

ENTERED



SUSANA MARTINEZ  
Governor

JOHN A. SANCHEZ  
Lieutenant Governor

NEW MEXICO  
ENVIRONMENT DEPARTMENT

*Harold Runnels Building*  
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 - Designate

J.C. BORREGO  
Deputy Secretary

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

December 16, 2016

Dawn A. Nickell, Colonel  
Vice Commander  
Department of the Air Force  
377 ABW/CV  
Kirtland Air Force Base, NM 87117-5000

**RE: Response to Notice of Intent to Discharge, Ethylene Dibromide In-Situ  
Biodegradation Pilot Test Work Plan, Discharge Permit Not Required to Inject  
Specific Tracers and Amendments**

Dear Colonel Nickell,

On November 9, 2016, the New Mexico Environment Department (NMED) received a Notice of Intent (NOI) from Kirtland Air Force Base (KAFB) to deploy multiple tracer and amendment chemicals and a bioaugmentation culture via a Class V, underground injection control (UIC) well to the regional aquifer. The water table within the regional aquifer at the discharge location is approximately 480 feet below ground level (bgl). The deployment or discharge is associated with the KAFB Bulk Fuels Facility (BFF) fuel spill and an *Ethylene Dibromide In-Situ Biodegradation Pilot Test Work Plan* dated October 2016 and received by the Ground Water Quality Bureau (GWQB) on November 9, 2016. The NOI satisfies the requirements of 20.6.2.1201.A NMAC of the New Mexico Water Quality Control Commission (WQCC) Regulations (20.6.2 NMAC).

The NOI describes the pilot test system as a temporary groundwater recirculation system expected to operate for approximately 18 months that will test the efficacy of enhanced ethylene dibromide (EDB) biodegradation via in-situ biostimulation and bioaugmentation. The pilot test system consists of one Class V UIC well, two extractions wells, multiple monitoring wells, a tracer and amendment delivery system, and ancillary equipment to power the recirculation system, all designed to extract, amend, reinject, and monitor groundwater within an anticipated treatment zone. This UIC well, KAFB-106IN1, will be screened at approximately 480 to 500 feet bgl. During the multiple phase pilot test, tracers (fluorescein or equivalent dye and deuterium enriched water introduced as Phase 1), amendments (sodium lactate with nutrients,

KAFB4472



diammonium phosphate, and iodide introduced as Phase 2), and dehalogenating bacterial cultures (Phase 3) will be added to extracted groundwater and then will be reinjected into the aquifer at a rate of up to 50 gallons per minute (gpm). If necessary, a dilute sodium carbonate solution will be injected to neutralize pH.

The proposed discharge location, *i.e.*, injection well, is on KAFB in the vicinity of the BFF on Randolph Avenue between Fuels Drive and Air Guard Drive, in Section 36, Township 10N, Range 3E, Bernalillo County. The concentration of total dissolved solids (TDS) in the aquifer in the vicinity of the discharge location is approximately 265 milligrams per liter (mg/L). The aquifer's potentiometric surface in the vicinity of the discharge location is generally flat and the recirculation cell to be created by the pilot test is not expected to significantly affect the natural flow of the aquifer.

Regional groundwater proximal to the location of the proposed discharge location, which will be extracted and reinjected, has the following contaminants at concentrations exceeding the groundwater protection standards specified at 20.6.2.1303 NMAC; EDB, manganese, iron, benzene, toluene, ethylbenzene, and total xylenes. These contaminants at their measured concentrations may be reinjected into the regional aquifer pursuant to Subsection D(1) of 20.6.2.3109 NMAC.

The injection well is considered an UIC well, and more specifically an "in situ ground water remediation well" as defined in Subsection B(5)(d)(ii) of 20.6.2.5002 NMAC. As a UIC well, the well is subject to the applicable requirements of Section 20.6.2.5000 NMAC, including the pre-closure notification and closure requirements at Section 20.6.2.5005. Because the well is considered a remediation well and because of the urgency to identify a remediation strategy for the fuels plume associated with the BFF, NMED waives the requirement at Subsection C of 20.6.2.5003 to postpone construction of the injection well until 120 days after the submittal of the NOI.

**Based on the information provided in the NOI, NMED has determined that a Discharge Permit (DP) is not required.** A DP is not required at this time because the information provided indicates it is unlikely that the discharge will adversely affect groundwater quality. This determination that a DP is not required is contingent upon the discharge being performed as described in the NOI and in the Ethylene Dibromide In-Situ Biodegradation Pilot Test Work Plan. All work activities associated with this pilot test will be conducted under the oversight of the Hazardous Waste Bureau as interim measures associated with the Bulk Fuel Facility cleanup effort.

Although a discharge Permit is not being required for this discharge at this time, 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, regulations, zoning requirements, plumbing codes, and nuisance ordinances.

**Dawn A. Nickell**  
**December 16, 2016**  
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**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 GWQB. Should the pilot test prove an effective remedial approach, a Discharge Permit may be required for long term injection activities.**

**If you have any questions, please contact Steve Pullen of the Ground Water Pollution Prevention Section at (505) 827-2962.**

**Sincerely,**



**Michelle Hunter, Chief**  
**Ground Water Quality Bureau**

**MH:SP**

**cc: (e-copies)**

**John Kieling, NMED-HWB**  
**William Chavez, NMED-DI**  
**Dennis McQuillan, NMED**  
**Diane Agnew, NMED**  
**Steve Huddleson, NMED-GWQB**  
**Steve Pullen, NMED-GWQB**

**files: Reading**  
**DP-1839**