1860	3080		
		8/19/2009	<0.00095	<0.0002	156	<0.0006	0.6 +/- 0.4	0.00011	0.0035	<0.04	7.06	0.29 +/- 0.14	4.6 +/- 0.98	4.89 +/- 1.12	<0.00099	225	1890	2980	<0.2	0.0365
		11/3/2009			107					<0.04	7.10					242	1760	3180		
114	TDM IX	2/18/2009	<0.00095	<0.00021	307	<0.00068	<0.8	<0.00005	0.876	<0.4	5.83	0.29 +/- 0.15	1.6 +/- 0.66	1.89 +/- 0.81	<0.00099	289	3670	5380	<0.2	<0.0003
		5/20/2009			326					0.18	5.94					320	3970	5530		
		8/31/2009	<0.00095	0.00054	357	<0.0006	0.8 +/- 0.4	0.0031	0.984	<0.04	6.53	0.43 +/- 0.16	6.6 +/- 1.1	7.03 +/- 1.26	<0.005	306	3220	5300	<0.1	<0.0003
		11/3/2009			297					0.044	6.24					299	3300	5370		
117	TDM XII	3/13/2009	No Sample																	
		5/20/2009	Dry																	
		9/1/2009	Dry																	
		11/20/2009	Dry																	
120	TDM XXI	2/19/2009	<0.00095	<0.00021	435	<0.00068	1.9 +/- 0.8	<0.00005	0.0021	<0.4	6.62	0.64 +/- 0.19	3.3 +/- 0.73	3.94 +/- 0.92	<0.00099	298	1930	4160	<0.2	0.0005
		5/21/2009			432					<0.04	6.80					317	2130	4260		
		8/25/2009	<0.0048	<0.001	550	<0.003	1.2 +/- 0.5	<0.00025	0.0027	<0.04	6.78	<0.16	2.5 +/- 0.85	<2.66	<0.005	279	1830	4110	<0.2	0.0005
		11/9/2009			475					<0.04	6.78					299	1900	4210		
127	TDM XXVIII	3/13/2009	Dry																	
		6/17/2009	Dry																	
		8/24/2009	Dry																	
		11/18/2009	Dry																	
178	TDM XLIV	4/1/2009	<0.00095	0.0018	254	<0.00068	2.3 +/- 0.6	0.0034	0.399	1.4	7.25	0.6 +/- 0.19	<1.1	<1.7	<0.00099	271	2290	4240	<0.3	0.0026
		6/17/2009			370					1.9	7.48					270	2850	4300		
		9/10/2009	<0.00095	0.0012	277	<0.0006	<0.7	0.0013	0.221	1.7	6.75	0.42 +/- 0.12	<1	<1.42	<0.00099	272	2230	4130	<0.2	0.0021
		11/12/2009			264					1.5	6.99					269	2130	4100		
179	TDM XLV	3/3/2009	<0.00095	<0.00021	159	<0.00068	1.7 +/- 0.4	<0.00005	0.00077	<0.04	7.31	0.46 +/- 0.16	1.9 +/- 0.68	2.36 +/- 0.84	<0.00099	289	1460	2570	<0.2	<0.0003
		5/20/2009			163					<0.04	7.33					299	1710	2640		
		8/12/2009	<0.00095	<0.0002	203	<0.0006	0.9 +/- 0.5	<0.00005	<0.0005	<0.04	7.43	0.54 +/- 0.14	2.9 +/- 0.78	3.44 +/- 0.92	<0.00099	323	1710	2680	<0.1	<0.0003
		11/5/2009			203					<0.04	7.25					278	1790	2680		
181	TDM XLVII	3/4/2009	<0.00095	<0.00021	58.4	<0.00068	1.3 +/- 0.3	<0.00005	<0.0005	<0.04	7.35	0.46 +/- 0.17	<1.1	<1.56	<0.00099	220	554	1320	<0.3	<0.0003
		5/21/2009			75.2					<0.04	7.29					237	661	1330		
		8/11/2009	<0.00095	<0.0002	72.6	<0.0006	<0.7	<0.00005	<0.0005	<0.04	7.43	0.52 +/- 0.14	1.8 +/- 0.78	2.32 +/- 0.92	<0.00099	241	503	1330	<0.2	<0.0003
		11/5/2009			72.1					<0.04	7.11					215	630	1320		
183	TDM XLIX	3/3/2009	<0.00095	<0.00021	137	<0.00068	1.5 +/- 0.4	<0.00005	<0.0005	<0.04	7.22	0.4 +/- 0.16	1.6 +/- 0.69	2.0 +/- 0.85	<0.00099	229	1080	2020	<0.2	<0.0003
		5/20/2009			137					<0.04	7.28					246	1110	1980		
		8/12/2009	<0.00095	<0.0002	367	<0.0006	0.9 +/- 0.5	<0.00005	0.00052	<0.04	7.39	<0.14	1.7 +/- 0.84	<1.84	<0.00099	241	1110	2030	<0.1	<0.0003
		11/6/2009			152					<0.04	7.33					241	1100	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

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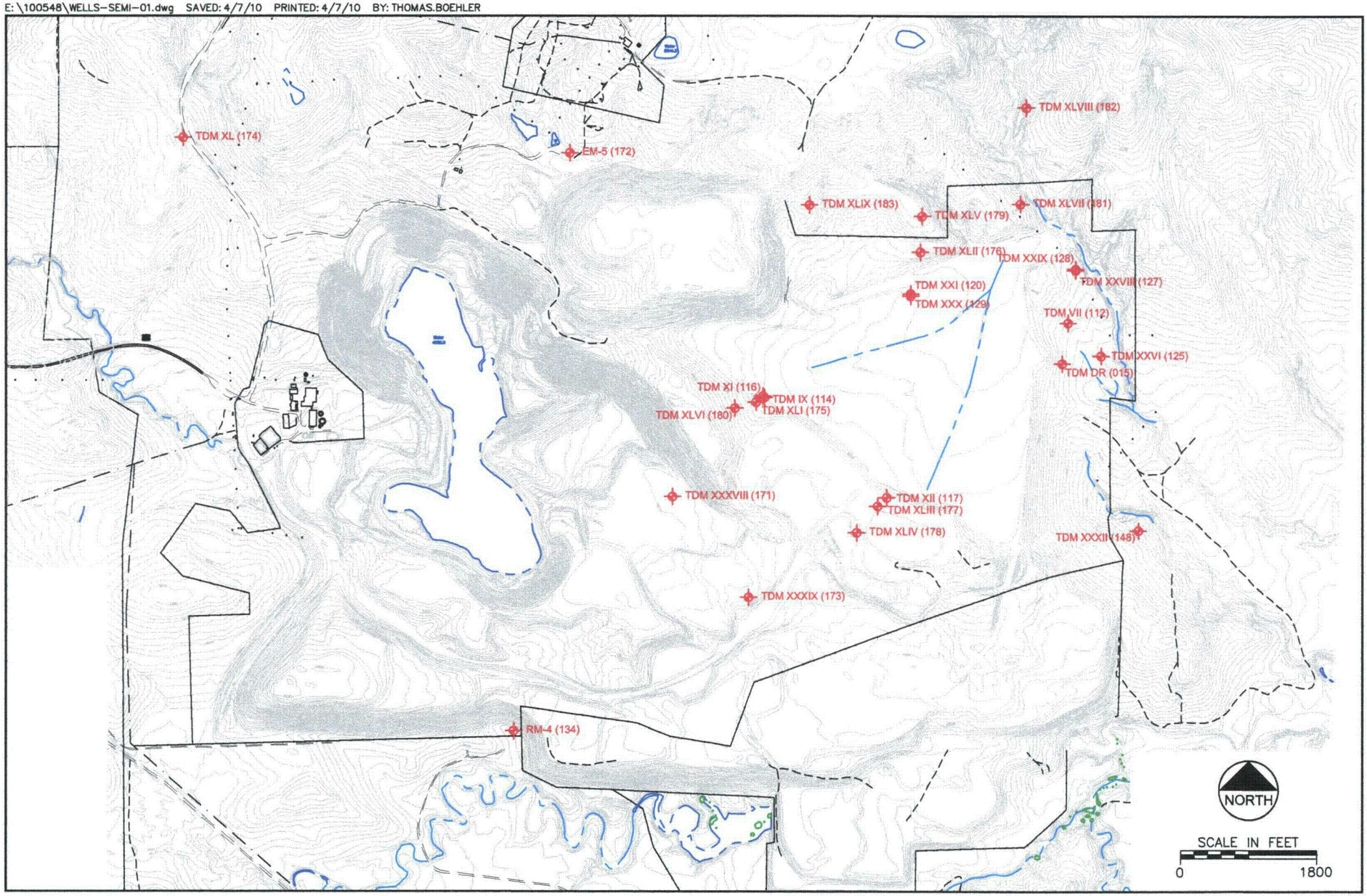

Project No. 180549

April 2010

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