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ENVIRONMENT DEPARTMENT **ENTERED**



Environmental Health Division

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TOM BLAINE, P.E.
Director
Environmental Health Division

April 4, 2014

Colonel Tom D. Miller
Base Commander
377 ABW/CC
2000 Wyoming Blvd. SE
Kirtland AFB, NM 87117-5606

John Pike
Director, Environmental Management Services
377 MSG
2050 Wyoming Blvd. SE, Suite 116
Kirtland AFB, NM 87117-5270

RE: WORK PLAN FOR BENCH-SCALE TESTING OF GROUNDWATER SAMPLES FOR EVALUATION OF BIOREMEDIATION INTERIM MEASURE LIGHT NONAQUEOUS PHASE LIQUIDS (LNAPL) PLUME BULK FUELS FACILITY SPILL SOLID WASTE MANAGEMENT UNITS ST-106 AND SS-111 KIRTLAND AIR FORCE BASE EPA ID# NM9570024423, HWB-KAFB-13-MISC

Dear Colonel Miller and Mr. Pike:

The New Mexico Environment Department (NMED) has conducted discussions with the U. S. Air Force (Permittee) concerning interim measures to address light nonaqueous-phase liquids (LNAPL) in groundwater that resulted from the release of aviation gasoline and jet fuel in the vicinity of the former Bulk Fuels Loading Facility. The interim measure proposed by the Permittee also is intended to address the generally co-located dissolved benzene, toluene, ethylbenzene and total xylenes (BTEX) plume. The Permittee has proposed to add nutrients to the groundwater to enhance bacterial action as the method for bioremediation of the LNAPL and BTEX and associated ethylene dibromide (EDB).

In order for NMED to determine whether the addition of nutrients to groundwater in the vicinity of the source area and the anticipated subsequent increased biodegradation of fuels-related contamination will be a viable interim measure, the Permittee must conduct bench-scale tests using groundwater samples obtained from the site. The bench-scale tests should be designed to determine the viability of nutrient addition to groundwater over the range of detected contaminant concentrations across the plume for the purpose of determining where enhancement

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of anaerobic biodegradation will likely be most effective. The Permittee also must evaluate the proposed enhancement of anaerobic hydrocarbon degradation as a containment measure to prevent the migration of ethylene dibromide at concentrations greater than the U.S. Environmental Protection Agency Maximum Contaminant Level (MCL) north of Bullhead Park. Bullhead Park is located adjacent to the north of the Kirtland Air Force Base boundary and is at the northern edge of the BTEX plume.

The Permittee must submit a work plan describing, in detail, the proposed locations for sample collection and the proposed chemical analytical testing methods, methods and procedures for evaluating biologic activity and schedule for implementation and completion of the bench-scale testing. The work plan must be submitted to NMED no later than **April 23, 2014**.

Based on the results of the bench-scale tests, NMED may require a work plan to conduct hydraulic testing at the locations identified as appropriate for nutrient addition and, if conditions are determined to be suitable, a subsequent work plan for the addition nutrients to groundwater at the selected locations. Permitting requirements exist that can take one or more years to obtain, depending on the locations and methods selected for the addition of nutrients to groundwater. To expedite the process, the Permittee must begin obtaining the anticipated permits (e.g., from the Groundwater Quality Bureau, Hazardous Waste Bureau, Office of State Engineer) to implement a nutrient injection program upon receipt of this letter. The Permittee must submit updates on its progress for obtaining the necessary permit by email to NMED on the last day of each month beginning on April 30, 2014. In addition, NMED may require testing of aerobic remediation technologies at other locations in the vicinity of the Bulk Fuels Facility spill to evaluate the effectiveness of potential alternate remediation methods.

Should you have any questions, please contact me at (505) 827-2855.

Sincerely,

Tom Blaine, P.E.
Director
Environmental Health Division

cc: J. Kieling, NMED HWB
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File: KAFB 2014 Bulk Fuels Facility Spill - SWMUs ST-106 and SS-111