

DOE Oversight Bureau, New Mexico Environment Department

**Groundwater Monitoring at
Sandia National Laboratories/New Mexico
Burn Site**

**Conducted by the
New Mexico Environment Department DOE Oversight Bureau
for FFY 2015 Q-1**

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The purpose of this communication is to transmit groundwater data collected by New Mexico Environment Department DOE Oversight Bureau from Burn Site Groundwater monitoring wells during the first quarter of FFY 2015.

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Introductory remarks

The New Mexico Environment Department (NMED) DOE Oversight Bureau (DOE OB or the Bureau) has compiled and assessed groundwater data collected during December 2014. The Bureau collected groundwater samples from the newly installed Burn Site Groundwater monitoring wells CYN-MW14A and CYN-MW15. Split samples were collected using standard Sandia National Laboratories/New Mexico sampling procedures and equipment. The samples were submitted to an independent analytical laboratory where they were analyzed for nitrate-nitrite, perchlorate, and gasoline and diesel range organics. Nitrate-nitrite levels exceeded the U.S. Environmental Protection Agency (EPA) maximum contaminant levels (MCL) of 10 mg/L at monitoring wells CYN-MW14A and CYN-MW15.

Data Assessment

All groundwater samples were collected and analyzed in accordance with EPA protocols. Data results are compared to applicable MCLs established by the U.S. EPA National Primary Drinking Water Regulations (40 CFR 141), National Primary Drinking Water Standards, EPA, July 2002. Perchlorate results are compared to the *Compliance Order on Consent (COOC) Pursuant to the New Mexico Hazardous Waste Act 74-4-10: Sandia National Laboratories Consent Order*, New Mexico Environment Department, April 19, 2004.

Results

Analytical results for nitrate-nitrite and perchlorate are presented in Table-1. Monitoring well CYN-MW14A and CYN-MW15 detected nitrate concentrations of 14 mg/L and 17 mg/L, respectively, exceeding the EPA MCL of 10 mg/L. Perchlorate samples were analyzed using EPA analytical method SW-846:6850 (LC/MS/MS). Perchlorate levels were detected above the laboratory quantitation limits at concentrations of 1.9 µg/L and 2.5 µg/L at monitoring wells CYN-MW14A and CYN-MW15, respectively. The perchlorate concentrations were detected below the 4 µg/L screening level required by the Consent Order.

Analytical results for total petroleum hydrocarbons (TPH) diesel and gasoline range organics are listed in Table-2. No diesel range organics (DRO) or gasoline range organics (GRO) were detected above the method detection limit (MDL). No samples were collected for GROs at monitoring well CYN-MW14. No MCLs have been established for TPH-DRO or TPH-GRO.

Conclusion

Samples were collected from Burn Site monitoring wells CYN-MW14A and CYN-MW15. Samples were analyzed for nitrates, perchlorate and TPH-DRO and TPH-GRO. Nitrate concentration at CYN-MW14A and CYN-MW15 exceeded the EPA MCL at values of 14 mg/L and 17 mg/L, respectively. Perchlorate levels were observed below the screening level required by the Consent Order. No DRO or GRO samples were detected above the MDL.

Table-1 NMED DOE OB FFY 2015 Q-1 Burn Site Groundwater Quality Results: Nitrate -Nitrite and Perchlorate

Monitoring Well/ Sample Date	Analyte	Result	EPA MCL	Quantitation Limit	MDL	Units	Laboratory Qualifier	Analytical Method
CYN-MW14A 17-Dec-14	Nitrate-Nitrite as Nitrogen	14	10	0.2	0.06	MG/L		EPA:353.2
	Perchlorate	1.9	NE	0.2	0.026	ug/L		SW-846:6850
CYN-MW15 17-Dec-14	Nitrate-Nitrite as Nitrogen	17	10	0.2	0.06	MG/L		EPA:353.2
	Perchlorate	2.5	NE	0.2	0.026	ug/L		SW-846:6850

NE = Not Established

Table-2 NMED DOE OB FFY 2015 Q-1 Burn Site Groundwater Quality Results: Diesel and Gasoline Range Organics

Monitoring Well/ Sample Date	Analyte	Result (mg/L)	Quantitation Limit (mg/L)	MDL (mg/L)	Laboratory Qualifier	Analytical Method
CYN-MW14A 17-Dec-14	Diesel Range Organics	0.14	0.47	0.14	U	SW-846:8015M
CYN-MW15 17-Dec-14	Diesel Range Organics	0.15	0.49	0.15	U	SW-846:8015M
	Total Petroleum Hydrocarbons Gasoline Range Org.	0.01	0.1	0.01	U	SW-846:8015

U = the compound was analyzed for but not detected