

60



ENTERED



SUSANA MARTINEZ
Governor

JOHN A. SANCHEZ
Lieutenant Governor

**NEW MEXICO
ENVIRONMENT DEPARTMENT**

Ground Water Quality Bureau
1190 South St. Francis Drive (87505)
P.O. Box 5469, Santa Fe, New Mexico 87502-5469
Phone (505) 827-2900 Fax (505) 827-2965
www.env.nm.gov



BUTCH TONGATE
Cabinet Secretary

J. C. BORREGO
Deputy Secretary

Sent Via Electronic Mail

June 30, 2017

John C. Bretzke, Division Leader
Environmental Protection & Compliance Division
Los Alamos National Security, LLC
PO Box 1663, K491
Los Alamos, NM 87545
jbretzke@lanl.gov

Arturo Q. Duran, Permitting Manager
Environmental Management
Los Alamos Field Office
3747 West Jemez Road, A316
Los Alamos, NM 87544
aduran@doeal.gov

RE: Response to Notice of Intent to Discharge; Discharge Permit Not Required for Los Alamos National Laboratory to Land Apply Drilling Water from Regional Aquifer Wells and Piezometers; AI:856, PRD20170005

Dear Mr. Bretzke and Mr. Duran:

On May 31, 2017, the New Mexico Environment Department (NMED) Ground Water Quality Bureau (GWQB) received a Notice of Intent to Discharge (NOI) from the U.S. Department of Energy and Los Alamos National Security (DOE/LANS) to land apply drilling water from the construction of regional aquifer wells and piezometers at Los Alamos National Laboratory (LANL). The location of the proposed discharge is the mesa-top dirt road in Technical Area (TA)-60 in Township 19N, Range 6E, Section 22, Los Alamos County. Groundwater beneath the site is approximately 1150 feet below ground surface.

The NOI satisfies the requirements of Subsection B of 20.6.2.1201 NMAC, of the Ground and Surface Water Protection regulations (20.6.2 NMAC).

The proposed discharge is briefly described as follows.

A one-time discharge of approximately 450,000 gallons of water from well drilling activities, composed of potable water, groundwater from the regional aquifer, foaming agents used to enhance the removal of drill cutting, and a borehole stabilizer will occur on the mesa-top dirt road in TA-60. The drilling water is associated with a network of 14



groundwater wells in Mortandad Canyon, including extraction wells (CrEX-1, CrEX-2, CrEX-3), injection wells (CrIN-1, CrIN-2, CrIN-3, CrIN-4, CrIN-5, CrIN-6), and piezometers (CrPZ-1, CrPZ-2, CrPZ-3, CrPZ-4, CrPZ-5). The drilling water has been accumulated in synthetically-lined drilling pits for varying lengths of time awaiting unsuccessful evaporation.

Incorporated into the drilling water are the foaming agents Baroid QUIK-FOAM® High Performance Foaming Agent and Baroid AQF-2™ Foaming Agent, and the borehole stabilizer Baroid EZ-MUD® Liquid Polymer Emulsion. These agents are used in air drilling to enhance the removal of drill cuttings from the borehole and to stabilize the borehole.

Chemical analysis of the accumulated drilling water shows that three groundwater contaminants exceed their respective 20.6.2.3103 NMAC Ground and Surface Water Protection regulations standards, including; total dissolved solids (TDS), iron, and manganese. Chromium and nitrate concentrations in the drilling water measure below their respective standards.

According to DOE/LANS, iron and manganese are naturally occurring constituents of the fine-grained materials of the geologic formation that remain in suspension in the drilling water. Organic material in the drilling foam may be stimulating microbial activity causing oxygen reducing conditions in the water. Reducing conditions are known to liberate naturally occurring constituents including iron and manganese, and are known to lower concentrations of other constituents including chromium and nitrate.

The drilling water will be land-applied to a dirt road on the TA-60 mesa-top as a dust suppressant using water trucks with sprayers. Application will be restricted to the road bed and will not include the road shoulders. DOE/LANS will ensure land application is managed such that no runoff or ponding will occur; there will be no land application during precipitation events; watercourses, areas of concern (AOCs), solid waste management units (SWMUs), and cultural sites will be avoided; and there will be no application to land with slopes greater than 5%.

Based on the information provided in your NOI, NMED has determined that a Discharge Permit is not required as long as the discharge occurs as is described in the NOI and the following requirement is met.

DOE/LANS shall evaluate the discharge's impact to soils by collecting and analyzing three representative samples of the soil both before and after the land application of the drilling water. Samples shall be analyzed by a National Environmental Laboratory Accreditation Program (NELAP)-certified analytical laboratory for those constituents in Table 1 of the NOI and the semi-volatile organic compounds listed in U.S. Environmental Protection Agency Method 8270. DOE/LANS shall provide a letter report to NMED describing this evaluation within ninety days of the final land application date.

A Discharge Permit is not required at this time because the information provided indicates it is unlikely that the discharge will adversely affect ground water quality.

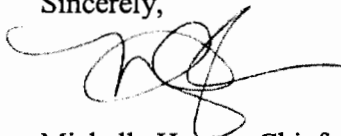
State surface water quality standards in 20.6.4 NMAC, including general criteria for toxic pollutants, must be met at all times and violations of these standards are enforced by the New Mexico Environment Department under authority of the New Mexico Water Quality Act. Upon NMED's recommendation, DOE/LANS selected an on-site land application site, *i.e.*, a dirt road on Sigma Mesa, as protective of surface water as possible. The potential of stormwater runoff carrying discharge constituents to a surface water course was not described in the NOI.

Although a Discharge Permit is not being required for this one-time discharge at this time, you are not relieved of liability should your operation result in actual pollution of surface or ground waters. Further, this decision by NMED does not relieve you of your responsibility to comply with any other applicable federal, state, and/or local laws and regulations, zoning requirements, plumbing codes, and nuisance ordinances.

If at some time in the future you intend to change the amount, character or location of your discharge, or if observation or monitoring shows that the discharge is not as described in your Notice of Intent, you must file a revised Notice of Intent with the Ground Water Quality Bureau.

If you have any questions, please contact Steve Pullen at (505) 827-2962.

Sincerely,



Michelle Hunter, Chief
Ground Water Quality Bureau

MH:SP

cc: Kathryn Hayden, NMED/GWQB
Shelly Lemon, NMED/SWQB
John E. Kieling, NMEDHWB
Susan Lucas Kamat, NMED/DOEOB
Stephen M. Yanicak, NMED/DOEOB
Bob Beers, DOE/LANS (bbeers@LANL.gov)
Stephani F. Swickley, DOE/LANS (sfuller@LANL.gov)
LANL File
Read File