ENTERED

NEW MEXICO
ENVIRONMENT DEPARTMENT

Ground Water Quality Bureau

Harold Runnels Building
1190 St. Francis Drive
PO Box 5469, Santa Fe, NM 87502-5469
Phone (505) 827-2900 Fax (505) 827-2965
www.nmenv.state.nm.us

BILL RICHARDSON
Governor
DIANE DENISH
Lieutenant Governor

RON CURRY
Secretary
SARAH COTTRELL
Deputy Secretary

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

November 23, 2010

Mr. Wayne Bitner, Environmental Restoration Chief
Kirtland Air Force Base
337 MSG/CEANR
2050 Wyoming Blvd. SE
Kirtland AFB, NM 87117-5270

RE: Response to Notice of Intent to Discharge and Discharge Permit Required for Kirtland Air Force Base Bulk Fuels Facility-Liquid Treatment Facility, DP-1770

Dear Mr. Bitner:

The Ground Water Quality Bureau of the New Mexico Environment Department (NMED) received a Notice of Intent from you on November 15, 2010. The notice describes your intent to extract petroleum-contaminated ground water, treat the water to remove contaminants, and discharge the treated ground water to the subsurface using an injection well. The notice satisfies the requirements of Subsection B of 20.6.2.1201 NMAC of the New Mexico Water Quality Control Commission (WQCC) Regulations, 20.6.2 NMAC. The proposed discharge is located on Kirtland Air Force Base at Latitude 35.0511°N, Longitude 106.5712°W, in Section 36, Township 10 North, Range 3 East, Bernalillo County.

NMED has reviewed the information provided in accordance with Subsection D of 20.6.2.1201 NMAC. **You are hereby notified that a Discharge Permit is required for the proposed discharge.**

To apply for a Discharge Permit, you must complete and submit three copies of the enclosed Discharge Permit application, along with the $100 filing fee. Please be advised that any

discharge from this facility as described in your Notice of Intent without prior written approval from NMED would be a violation of the WQCC Regulations.

Any appeal of this determination that a Discharge Permit is required must be made to the New Mexico WQCC within 30 days of receipt of this letter, in accordance with Subsection B of 20.6.2.3112 NMAC. A copy of the WQCC Regulations, 20.6.2 NMAC, is available at http://www.nmcpr.state.nm.us/nmac/_title20/T20C006.htm.

If you have any questions, please contact George Schuman, Program Manager of the Ground Water Pollution Prevention Section, at (505) 827-2945.

Sincerely,

George Schuman for W. Olson

William C. Olson, Chief
Ground Water Quality Bureau

WO:GS

Enc: Applying for a Discharge Permit: General Information
Discharge Permit Application, General Form

cc: Jennifer Ickes, District Manager, NMED District I
NMED Albuquerque Field Office
DP Required File
NOI File

New Mexico Environment Department
Ground Water Quality Bureau

Ground Water Quality Bureau – Pollution Prevention Section
Notice of Intent

1. **Name and mailing address of person proposing to discharge:**

Wayne Bitner
337 MSG/CEANR
2050 Wyoming Blvd. SE
Kirtland AFB, NM 87117-5270

Work Phone: 505-853-3484
Cell/Home Phone: 505-379-3616
Fax:
Email: Ludie.Bitner@kirtland.af.mil

2. **Name of facility:**

Kirtland Air Force Base Bulk Fuels Facility Liquid Treatment Facility

3. **Physical location of discharge (if applicable, give street address, township, range, section, distance from closest town or landmark, directions to facility, location map):**

The discharge location will be at X: 356712.66, Y: 3879839.8 (WGS 1984 UTM Zone 13N). The location is on Kirtland Air Force Base near the Bulk Fuels Facility. A location map is attached to this Notice of Intent (Figure 1).

4. **Type of operation generating the discharge (e.g., truck wash, food processing plant, restaurant, etc.):**

The operation generating the discharge will be an extraction and injection containment and liquid treatment system. The objective of the containment system is hydraulic control of the NAPL plume that is protective of downgradient water users, both for the current groundwater flow regime and for possible future hydrogeologic conditions resulting from changes in the water supply pumping. Additionally, the containment system will contain the dissolved phase groundwater plume in the immediate vicinity of the NAPL plume.

5. **Source(s) of the discharge. Describe how the wastewater, sludge, or other discharges processed and/or disposed at your facility are generated. Identify all sources. Attach additional pages if needed:**

See attachment.

6. **Expected contaminants in the discharge (e.g., nitrate-nitrogen, metals, organic compounds, salts, etc.) include estimated concentration if known, and copies of results of laboratory analyses, if available:**

See attachment.

7. **Describe all components of wastewater processing, treatment, storage, and disposal system (e.g., grease interceptor, lagoon, septic tank/leachfield, etc.) include sizes, site layout map, plans and specifications, etc. if available:**

See attachment.

8. **Estimated maximum daily discharge volume in gallons per day (or other units):**

Currently, the estimated maximum discharge will be 200 gallons per minute or 288,000 gallons per day.

9. **Estimated depth to ground water (ft):** Approximately 500 feet.

Signature: _____ **Date:** 15 NOV 2010

Printed name: L. W. BITNER **Title:** CHIEF, ENVIRONMENTAL RESTORATION

Please return this form to:
NMED Ground Water Quality Bureau
P.O. Box 5469
Santa Fe, New Mexico 87502-5469

Telephone: 505-827-2900
Fax: 505-827-2965

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NOV 15 2010

GROUND WATER

5. Source of Discharge

Water from the NAPL plume will be pumped from two locations west of USS Bullhead Memorial Park, one at X: 356238.09, Y: 3880156.8, the other at X: 356134.84, Y:3880188.5 (WGS 1984 UTM Zone 13N) (Figure 1). The extracted water will then be piped to a treatment facility located on Kirtland Air Force Base. The main treatment process will consist of an oil-water separator (OWS), an iron/manganese removal system, and a granular activated carbon (GAC) organic removal system. After treatment, the water will be piped to the injection well. To protect the discharge from any excursions in the primary treatment system, a final GAC guard bed will be installed just before the water is discharged. The pipelines from the extraction wells to the liquid treatment facility will be double-contained pipeline with leak detection. Process piping in the treatment facility will be single-piped with the curbed treatment pad acting as the containment. The treated water process line from the treatment plant to the injection well will be single-piped as this water will be drinking water quality. The NAPL remediation system is designed to operate on a continuous 24/7 basis with shut-downs only for routine maintenance or equipment failure.

6. Effluent Concentrations

Discharge limits are established by NMAC 20.6.2.3103. Based on NMAC 20.6.2.3103 and data collected during previous investigations, the primary treatment system design compounds and concentrations being released will be:

Contaminant	NMAC 20.6.2.3101 Human Health Standard
Benzene	0.01 mg/L
Toluene	0.75 mg/L
Ethylbenzene	0.75 mg/L
Total xylenes	0.62 mg/L
EDB	0.0001 mg/L
Iron	1 mg/L
Manganese	0.2 mg/L

7. Conceptual System Design and Components

As presented on process flow diagram (Figure 2), the following are the major components of the liquids treatment system:

1. Stainless steel submersible electric pumps will be installed in each well near the bottom of the screened section. Based on the preliminary containment calculations, the pumps will be 13 stage, 40 horsepower, 480 volt, three-phase with direct line start. Pump sizing will be finalized after the pre-design data are available.

2. Each extraction well will be equipped with instruments with a redundant liquid level transducer, flow rate and totalizing flow meter, and wellhead pressure transmitter. All well instruments will be connected to the system programmable logic controller (PLC) for equipment controls and data logging.

3. Liquids from the extraction wells will be routed through double-contained 3-inch high density polyethylene (HDPE) process piping to the treatment system.

4. At the treatment system, the produced liquids will be routed through an oil-water separator (OWS) to remove NAPL. The NAPL will be transferred to a storage tank and eventually will be sent for recycling off-site. The OWS will have a cone bottom for collection of the backwash material from the iron/manganese removal and GAC systems.

5. For iron and manganese removal it may be necessary to control pH and dissolved oxygen in the discharge water from the OWS. This will be accomplished using either the water compartment on the OWS or an inline metering system.

6. An iron/manganese removal filter system will follow the OWS. Currently a natural or synthetic green-sand or BIRM filter is being considered to remove iron and manganese. Backwash water from this filter will be routed back to the OWS for separation of solids. Aeration to remove iron and manganese will be evaluated in final design but vapor emissions control and air permitting requirements may limit the viability of aeration.

7. After the iron/manganese removal, it may be necessary to adjust pH or add sequestration agents to control carbonate precipitation in the carbon beds. This need will be determined in the final design.

8. The process water will be routed through a series of granular activated carbon treatment vessels. Currently it is anticipated that there will be two large treatment beds that can be automatically backwashed with piping for switching between which bed is primary and which bed is secondary bed. These two treatment beds will be followed by a third guard bed to provide protection in the event of unplanned break-through from the secondary carbon bed.

9. From the GAC treatment system, the water, treated to meet drinking water standards will be pumped through a single walled 4-inch pipeline to the injection well. A flow meter will be installed on the pipeline for monitoring of discharge volumes.

10. Throughout the process system, appropriate values, pressure transmitters, and flow indicators and meters will be used to monitor operations. Most of the instrumentation will be connected to the PLC for continuous monitoring and data collection.

11. The injection well will be equipped with a pressure transmitter, control valve and vacuum breaker near the wellhead. A redundant pressure transducer will be installed in the injection well for monitoring water levels. Injection well instrumentation.

For remote operating of the process system and evaluate alarms, a remote access supervisory control and data acquisition (SCADA) system will be installed at the site. Either land line or cellular access will be provided for this system.