



OVERNIGHT DELIVERY

DEPARTMENT OF THE AIR FORCE
377th Civil Engineer Division (AFMC)

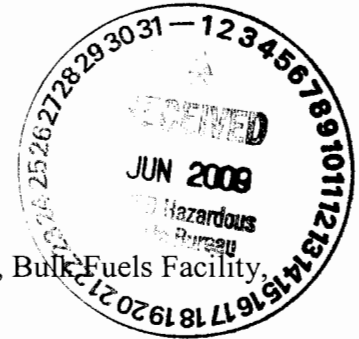


29 May 09

MEMORANDUM FOR MR. WILLIAM C. OLSON, CHIEF
GROUNDWATER QUALITY BUREAU (GWQB)
NEW MEXICO ENVIRONMENT DEPARTMENT (NMED)
PO BOX 26
SANTA FE, NM 87502

FROM: 377 MSG/CEANR
2050 Wyoming Blvd SE, Suite 116
Kirtland AFB NM 87117-5270

SUBJECT: *Stage 2 Abatement Plan Modification Addendum May 2009*, Bulk Fuels Facility,
Kirtland Air Force Base (AFB), New Mexico



1. The Natural Resource Management Branch at Kirtland AFB is pleased to submit the subject document including one electronic version. The workplan outlines the proposed installation of monitor wells to complete the investigation of the extent of the phase-separated hydrocarbon (PSH) plume discovered on and off of Kirtland AFB. This workplan has been discussed and coordinated with Mr. Baird Swanson of your staff.

2. Please contact Mark Holmes, at 505 846-9005 if you have any questions or comments on this matter.

LUDIE W. BITNER, YF-02
Chief, Restoration Section

Attachments:

1. Monitor Well Installation Workplan Addendum,
2. Electronic Version of the Monitor Well Installation Workplan Addendum

KAFB3284

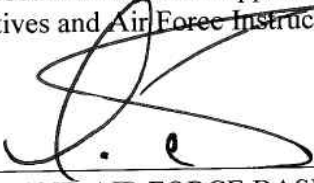


cc:

VA Hospital, Mr. Reichter, w Atchs
ABCWUA, Ms. Gastian, w Atchs
~~ABCWUA, Mr. Stomp, w Atchs~~
ABCWUA Advisory Board, Dr. Thompson, w Atchs
COA-AEHD, Mr. Soladay, w Atchs
NMED GWQB, Mr. Swanson, w Atchs
NMED HWB, Mr. Kieling, w Atch 2 only
CAB (all members), Atch 2 only (to be submitted with meeting minutes)
NMED HWB, Mr. McDonald, wo Atchs
USEPA-Region 6 (6PD-N), Ms. King, wo Atchs
HQ AFMC/A7CVQ, Mr. Fort, wo Atchs
AFCEE/EXEC, Ms. Doll, wo Atchs
CH2M, Ms. Minchak, wo Atchs
Admin. Record, CNM, Montoya Campus w Atch 2 only
AR/IR, w Atch 2 only
File

DOCUMENT CERTIFICATION
May 2009

This document has been approved for public release in accordance with Department of Defense Directives and Air Force Instructions.

A handwritten signature in black ink, consisting of several overlapping loops and a final flourish.

KIRTLAND AIR FORCE BASE
377th ABW Public Affairs

ATTACHMENT

Stage 2 Abatement Plan Modification Addendum May 2009, Bulk Fuels Facility, Kirtland Air Force Base (AFB), New Mexico

1. This Addendum summarizes activities that will be conducted as part of ongoing investigation at the Kirtland AFB Bulk Fuels Facility. This document constitutes an addendum to the *Stage 2 Abatement Plan Modification* dated August 1, 2007 (USAF, 2007). The original *Plan Modification* provided overall direction for the execution of ongoing activities at the site such as installation of additional groundwater monitoring wells. The *Plan Modification* indicated letter-type addenda would be prepared as needed to supplement the original document and more specifically describe different phases of proposed activities.
2. Activities proposed within this May 2009 addendum include installation of additional groundwater monitoring wells to continue delineation of phase-separated hydrocarbon (PSH) on the water table both on Kirtland AFB property and off-base on properties owned by the City of Albuquerque. Currently three to five additional groundwater monitoring wells are planned for installation. Figure 1 presents the first two proposed additional monitoring well locations. Subsequent well locations will be finalized in consultation with the NMED-GWQB as the drilling program progresses.
3. Figure 1 identifies the first two proposed locations. The location on San Pedro Avenue is proposed to target delineation of the north-northwest edge of the PSH plume and dissolved phase impacts north of the less than 0.01 foot thick sheen of PSH present in well KAFB-10618. The well location on Dakota Avenue is proposed to delineate the downgradient extent of both PSH and dissolved phase impacts to groundwater. Both of these well locations will be installed on City of Albuquerque right-of-ways associated with City streets. A third well location will likely be necessary to the northeast of well KAFB-10617; the exact location will be evaluated as drilling proceeds at the first location.
4. The fourth and fifth proposed wells will most likely be installed on Kirtland AFB to supplement and refine the PSH delineation in the presumed release area at the Bulk Fuels Facility. However, final locations for these wells will not be selected until there is an indication that the additional planned wells in the downgradient direction appear sufficient to delineate the plume in that area. Kirtland AFB will consult with the NMED-GWQB to assess the delineation needs in different areas of the plume as data are available as drilling proceeds.
5. The exact physical locations of all proposed wells will be dependant on access and utility clearances and may be slightly modified based on logistical access. Prior to initiating drilling at individual locations Kirtland AFB will seek a field consultation and approval from the NMED-GWQB on all well locations.
6. Overall, well installation techniques will utilize the same field procedures outlined in Section 3.3.1.1 of the original *Plan Modification* (USAF, 2007). However, for the well locations installed in the City of Albuquerque right of way in the City streets a modification to the soil sampling procedure is proposed. The proposed well installation procedure for the first three wells, anticipated to be installed between Ridgecrest Avenue and Gibson Avenue is as follows:
 - Boreholes will be installed using the downhole air rotary casing hammer (ARCH) drilling technique. Soils will be geologically logged at 10-ft intervals from returned drill cuttings by the onsite hydrogeologist. During drilling operations in the City streets no subsurface soils will be collected using split spoon samplers. This modification is proposed because these locations are located over 2,000 feet from the source area at the Bulk Fuels Facility. There is no indication that vadose zone soils between the ground surface and the water table would be impacted by any vadose zone contaminant transport.
 - Each borehole will be advanced roughly 25 feet (ft) below the groundwater table for installation of a groundwater monitoring well. The monitoring well riser will be constructed of Schedule 80,

nominal, 4-inch I.D. polyvinyl chloride (PVC). The monitoring well screen will be a 25-ft length of 0.010-inch slot stainless steel screen in order to extend the well life should PSH or high concentrations of dissolved phase VOCs be encountered. An appropriately sized filter pack for the screen slot size will be installed in the annular space surrounding the well screen to at least 2-ft above the top of the screen, overlain by 1- to 2-ft of finer grained transition sand. A bentonite seal of at least 10- to 20-ft will be placed in the annular space immediately above the filter pack with a high solids bentonite grout tremmied into place overlying the seal. Portland cement will be installed in the uppermost 30-ft of annular space around the well casing and the well will be completed with either a locking stick-up well casing or flushmount manhole based on the well location. The monitoring well will be appropriately developed by mechanical bailing and surging, and overpumping following installation unless the well contains PSH. No well development will be conducted if the well contains PSH. Kirtland AFB will seek approval from the NMED-GWQB regarding any proposed changes in borehole advancement or well construction techniques at individual locations prior to beginning such work.

- Currently, the installation of dedicated pumps in the new wells is not proposed since it is unknown whether wells will contain PSH. The eventual installation of a dedicated pump may be considered for those wells that do not contain PSH. However, as opposed to dedicated pumps, the distal downgradient wells that do not contain PSH may also be sampled through an alternative method such as passive diffusion bags. These sampling approaches will be evaluated following well installation and collection of initial baseline sample data.
 - Drill cuttings and development and purge water will be managed as outlined in the IDWMP which is provided as Appendix D to the original Plan Modification (USAF, 2007). All waste generated at off-base drilling locations will be returned to Kirtland AFB property to be staged while awaiting final characterization.
 - A New Mexico-licensed professional surveyor will survey the horizontal well location to the nearest one-tenth of one foot relative to New Mexico State Plane Coordinates and the vertical elevation to the nearest one-hundredth of one foot relative to Mean Sea Level (MSL).
 - All monitoring wells will be integrated into the ongoing quarterly groundwater sampling schedule for the Bulk Fuels Facility investigation. Groundwater samples and the appropriate QA/QC samples as specified in the Base-Wide Plan will be collected and analyzed by the analytical laboratory for the project. Groundwater sampling of site monitoring wells may be conducted with non-dedicated submersible pump, dedicated pumps that are installed in the wells, or possibly with alternative methods such as passive diffusion bags. Regular quarterly samples collected will be initially analyzed for VOCs (EPA Method 8260B), EDB (EPA Method 504.1), TPH as GRO and DRO (EPA Method 8015B), semivolatile organic compounds (SVOCs) (EPA Method 8270C), polynuclear aromatic hydrocarbon (PAHs) (EPA Method 8310), nitrate, dissolved iron and manganese, and dissolved oxygen (DO). The DO measurements will be collected using a field meter at the time of sampling. Analytical methods will adhere to the existing groundwater monitoring program established for the Bulk Fuels Facility. Should baseline sampling data indicate that a shift to an alternative sampling technique such as passive diffusion bags is appropriate, Kirtland AFB will consult with the NMED-GWQB regarding this issue and submit an addendum to this plan for any proposed modifications.
7. The anticipated schedule for installation of the initial off-base wells is to begin drilling activities the week of June 1, 2009. The expected drilling schedule for the first three wells is provided as Figure 2. Kirtland AFB will keep the NMED-GWQB informed of the drilling schedule as work progresses and seek concurrence from the NMED-GWQB on the overall schedule and progress.

8. The well installation details, groundwater analytical results, and findings will be reported in the applicable, regularly issued Semi-Annual Summary and Performance Reports for the Bulk Fuels Facility. A proposed modification to the semi-annual reporting schedule is that reports be submitted at the end of the third month following the end of the reporting periods. Currently the reports are scheduled for submittal at the end of the second month following the end of the reporting periods. The report submittal change is requested because now that data from over 20 groundwater monitoring wells and four active SVE systems are included in the semi-annual reports additional preparation time is needed to accommodate receipt, validation, review, and processing of all data.

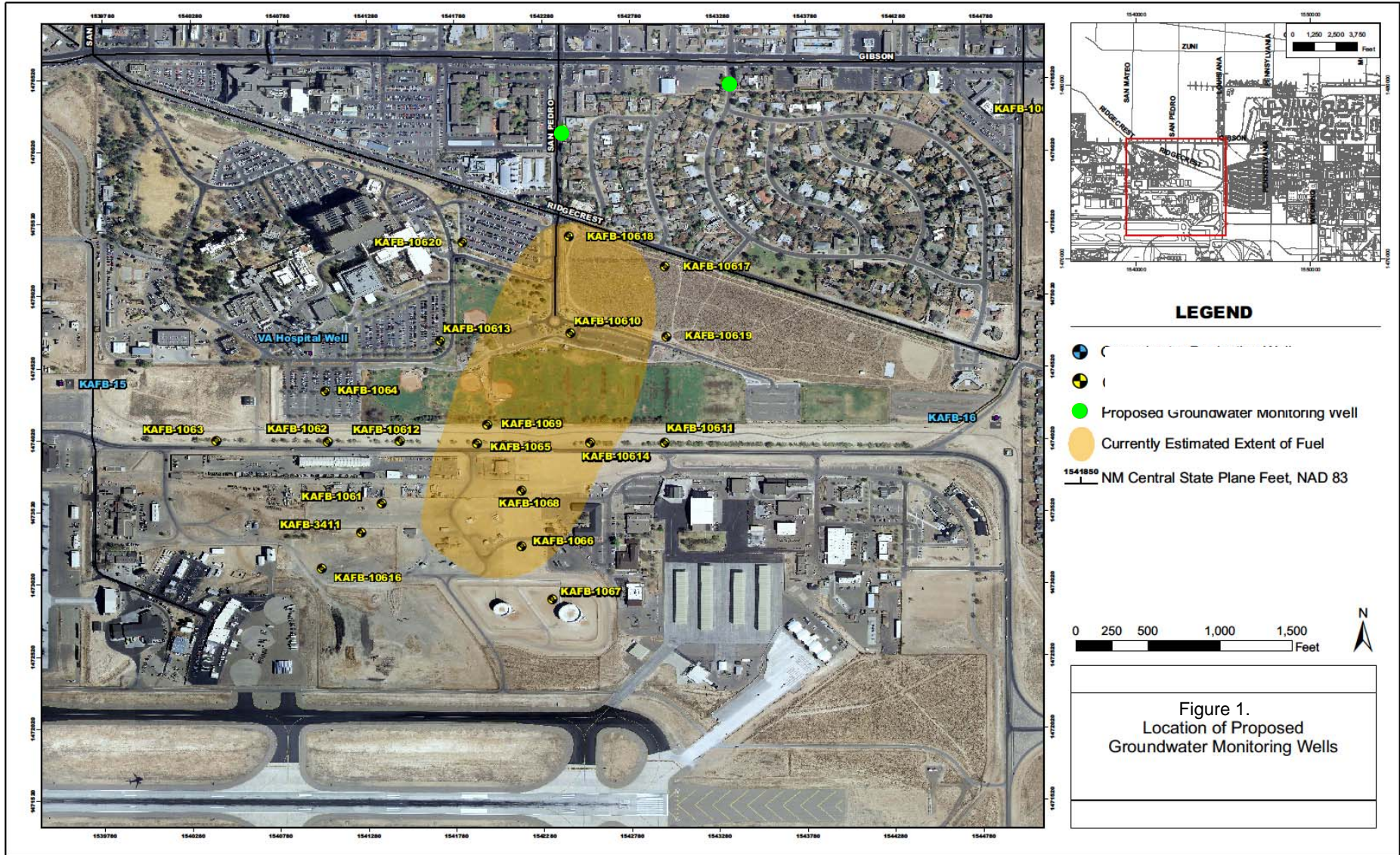
Figure:

Figure 1. Proposed Initial Groundwater Monitoring Locations




Figure 2. Proposed Drilling Schedule

References:

USAF, 2007. *Stage 2 Abatement Plan Modification*, Kirtland Air Force Base, August 2007.



LEGEND

-   Proposed Groundwater monitoring well
 -  Currently Estimated Extent of Fuel
- 1541850
NM Central State Plane Feet, NAD 83

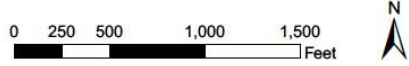


Figure 1.
Location of Proposed
Groundwater Monitoring Wells

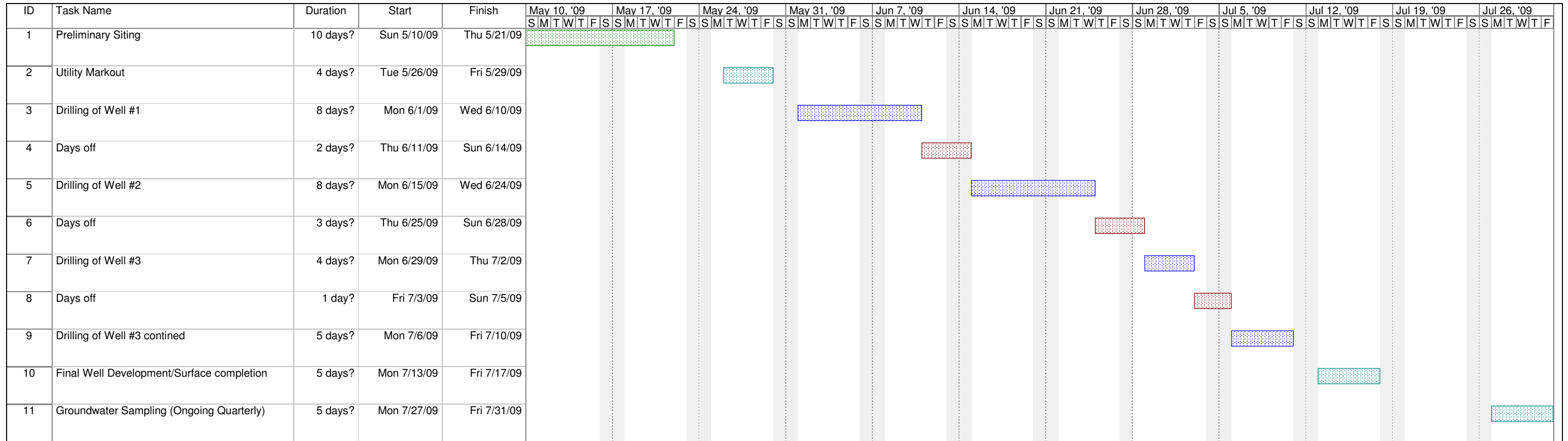


Figure 2. Proposed Drilling Schedule

