

Kirtland AFB Bulk Fuels Facility Spill

Regulatory Authority and History

New Mexico Environment Department

<http://www.nmenv.state.nm.us>

New Mexico Legislature

Science, Technology and Telecommunications Committee

October 19, 2012

Regulatory Authority

- Federal Resource Conservation and Recovery Act (RCRA), 42 U.S.C. § 6901 et seq. (1976)
- NM Hazardous Waste Act (HWA), NMSA 1978, §§ 74-4-1 to 74-4-14
- HWA authorized promulgation of Hazardous Waste Management Regulations (HWMR), 20.4.1 NMAC
- New Mexico authorized as the administrative authority for corrective action under RCRA by EPA on January 2, 1996

Regulatory Authority: Imposed through Permit

- Kirtland AFB Hazardous Waste Facility Permit
 - Issued June 15, 2010 and became effective July 16, 2010
- Permit Part 6 contains extensive provisions for corrective action
 - Primary driver for corrective action at the Facility
 - Must protect human health and the environment for all releases
 - Schedules of compliance
 - Must implement corrective actions beyond Facility boundary, where necessary
- Collectively, the "Bulk Fuels Facility Spill" made up of:
 - Solid Waste Management Units (SWMUs) ST-106 and SS-111
 - SWMU ST-106 - Bulk Fuels Facility Former Fuel Offloading Rack
 - SWMU SS-111 - Light Non-Aqueous Phase Liquid ("LNAPL") plume
- Listed in Permit as being subject to corrective action

Water Quality Regulations and Requirements

- State Drinking Water Regulations, 20.7.10 NMAC
 - Federal Safe Drinking Water Regulations, 40 CFR 141 through 143
- Ground and Surface Water Protection Regulations, 20.4.2 NMAC
 - Water Quality Act, NMSA 1978, Sections 74-6-1 through 74-6-17
- Hazardous Waste Permit Condition
 - Permit Section 6.2.3.1, *Cleanup Levels for Contaminants in Groundwater*

Water Quality Standards

- Ethylene Dibromide (EDB)
 - EPA Maximum Contaminant Level (MCL) 0.05 $\mu\text{g/L}$ (ppb)
 - New Mexico WQCC Standard (WQCC) 0.10 $\mu\text{g/l}$
- Benzene
 - EPA MCL 5 $\mu\text{g/L}$
 - NM WQCC 10 $\mu\text{g/L}$
- Toluene
 - EPA MCL 1 mg/L (ppm)
 - NM WQCC 0.750 mg/L
- Xylenes (total)
 - EPA MCL 10 mg/L
 - NM WQCC 0.620 mg/L

KAFB Bulk Fuels Facility - What is it?

Fuel Storage and Distribution System

- Constructed 1952
- Tank farm (2.1 and 4.2 MGal tanks)
- Ancillary piping (underground and above ground)
- Fuel Offloading Rack (now removed)
 - surface portion completed prior to excavation in 2010
 - underground portion complete in 2011
 - New fuel storage and distribution system has been constructed
 - state of art leak detection
- Fuel identified in subsurface 1999
- Fuels: aviation gas (in the past) and jet fuel (JP-4 prior to 1993, JP-8 since 1993)
 - Avgas - Aviation Gas with tetraethyl lead (TEL)
 - Jet Propellant-4 (JP-4) 50-50 kerosene-gasoline
 - Jet Propellant-8 (JP-8) kerosene-based

Primary Features of Bulk Fuels Facility

Former Fuel
Offloading Rack

Underground
Pipeline

Above Ground
Pipeline

Fuel
Tanks



0 200 400 Feet

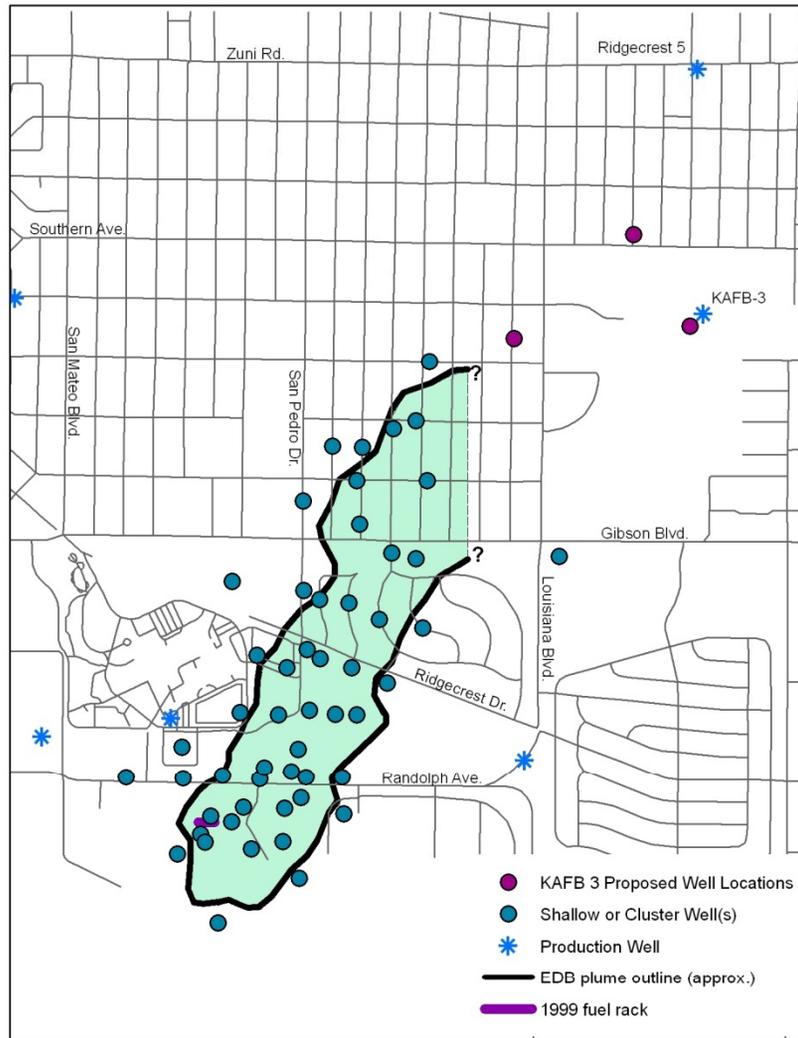
KAFB Bulk Fuels Facility Spill

- Current primary focus
 - Install/operate new SVE Unit (at 2 wells)
 - Characterize northern extent and northern core of EDB plume in groundwater
- Secondary focus
 - LNAPL Containment System
 - Implement down-hole technologies at hot spots
 - Air stripping and air sparging
 - LNAPL Containment Well
 - Implementation on hold to see how contamination responds to SVE

Characterization of EDB Plume

- Current data confirms northern part EDB plume undefined
- EDB exceeds MCL (0.05 $\mu\text{g}/\text{L}$) in shallow, intermediate, and deep wells. Full vertical extent not known
- KAFB recently installed 9 wells at 3 locations north of where EDB has been found
- Additional wells implemented through iterative process
- NMED's current estimate groundwater velocity 120-360 ft/year

Existing and Proposed Ground Water wells



0 500 1,000 2,000 Feet

Current Status and Looking Ahead

- Investigation and Interim Measure
 - Final remedy cannot be determined until investigation is complete
 - Interim measures have been required while investigation continues
 - Enough is already known to begin cleanup of vadose zone and groundwater
- Interim Measures
 - Implement SVE
 - Implement down-hole technologies to address hot spots
- Issue Remedial Action Plan (RAP) ASAP to treat groundwater generated by LNAPL Containment System (should system be deployed)
- Corrective Measures Evaluation (CME) Report required 180 days after NMED approves site characterization (Investigation Report)
- Revise RAP to incorporate final remedy based on CME Report and public input
 - Public notice to be issued to seek public input
 - A public hearing may be held
- Approve Corrective Measures Implementation (CMI) Plan for implementing final remedy
- Implement and complete final remedy

Contact Information

Jim Davis, Director
Resource Protection Division
jim.davis@state.nm.us
(505) 827-1758

John E. Kieling, Chief
Hazardous Waste Bureau
john.kieling@state.nm.us
(505) 476-6035

Further information:

Environment Department
<http://www.nmenv.state.nm.us/HWB/kafbperm.htm>

Kirtland Air Force Base
<http://www.kirtland.af.mil/environment.asp>