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ENVIRONMENT DEPARTMENT

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March 18, 2008

Gayle Dye, Ph.D., POC
U.S. Department of Energy
P.O Box 5400
Albuquerque, New Mexico 87185-5400

RE: 1st Quarter 2008 NMED/DOE Oversight Bureau Data Submittal Results from Groundwater Monitoring at the Lovelace Respiratory Research Institute (LRRI)

Dear Dr. Dye

The DOE Oversight Bureau Sandia Oversight Section (DOE-OB/SOS) of the New Mexico Environment Department has compiled groundwater data from 1st Quarter FFY 2008. On November 14th, the Oversight Bureau split groundwater samples with Lovelace Respiratory Research Institute (LRRI) staff at LRRI monitoring wells: ITRI-MW4, -MW6, MW9, -MW11, -MW17, -MW18, -MW19 and NMED-1. The samples were submitted to Pinnacle Laboratories and General Engineering Laboratories for general chemistry and radiological analyses.

Data Assessment

The DOE-OB/SOS data results are compared to applicable Maximum Allowable Concentrations (MACs) from the New Mexico Water Quality Control Commission (WQCC) (20.6.2.3103A NMAC Human Health Standards) and Maximum Contaminant Levels (MCLs) from the EPA National Primary Drinking Water Regulations (40 CFR 141).

Table-1 compares the Bureau general chemistry results to applicable MACs and MCLs. Samples were analyzed for major anions and total dissolved solids (TDS). Major anions were analyzed using EPA method 300.0 and TDS concentration was analyzed using EPA method 160.1. Fluoride was detected above the NM MAC standard of 1.6 mg/L at six (6) monitoring wells. Elevated concentrations ranged from 1.64 mg/L at ITRI-MW9 to 2.13 mg/L at NMED-1. Sulfate was detected above the MAC of 600 mg/L at ITRI-MW4 at a concentration of 620 mg/L. The TDS concentration was also detected above the MAC of 1000 mg/L at ITRI-MW4, ITRI-MW17 and ITRI-MW19. Concentrations were 1650 mg/L, 1280 mg/L, and 1350 mg/L respectively.

Radiological data from the analytical laboratory has not been delivered. The analyses report will be submitted separately.

Conclusion

Trending analysis performed by DOE-OB/SOS from previous sampling events indicates fluoride concentrations at ITRI-MW9, MW17, MW18 and NMED-1 have been stable to slightly decreasing over time. Fluoride concentrations at ITRI-MW4 and MW11 have been stable to slightly increasing over time. In addition, sulfate and TDS concentrations at ITRI-MW4 have been decreasing over time.

DOE-OB/SOS recommends that LRRI continue to sample these monitoring wells for major anions and TDS.

The monitoring results will be provided to DOE for review and comment prior to their release as final to other State of New Mexico and federal agencies, the Pueblos, our website and interested members of the public. If you have any questions, or if you would like copies of the complete data set, please contact Chris Armijo at (505)845-5824 or contact me at (505)845-5933.

Sincerely,

Barry S. Birch
Program Manager
Sandia Oversight Section

BSB:ca

Enclosure: (1) Table-1 Analytical Results for Major Anions and Total Dissolved Solids

cc: Karen Agogino, DOE-AL, MS 0184
Scott Weiner, LRRI/ES&H,
Thomas Skibitski, Bureau Chief, DOE Oversight Bureau

NMED/DOE-OB Sandia Oversight Section
1st Quarter FFY08 Lovelace Respiratory Research Institute (LRRI)
Groundwater Monitoring
Major Anions/Total Dissolved Solids Results

		Bromide					Chloride				
Monitoring Well	Sample Date	Result (mg/L)	MDL (mg/L)	Lab Qualifier	EPA MCL (mg/L)	NM MAC (mg/L)	Result (mg/L)	MDL (mg/L)	Lab Qualifier	EPA MCL (mg/L)	NM MAC (mg/L)
ITRI-MW18	11/14/2007	0.233	0.066		NE	NE	19.1	0.33		NE	250
ITRI-MW19	11/14/2007	1.53	0.066		NE	NE	141	1.32		NE	250
ITRI-MW6	11/14/2007	0.255	0.066		NE	NE	19.7	0.066		NE	250
ITRI-MW9	11/14/2007	0.337	0.066		NE	NE	24.9	0.33		NE	250
ITRI-MW11	11/15/2007	1.16	0.066		NE	NE	117	1.32		NE	250
ITRI-MW17	11/15/2007	1.05	0.066		NE	NE	112	3.3		NE	250
ITRI-MW4	11/15/2007	1.25	0.066		NE	NE	145	3.3		NE	250
ITRI-MW4(DUP)	11/15/2007	1.26	0.066		NE	NE	147	3.3		NE	250
NMED-1	11/15/2007	0.801	0.066		NE	NE	60.5	0.66		NE	250

		Fluoride					Ortho-phosphate				
Monitoring Well	Sample Date	Result (mg/L)	MDL (mg/L)	Lab Qualifier	EPA MCL (mg/L)	NM MAC (mg/L)	Result (mg/L)	MDL (mg/L)	Lab Qualifier	EPA MCL (mg/L)	NM MAC (mg/L)
ITRI-MW18	11/14/2007	**1.75**	**0.033**		NE	**1.6**	0.066	0.066	U	NE	NE
ITRI-MW19	11/14/2007	1.41	0.033		NE	1.6	0.066	0.066	U	NE	NE
ITRI-MW6	11/14/2007	1.54	0.033		NE	1.6	0.066	0.066	U	NE	NE
ITRI-MW9	11/14/2007	**1.64**	**0.033**		NE	**1.6**	0.066	0.066	U	NE	NE
ITRI-MW11	11/15/2007	**1.66**	**0.033**		NE	**1.6**	0.066	0.066	U	NE	NE
ITRI-MW17	11/15/2007	**1.8**	**0.033**		NE	**1.6**	0.066	0.066	U	NE	NE
ITRI-MW4	11/15/2007	**1.65**	**0.033**		NE	**1.6**	0.066	0.066	U	NE	NE
ITRI-MW4(DUP)	11/15/2007	**1.63**	**0.033**		NE	**1.6**	0.066	0.066	U	NE	NE
NMED-1	11/15/2007	**2.13**	**0.033**		NE	**1.6**	0.066	0.066	U	NE	NE

NMED/DOE-OB Sandia Oversight Section
1st Quarter FFY08 Lovelace Respiratory Research Institute (LRRI)
Groundwater Monitoring
Major Anions/Total Dissolved Solids Results

		Sulfate					Total Dissolved Solids				
Monitoring Well	**Sample Date**	Result (mg/L)	MDL (mg/L)	Lab Qualifier	EPA MCL (mg/L)	NM MAC (mg/L)	Result (mg/L)	MDL (mg/L)	Lab Qualifier	EPA MCL (mg/L)	NM MAC (mg/L)
ITRI-MW18	11/14/2007	108	0.5		NE	600	347	2.38		NE	1000
ITRI-MW19	11/14/2007	502	2		NE	600	**1350**	2.38		NE	**1000**
ITRI-MW6	11/14/2007	99.1	0.5		NE	600	370	2.38		NE	1000
ITRI-MW9	11/14/2007	85.6	0.5		NE	600	350	2.38		NE	1000
ITRI-MW11	11/15/2007	179	2		NE	600	641	2.38		NE	1000
ITRI-MW17	11/15/2007	575	5		NE	600	**1280**	2.38		NE	**1000**
ITRI-MW4	11/15/2007	**620**	**5**		NE	**600**	**1650**	2.38		NE	**1000**
ITRI-MW4(DUP)	11/15/2007	**618**	**5**		NE	**600**	**1690**	2.38		NE	**1000**
NMED-1	11/15/2007	167	1		NE	600	519	2.38		NE	1000

Monitoring Well	Sample Date
ITRI-MW18	11/14/2007
ITRI-MW19	11/14/2007
ITRI-MW6	11/14/2007
ITRI-MW9	11/14/2007
ITRI-MW11	11/15/2007
ITRI-MW17	11/15/2007
ITRI-MW4	11/15/2007
ITRI-MW4(DUP)	11/15/2007
NMED-1	11/15/2007

Notes
NE – Not Established
U – Analyte was analyzed for but not detected above the Method Detection Limit (MDL)