

APPENDIX A
REGULATORY CORRESPONDENCE



**NEW MEXICO
ENVIRONMENT DEPARTMENT**



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RYAN FLYNN
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CERTIFIED MAIL – RETURN RECEIPT REQUESTED

April 4, 2016

Mr. L. Wayne Bitner
Chief, Environmental Restoration
2050 Wyoming Blvd SE
Kirtland AFB, New Mexico 87117-5600

RE: DP-1770 Modification Application and Termination

Dear Mr. Bitner:

On December 4, 2015, the New Mexico Environment Department (NMED) Ground Water Quality Bureau (GWQB) received Kirtland Air Force Base's (KAFB) application (Application) to modify Discharge Permit 1770 (DP-1770). The Application requested authorization to apply treated groundwater as an irrigation source to the KAFB Tijeras Arroyo Golf Course (Golf Course), to utilize the treated groundwater for dust suppression, and to infiltrate a portion of the water. The source of this discharge is groundwater contaminated with ethylene dibromide (EDB) extracted from wells KAFB-106228R, KAFB-106233 and KAFB-106234, which is then treated using granular activated carbon (GAC) for EDB removal to below the constituent's 0.05 µg/L Maximum Contaminant Level prior to discharge. KAFB has established a treatment goal for the GAC system of non-detectable EDB. The proposed discharge is on or near the northwest edge of the Golf Course, Kirtland Air Force Base, Albuquerque in Section 9, Township 9N, Range 4E, Bernalillo County, New Mexico.

In addition to the land application procedures addressed in the Application, KAFB has requested authorization to utilize underground injection wells as a means to dispose of the treated groundwater in a separate discharge permit application (DP-1839). The groundwater that is the subject of DP-1770 is undergoing remediation, *i.e.*, extracted and treated, pursuant to KAFB's Hazardous Waste Treatment Facility Operating Permit, EPA ID No. NM9570024423, and meets Federal Drinking Water Standards. The GWQB also notes that KAFB has been irrigating the Golf Course with water of similar chemistry and quality for over fifteen years, with no adverse effects to public health or the environment.

KAFB is abating water pollution under Resource Conservation and Recovery Act (RCRA) authority delegated to NMED, pursuant to a hazardous waste permit and the Hazardous Waste Management Regulations, 20.4.1 NMAC. Therefore, KAFB is exempt from abatement plan requirements for this activity pursuant to 20.6.2.4105.A(2) and (3) NMAC. As would be the case if the abatement was occurring strictly under an abatement plan approved pursuant to the Ground and Surface Water Protection Regulations, 20.6.2 NMAC, a discharge permit for land application of treated effluent is not required. Therefore, the GWQB hereby terminates DP-1770 as it is not required for the activity of irrigating the Golf Course with treated effluent regulated pursuant to Hazardous Waste Permit No. NM9570024423.

Should any of these circumstances change, please contact NMED immediately so that we may re-evaluate the regulatory status of this activity. DP-1839 is not impacted by this determination.

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

Sincerely,



Trais Kliphuis, Director
Water Protection Division

Cc: (via e-mail)

Kathryn Roberts, NMED Resource Protection Division
Dennis McQuillan, NMED Chief Scientist
Michelle Hunter, NMED Ground Water Quality Bureau
John Kieling, NMED Hazardous Waste Bureau
Steve Huddleson, NMED Ground Water Quality Bureau
Steve Pullen, NMED Ground Water Quality Bureau
Jennifer Hower, NMED Office of General Counsel
John Verheul, NMED Office of General Counsel



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RYAN FLYNN
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BUTCH TONGATE
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CERTIFIED MAIL – RETURN RECEIPT REQUESTED

June 30, 2016

Colonel Eric H. Froehlich
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 SOIL VAPOR MONITORING AND DRINKING WATER
MONITORING
SOLID WASTE MANAGEMENT UNITS ST-106 AND SS-111
KIRTLAND AIR FORCE BASE
EPA ID#NM9570024423, HWB-KAFB-13-MISC**

Dear Colonel Froehlich and Mr. Pike:

The New Mexico Environment Department (NMED) is in receipt of the Kirtland Air Force Base (KAFB) (the Permittee) *Work Plan for Soil Vapor Monitoring and Drinking Water Monitoring* (Work Plan), dated April 25, 2016. The Work Plan addresses activities to be performed at the Bulk Fuels Facility site, including:

- Performance of sampling of the soil vapor monitoring network on a quarterly basis;
- Performance of sampling of drinking water production wells on a monthly basis;
- Annual maintenance of the soil vapor monitoring network;
- Abandonment and installation of soil vapor monitoring locations; and
- Quarterly reporting of soil vapor and drinking water production well sample results and analysis.

Future revisions and updates of this Work Plan are anticipated to provide the required information on soil vapor monitoring well design and installation; abandonment of soil vapor monitoring locations; and any revisions to the equipment decontamination and IDW

management sections associated with soil monitoring location installation. The Work Plan tasks, procedures, and quality control are hereby approved with the following conditions:

1. The Horiba instrument(s) shall be calibrated at the start, middle, and end of the day as specified and approved in the Pilot SVE Shutdown Test Work Plan for Soil Vapor Sampling and Field Measurements, dated December 23, 2015.
2. Section 3.6 of the Work Plan and Section 3.3.1 in Appendix C of the Work Plan address equipment decontamination. Both sections reference Section 3.2.1.2 of the Work Plan which is specifically written for soil vapor sampling equipment; there is no description of decontamination procedures to be used for equipment utilized during sampling of drinking water supply wells. The Permittee shall revise Section 3.6 of the Work Plan and Section 3.3.1 of Appendix C to include decontamination procedures to be used for instrumentation and sampling equipment used in both soil vapor and drinking water supply well monitoring and sampling (e.g., YSI multi-probe system). These revised sections must be submitted to the NMED for review and approval a minimum of two weeks prior to the start of work.

3. Section 3.11, Investigation-Derived Waste, states that:

“In addition, any excess drinking water will be disposed of via KAFB’s waste water treatment system, or will be disposed of to the ground.”

The Permittee may discharge water to the KAFB waste water treatment system as long as the excess drinking water meets the KAFB waste water treatment system requirements for accepting the IDW water. Discharge of IDW water to the ground surface must follow the NMED Ground Water Quality Bureau *Kirtland AFB Development and Sampling Purge Water Decision Tree for Ground Water Restoration Activities* dated June 1, 2015 (attached).

The NMED understands that the Air Force intends for this Work Plan to be a single source for details related to work conducted under the soil vapor monitoring and drinking water supply well monitoring. As such, this Work Plan shall be updated, as necessary, to reflect changes resulting from modifications to scope and detail of identified tasks. Future revisions to the Work Plan are subject to NMED review and approval.

The Permittee shall submit revisions of sections 3.6 and 3.11 to address the conditions identified in this approval. Additionally, as stated above, the Permittee shall submit revisions to Section 3.6 and 3.3.1 of Appendix C for review and approval a minimum of two weeks prior to the start of work.

Col. Froehlich and Mr. Pike
June 30, 2016
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Should you have any questions regarding this letter please contact Ms. Diane Agnew at (505) 222-9555.

Sincerely,



Kathryn Roberts
Director
Resource Protection Division

KR/DM

Attachment:

Kirtland AFB Development and Sampling Purge Water Decision Tree for Ground Water Restoration Activities dated June 1, 2015

cc: Col. T. Haught, KAFB
K. Lynnes, KAFB
A. Bodour, KAFB-AFCEC
T. Simpler, USACE
M.L. Leonard, AEHD
F. Shean, ABCWUA
L. King, EPA-Region 6 (6PD-N)
K. Kieling, NMED-HWB
D. McQuillan, NMED
D. Agnew, NMED-HWB

File: KAFB 2016 Bulk Fuels Facility Spill



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Acting Deputy Secretary

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

August 24, 2016

Colonel Eric H. Froelich
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Kirtland AFB, NM 87117-5606

John Pike
Director, Environmental Management Services
377 MSG
2050 Wyoming Blvd SE, Suite 116
Kirtland AFB, NM 8711-5270

**RE: KIRTLAND AIR FORCE BASE, SUSPENSION OF SAMPLING AT GROUNDWATER
MONITORING WELLS KAFB-10626 AND KAFB-106230
BULK FUELS FACILITY
SOLID WASTE MANAGEMENT UNIT ST-106/SS-111
EPA ID#NM9570024423, HWB-KAFB-13-MISC**

Dear Colonel Froehlich and Mr. Pike:

The New Mexico Environment Department (NMED) has received the Kirtland Air Force Base (AFB) (Permittee) letter dated July 27, 2016. The referenced letter serves as notification to NMED of the cessation of quarterly monitoring activities at two groundwater monitoring well locations, KAFB-10626 and KAFB-106230, due to an unacceptable threat level and/or risk classification posed by a resident. The home of the resident referenced in the letter is adjacent to the right-of-way where the two groundwater monitoring wells are located: one on the northeast corner of Florida Street and Anderson Street (KAFB-10626) and one on the northwest corner of Anderson Street and Georgia Street (KAFB-106230). As documented by the Permittee in their letter, there have been numerous interactions, each escalating up to the April 7, 2016 incident referenced in the letter.

The NMED is in agreement that sampling the groundwater monitoring wells, KAFB-10626 and KAFB-106230, in the vicinity of the residence referenced in the letter poses an unacceptable threat level. NMED is in agreement with the cessation of sampling at these two locations.

Col. Froehlich and Mr. Pike

August 24, 2016

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The Permittee shall submit a work plan to the NMED for the abandonment of the two groundwater monitoring wells, prior to the start of field work. NMED preserves the right to require replacement and/or alternative monitoring locations should they be deemed necessary in the future.

Sincerely,



Kathryn Roberts
Director
Resource Protection Division

KR/DA

cc: Col. M. Harner, KAFB
K. Lynnes, KAFB
A. Bodour, KAFB-AFCEC
T. Simpler, USACE
M.L. Leonard, AEHD
F. Shean, ABCWUA
L. King, EPA-Region 6 (6PD-N)
J. Kieling, NMED-HWB
D. McQuillan, NMED
D. Agnew, NMED-HWB

File: KAFB 2016 Bulk Fuels Facility Spill



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CERTIFIED MAIL – RETURN RECEIPT REQUESTED

November 16, 2016

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

**Re: BULK FUELS FACILITY EXPANSION OF THE DISSOLVED-PHASE PLUME
GROUNDWATER TREATMENT SYSTEM DESIGN, REVISION 1
SOLID WASTE MANAGEMENT UNITS ST-106 AND SS-111
KIRTLAND AIR FORCE BASE
EPA ID#NM9570024423, HWB-KAFB-13-MISC**

Dear Colonel Froehlich and Mr. Pike:

The New Mexico Environment Department (NMED) received the Kirtland Air Force Base (KAFB) (the Permittee) *Work Plan for Bulk Fuels Facility Expansion of the Dissolved-Phase Plume Groundwater Treatment System Design Revision 1 (Work Plan)*, dated September 20, 2016. The revised work plan addresses the conditions in the NMED conditional approval letter dated March 25, 2016 as well as additional site activities to be performed at the Bulk Fuels Facility site, including:

- Installation of External Controls for Variable Frequency Drives on Existing Skid Pumps;
- Miscellaneous Building Changes at the Groundwater Treatment Facility (GWTS); and
- GWTS Sand Filter Design.

Revisions of this Work Plan are anticipated to provide the required information on aquifer testing of existing and newly installed extraction wells; final design drawings for the pre-treatment sand filter(s); conveyance lines for future injection wells; injection well location, design, and installation; and updates to monitoring requirements in the final discharge permit for underground injection (NMED Ground Water Quality Bureau Discharge Permit [DP] 1839). The

work plan tasks, procedures, and quality control are hereby approved with the following conditions:

1. Section 3.1.4 refers to a fifth extraction well, KAFB-106240, and working group approval of the location and design of this well. The working group and NMED have not approved the location and design of a fifth extraction well. The working group decision was to wait for a year of operation of the initial four extraction wells so that site-specific data could be evaluated to determine the optimal location, pumping rate, and well design. Therefore, the proposed location and design of KAFB-106240 listed in this revision of the work plan is not approved pending additional data collection and analysis.
2. Section 3.1.4 states that extraction wells will be logged using dual resistivity, Self Potential, and gamma logging tools. The work plan must be revised to include information on what methods and practices are to be followed for borehole logging, as well as information on equipment calibration, equipment decontamination, and quality control metrics. Additionally, Appendix A must be revised to include field forms and logs to be used during geophysical borehole logging.
3. Before the start of well construction, NMED requires that the Permittee provide a PDF copy of the lithologic log on a daily basis and the proposed screen interval via email to NMED for approval, ahead of the start of well construction. The NMED will provide approval of the proposed screen within 24-hours of receipt. If the geophysical logging data is used for final design of the extraction well, NMED requests that the geophysical data be provided with the proposed screen intervals.
4. Section 3.1.5 must be revised to reflect the changes made to the groundwater monitoring well design as described in email correspondence dated October 20, 2016 (Permittee to NMED). The Permittee cites changes to the well construction design based on a *Final Constructability Review* with the contracted drilling company.
5. The proposed nested well design is approved with the understanding that adjustments may be necessary based on changed conditions in the field. NMED requests an email notification of any deviations from the submitted well design which includes the proposed well design/screen interval for NMED approval a minimum of 24 hours ahead of the start of well construction. The proposed well design can be submitted via email in PDF format. NMED requests the proposed well design be sent no sooner than 24 hours ahead of start of well construction.
6. Section 3.1.7 includes the conceptual design of sand filters for pre-treatment at the GWTS. The Permittee must provide the final sand filter design and specifications to NMED a minimum of 30 days prior to the start of construction. NMED will notify the Permittee within 2 weeks of receipt whether the design is approved or if a period of further review is required.
7. Section 3.1.7 references daily, weekly, and monthly sampling that will occur with the “shakedown and QC functions of the expanded GWTS.” It is not clear how shakedown is defined and what actions will initiate the sampling frequency. Additionally, the NMED requires that the treatment system be sampled daily for one week, weekly samples for one month, and monthly samples thereafter once a new extraction well has been brought online. The Permittee shall revise the work plan to clarify shakedown and actions that will trigger the sampling frequency.

8. Section 3.1.11.1 states that 19 newly installed groundwater monitoring wells have completed the quarterly baseline sampling as of Q1 2016 and are now going to a semi-annual monitoring frequency. The Permittee has reclassified all 19 newly installed wells as “Extended Network” wells as defined in *Requested Optimization of Monitoring and Reporting, Second Phase, Bulk Fuels Facility Spill Site* dated December 9, 2015. This categorical change to reclassify the 19 wells is not approved. Eleven of the newly installed wells are in sentinel well locations and therefore meet the definition of “Downgradient Proximal Wells.” The work plan and Table 3-2 shall be revised to reflect the well classification and sampling frequency below:

Well ID	Updated Well Classification	Sample Frequency
KAFB-106216	Downgradient Proximal Wells	EDB and field parameters – quarterly Metals, Anions, Alkalinity – Semi-annually VOCs – Annually
KAFB-106217		
KAFB-106218		
KAFB-106222		
KAFB-106223		
KAFB-106224		
KAFB-106231		
KAFB-106232		
KAFB-106212	Extended Network Wells	EDB, Metals, Anions, Alkalinity – Semi-annually VOCs – Annually
KAFB-106213		
KAFB-106214		
KAFB-106215		
KAFB-106219		
KAFB-106220		
KAFB-106221		
KAFB-106225		
KAFB-106226		
KAFB-106227		
KAFB-106230		

9. The Permittee shall revise Table 3-2 to indicate that the two new groundwater monitoring well nests, KAFB-106235 and KAFB-106236, will be sampled quarterly as “Newly Installed Monitoring Wells” in accordance with the approved *Requested Optimization of Monitoring and Reporting, Second Phase, Bulk Fuels Facility Spill Site* dated December 9, 2015.
10. Section 3.2.15 states that extraction well development will follow KAFB Standard Operating Procedures and a 2004 update to the Base-Wide Plans. NMED requests that these documents be made available for reference/review.
11. Conditions defined in the discharge permit DP-1839 for underground injection at KAFB-7 and future injection wells must be incorporated and addressed in the work plan. Specifically, the work plan and the Quality Assurance Project Plan must include the

permit sampling and monitoring requirements for the GWTS; requested information on the scope, purpose, location, and design of future injection wells and the associated conveyance piping; reporting requirements; and any other conditions in DP-1839 relevant to the tasks in the work plan.

Section 3.2.16.5, *Collection of Groundwater Sampling from Monitoring Wells Not Equipped with Dedicated Pumps Using Passive Sampling Techniques* is not approved at this time, and is pending NMED review and analysis of validation study data provided in the *Quarterly Report – April-June 2016, Bulk Fuels Facility, Solid Waste Management Unit ST106/SS-11, Kirtland Air Force Base, New Mexico* dated September 23, 2016.

The NMED understands that the Air Force intends for this Work Plan to be a single source for details related to work conducted under the dissolved-phase plume collapse interim measure. As such, this Work Plan shall be updated, as necessary, to reflect changes resulting from new or modified permitting requirements; revisions to GWTS monitoring and contingency plans; and modifications to scope and detail of identified tasks. Future revisions to the work plan are subject to NMED review and approval. Please submit a revised Work Plan that addresses the conditions identified in this approval.

Should you have any questions regarding this letter please contact Ms. Diane Agnew at (505) 222-9555.

Sincerely,



Kathryn Roberts
Director
Resource Protection Division

KR/DA

cc: Col. M. Harner, KAFB
K. Lynnes, KAFB
A. Bodour, KAFB-AFCEC
T. Simpler, USACE
M.L. Leonard, AEHD
F. Shean, ABCWUA
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Col. Froehlich and Mr. Pike
November 16, 2016
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File: KAFB 2016 Bulk Fuels Facility Spill