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**NEW MEXICO
ENVIRONMENT DEPARTMENT**



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February 20, 2017

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

Cheryl L. Rodriguez
Program Manager, FPD-II
Environmental Management
Los Alamos Field Office
3747 West Jemez Road
Los Alamos, NM 87544

RE: Response to Notice of Intent to Discharge; DP-1835; Los Alamos National Laboratory

Dear Mr. Bretzke and Ms. Rodriguez,

On January 19, 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) requesting to discharge multiple nonreactive tracers to the regional aquifer surrounding Mortandad Canyon using six Underground Injection Control (UIC) wells that are permitted by NMED groundwater discharge permit DP-1835. The NOI satisfies the requirements of 20.6.2.1201.A NMAC of the Ground and Surface Water Protection Regulations (20.6.2 NMAC).

The proposed discharge is located approximately three miles southeast of Los Alamos in Sections 24 and 25, Township 19N, Range 06E, Los Alamos County, NM. Groundwater most likely to be affected lies in a regional aquifer from 900-1100 feet below ground surface and has a total dissolved solids concentration of approximately 150 milligrams per liter.

The NOI describes the tracer study as a means of evaluating the fate and transport of treated water that is injected to the regional aquifer via six UIC wells (CrIN 1-6) near the periphery of the hexavalent chromium (CrVI) plume beneath Mortandad Canyon. The information gained from the study is designed to support the assessment of the impacts of treated-water injection on movement of the Cr(VI) plume and of potential remedial alternatives for the Cr(VI) contaminated groundwater plume.

The tracers to be injected include six different naphthalene sulfonates, to be injected into CrIN 1-6 as follows:

CrIN-1: Disodium 2,7-Naphthalenedisulfonate (Na-2,7 NDS)



- CrIN-2: Disodium 2,6-Naphthalenedisulfonate (Na-2,6 NDS)
- CrIN-3: Trisodium 1,3,6-Naphthalenetrisulfonate (Na-1,3,6 NTS)
- CrIN-4: Disodium 1,5-Naphthalenedisulfonate (Na-1,5 NDS)
- CrIN-5: Disodium 1,6-Naphthalenedisulfonate (Na-1,6 NDS)
- CrIN-6: Sodium 1-Naphthalenesulfonate

Two methods of injection using a solution containing 50 kilograms (kg) of tracer are proposed for each well. Half of the tracer (25 kg) may be mixed with 3,000 gallons of potable water and delivered into a scheduled injection stream of treated groundwater as permitted in DP-1835 over a five to seven-hour period. This procedure would then be repeated on a consecutive second day. Alternatively, 5 kg of tracer may be added to each of ten 3,000-gallon tanks for a total of 30,000 gallons of tracer solution that may be injected independently of other injection flow over a period of up to five days.

The permittees request that the types and masses of tracers that may be utilized per each injection well remain flexible enough to allow for one or more of the naphthalene sulfonate tracers to be substituted with a different naphthalene sulfonate. This need for flexibility is due to the availability of the tracers and any tracer listed that is designated for a given CrIN well may be interchanged with a tracer that is designated for another CrIN well, pending final NMED approval. The permittees are not allowed to introduce any new tracers and will submit a final work plan prior to each injection for each CrIN well.

The information provided indicates it is unlikely that the discharge will adversely affect groundwater quality, and NMED has determined that an amendment or modification to DP-1835 is not required so long as the discharge is conducted as described. You are not relieved of liability should this operation result in actual pollution of ground or surface 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 NOI, you must file a revised NOI with the Ground Water Quality Bureau. If you have any questions, please contact Greg Huey of the GWQB Pollution Prevention Section at (505) 827-6891.

Sincerely,



Michelle Hunter, Chief
Ground Water Quality Bureau

MH:gmh

cc: John Kieling, NMED/HWB
Shelly Lemon, NMED/SWQB

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February 17, 2017
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