



Public Comments and NMED Responses

Draft 2017 NMED Strategic Plan - Kirtland Air Force Base Fuel Leak

March 31, 2016

The New Mexico Environment Department (NMED) sincerely thanks everyone who took time to review and comment on our draft Strategic Plan for 2017 for the Kirtland Air Force Base (KAFB) Bulk Fuels Facility (BFF) leak project. The 2017 Strategic Plan marks the third edition of this document which clearly outlines the strategies for interim measures developed by the Remediation Team.¹ We received several thoughtful, constructive comments that will improve the quality of the final Strategic Plan and the work that we will accomplish during 2017.

The Draft 2017 NMED Strategic Plan was available for public comment beginning January 13, 2017 and ending on February 17, 2017. NMED received four submissions with comments. The comments and NMED responses are as follows:

COMMENTS FROM PAUL VAN GULICK

Thank you for so assiduously involving the public in the cleanup program. I have read the Draft 2017 Strategic Plan and I am very pleased with the progress that you are making. The same could not be said even a few years ago, but NMED has really gotten its act together and I certainly appreciate that.

I understand that the strategic plan [is] more a action plan going forward to resolve a largely technical problem with technical challenges. However, I am concerned that the project may be at least partially at risk due to budget cuts – both state and federal. Has that risk to the program been evaluated and have core funding needs been identified to state and federal officials and/or legislators with budgetary control?

Thanks so much. Keep up the good work.

NMED RESPONSE TO PAUL VAN GULICK

Thank you for your time reviewing our 2017 Strategic Plan and for your comments.

NMED has a two-year Memorandum of Agreement with the Air Force that provides funding to the Department for our oversight of the Bulk Fuels leak project. This agreement ensures a dedicated NMED technical lead along with support staff in order to continue making the aggressive progress we believe is necessary for BFF. In other words, NMED provides oversight on BFF by using federal funds from the Air Force.

We are not able to provide information on funding and budget for the federal component and encourage you to reach out to Dr. Adria Bodour with the Air Force Civil Engineering Center as she will have information related to funding, budgets, and contracting now and in the future for the BFF project.

¹ The KAFB Jet Fuel Leak Remediation Team, convened in 2014, is comprised of qualified subject matter experts from: Albuquerque Bernalillo County Water Utility Authority, Air Force Civil Engineer Center, Army Corps of Engineers, New Mexico Environment Department, U.S. Air Force, and multiple contractors. Descriptions and biographies of the Team's Technical Working Groups are available on the NMED website:

<https://www.env.nm.gov/NMED/Issues/KirtlandFuelPlume/Partners.htm>

COMMENTS FROM UNITED STATES AIR FORCE

Submitted by Kate Lynnes, HQE; Senior Advisor, SAF/IEE

Comment #1: The following language changes are suggested to clarify that the MOA is a fee reimbursement agreement. That is, NMED incurs the costs, submits an invoice to the Air Force, and the Air Force reimburses NMED for allowable costs.

a. Project Roles and Responsibilities, Page 2, 3rd ¶

i. In December of 2015, the NMED and Air Force executed a Memorandum of Agreement (MOA) that reimburses NMED for expenditures associated with oversight of the KAFB Bulk Fuels Facility (BFF) cleanup. The MOA allows NMED to be reimbursed for up to \$250,000 per year for three years. This MOA funds continuing regulatory activities associated with cleanup of the jet fuel leak and helps ease the financial burden associated with providing the dedicated regulatory oversight and review required by a project as complex and extensive as the KAFB BFF fuel leak.

2. Comment #2: The following language changes are suggested to reflect that the RFI has been submitted and the Risk Assessment will be submitted in April.

a. Regulatory Framework, Page 8, 2nd ¶

i. A RCRA Facility Investigation Report (RFI) was submitted to the NMED on January 31, 2017. A risk assessment is also a part of the RFI and will be submitted in April 2017.

NMED RESPONSE TO UNITED STATE AIR FORCE

Thank you for your response and comments to the Draft 2017 NMED Strategic Plan. We have incorporated your suggested language changes into the final 2017 Strategic Plan.

COMMENTS FROM ALBUQUERQUE BERNALILLO COUNTY WATER UTILITY AUTHORITY

Submitted by Rick Shean; ABCWUA Water Quality Hydrologist

Thank you for making the 2017 KAFB Fuel Leak Strategic Plan (the Plan) available for public comment. Below are some questions/comments on the Plan assembled by the Albuquerque Bernalillo County Water Utility Authority (Water Authority) staff.

- 1. Once RCRA Facility Investigation documents are approved, how will the corrective measures evaluation projects be included/implemented in the strategic activities?*
- 2. Will the Bioventing activity mobilize any vapor contaminants to the surface?*
- 3. How will treated water from the groundwater treatment system be discharged in the winter months?*
- 4. The excellent public communication efforts need to continue as proposed in this document. Technical deep dives for the general public are a good idea.*
- 5. Can a schedule of regulatory submittals, in addition to the interim measure deliverables, to be submitted during 2017 be listed?*

NMED RESPONSES TO THE WATER UTILITY AUTHORITY

NMED thanks Rick Shean and other staff of the Water Authority for your thoughtful review and comments on the Draft 2017 Strategic Plan.

1. Once NMED has approved the Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) report and its addendum(s), the NMED will direct the Air Force to submit a work plan for how it will complete the Corrective Measures Evaluation (CME). That work plan will be reviewed and approved by the NMED before the Air Force begins the evaluation of remedies for the BFF site and it will result in a CME report submitted to NMED with a recommendation of the final remedy. The steps associated with the CME do not cleanly fall into one of the existing three strategies presented in the 2017 Strategic Plan but best fit into Strategy Two for the implementation of multiple cleanup technologies both simultaneously and sequentially to cleanup soil and groundwater. We are considering the addition of a fourth strategy that tracks the RCRA process stemming from the RFI reports to better capture the key elements of this project.
2. Bioventing remediation utilizes low air flow rates to provide just enough oxygen to sustain microbial activity. These flow rates are typically on the order of 5 to 100 cubic feet per minute (CFM) compared to the 1,600 CFM extraction flow rate at the soil vapor extraction system that operated at the BFF site. By design, the atmospheric air pushed into the vadose zone during bioventing is at low enough rates that there is minimal vapor movement vertically or horizontally. Instead the air is meant to increase the rate of degradation of the residual fuel contamination by the naturally occurring microbial population.
3. The treated water from the groundwater treatment system (GWTS) is discharged to the former water supply well KAFB-7 via gravity-fed injection during the winter months and/or when the KAFB golf course is not able to use the full volume of water generated by the operation of the GWTS. Currently, the discharge to KAFB-7 is being conducted with a temporary permission granted by NMED Ground Water Quality Bureau and the draft discharge permit is out for a second public comment period expiring on April 3, 2017.
4. Thank you for your support of NMED's strategy to meet or exceed all requirements for public information and involvement. We will continue to integrate technical deep dives into our public outreach efforts.

5. The 2017 timeline has been updated to include all regulatory submittals anticipated to be delivered during 2017. The RFI report and risk assessment are the only RCRA process documents we anticipate receiving in 2017 with an addendum to be submitted in early to mid-2018.

COMMENTS FROM ISABEL CONSTABLE

February 22, 2017

This is a challenging document for me to read. The subject is way outside my area of expertise, but I want to share that I found Butch Tongate's glowing introductory message about this being an "exemplary environmental success stor(y)" ALARMING! From my point of view the issue is far from resolved and still represents a real and (extremely!!!) significant threat to our drinking water. Stating "Albuquerque will become the first location in the world for successful bioremediation of EDB in groundwater at this scale" is just too giddy and patently reassuring. Am I correct in understanding Mr. Tongate heads our primary regulating agency, the NMED, on this under-reported, poorly understood and extremely relevant issue? If so, I want him to please put citizens first and outline every risk accurately, what the agency is doing to mitigate and monitor each of these, and outline how citizens can become more involved.

Page 1:

Misspelling of ACHIEVE: ARCHIVE THE GOAL

What I'm assuming is the goal (boxed) is confusingly located and should be moved and identified.

Page 3:

As a citizen, I want to know if monthly testing is sufficiently frequent? My understanding is that no level of ethylene dibromide is considered safe. What level of ethylene dibromide is the state considering safe? If it penetrates into the well shaft I could be drinking EDB for 29 days at a concentration of X before the well was found to be contaminated. These are the sort of things I think about as I read this document. And that keep me awake at night.

Thank you for all you're doing to help educate citizens and resolve this issue!

March 16, 2017

Here are a few additional suggestions to consider re: 2017 Strategic Plan:

- 1. Move acronym glossary to the front, perhaps after Table of Contents*
- 2. p. 1 - Identify the 10 Chemicals of Concern and highlight EDB as the top priority on this page.
Goal: Protect ABQ's aquifer and drinking water supply wells **from this jet fuel leak**.*
- 3. p. 5 - Include a best estimate of the volume and extent of the leak and concentration of EDB in the plume & soil in this Intro. The reader wants context and an idea of the size of this problem.*
- 4. The triangle diagram I find confusing.*
- 5. sp. water table*
- 6. p. 7 - Include projected completion date at end of section on Resource Conservation and Recovery.*
- 7. p. 10 – explain where the treated water going into the injection wells is expected to travel.*
- 8. Add a discussion about where the treated water should go/different reasonable options. This is an important community decision and a better informed public will be better positioned able to lobby our ABCWUA (consider adding this one to the Acronyms).*

Thank you!

NMED RESPONSE TO ISABEL CONSTABLE

February 22, 2017

Thank you so much for your time and feedback on NMED's Draft 2017 Strategic Plan.

1. Page 1 - The spelling of "achieve" on Page 1 has been corrected. We agree that the box was confusingly located and it was not clear it was highlighting the goal for the strategic plan. It has been removed from the final version as it is redundant with the proceeding box highlighting "One Goal, Three Strategies."
2. Page 3 - You ask important questions about what level of ethylene dibromide (EDB) the state considers safe, and about what testing frequency is sufficient. Both NMED and the U.S. Environmental Protection Agency (EPA) have established a non-enforceable goal of zero EDB in drinking water. However, even the most sophisticated laboratory instruments cannot test down to a concentration of zero for EDB or any other water contaminant. Enforceable regulatory standards for drinking water must be within the range of analytical detection. NMED and the U.S. Environmental Protection Agency (EPA) have set the maximum contaminant level (MCL) for EDB in drinking water at 0.00005 mg/L, or 0.05 µg/L, which is just above the best-possible analytical detection limit of 0.02 µg/L. Another way to frame the EDB MCL is that it is roughly one half of a drop of water in an Olympic size swimming pool.

Monthly sampling of water supply wells for EDB and other fuel-related compounds is sufficiently protective for the following reasons:

- The Air Force has implemented, and will continue to operate, the EDB Plume Collapse interim measure to capture and collapse the dissolved-phase EDB.
- Sentinel wells are located between the drinking water wells and the contamination plume, and will provide early detection of plume movement towards the drinking water wells. The sentinel wells are tested quarterly. If EDB is detected in a sentinel well, the technical working groups and stakeholders, including the Water Utility Authority, will be notified for discussions on next steps. Since groundwater moves slowly, in only feet per year, the sampling frequency will provide adequate time for authorities to take protective measures if a sentinel well detection occurs.
- All of this is being done to make sure that no EDB enters the drinking water supply wells at any concentration, consistent with our public health goal of zero EDB in drinking water. No fuel-related compounds have been detected in drinking water wells and sentinel wells remain non-detect for EDB.

March 16, 2017

1. We included the acronym and glossary lists as an appendix with the idea that they can be pulled out and used as a reference in our public meetings, etc. The lists will remain as an appendix to the Strategic Plan, for now, and will be reconsidered as the project document evolves.
2. The goal has been revised to be inclusive of "contamination associated with the Bulk Fuels Facility fuel leak." The reason for not using "jet fuel" is that both aviation gas and jet fuel were used at the facility and leaked into the ground. The text on Page 1 was reviewed for a best fit location to list the Contaminants of Concern (COCs) for the Bulk Fuels Facility (BFF) project. We believe that the list of COCs should remain on Page 7 of the Strategic Plan with the supporting text of how that list of compounds was identified.
3. There is too much uncertainty in the site historical records to develop an estimated volume of fuel released. The leak was discovered in 1999 when a BFF worker noticed fuel staining on the ground surface at the former fuel offloading rack (FFOR). The BFF workers then performed pressure testing of the underground pipelines between the FFOR and the pump house and both pipelines failed. It is unknown how long the pipelines were in a state of failure. Additionally, there are insufficient site records to estimate fuel loss during BFF operation; the facility was not required to keep fuel gain and loss records further back than the previous three years so there is only documentation from 1996 to 1999 (the year

the leak was discovered and the BFF system was taken out of service). The combination of variation in gain and loss totals, the uncertainty in the metering of the original fueling infrastructure, and the uncertainty in the year that the releases began makes it not possible to estimate the total volume of fuel released at the BFF site. This level of detail has been added to the text on Page 1. For more information on the site history, available records for the BFF, and estimations of fuel please refer to the RFI Report posted on the NMED website: <https://hwbdocuments.env.nm.gov/Kirtland%20AFB/KAFB4479/>.

The extent and concentrations of EDB has been added to the 2017 Strategic Plan on Page 5, as suggested.

4. The triangle diagram is included to illustrate how LNAPL can move between the four phases (soil, water, soil gas, and LNAPL). The diagram has been removed.
5. “Water able” has been corrected to “water table.”
6. There is currently not an estimate of when the project will be complete. This date is based on several critical factors, using a data-driven approach:
 - a. Completion of the RFI Report with NMED approval – Right now the Air Force is slated to submit an RFI Report addendum in 2018 to fill remaining data gaps with data from the newly installed groundwater monitoring data gap wells (KAFB-106235 and KAFB-106236) and the planning continuous cores in the source area to fill the vertical data gap for LNAPL. It is possible that additional data gaps will be identified after the LNAPL cores are collected and analyzed.
 - b. Completion of the Corrective Measures Evaluation – This step cannot begin until the NMED has reviewed and approved the RFI and addendum(s) and instructed the Air Force to proceed with the CME. This process involves the evaluation of multiple treatment strategies to achieve cleanup. There is a public comment period associate with the CME and the public has the option to request a hearing on the CME determination. The duration of this step of the process is highly variable and largely dependent on the public comment period and if a hearing is requested.

As part of the CME, the Air Force is required to estimate how long it will take for the recommended final remedy to achieve cleanup.
 - c. Implementation of the final remedy(s) – This step of the RCRA possible is the actual implementation of the final remedy that is selected by the NMED following the public comment period. Duration of implementation will depend on the technology(s) selected.
 - d. Achieving site cleanup – This step is achieved after successful implementation of the final remedy(s) and the timeline to achieve will be based on the remedies selected.
7. The treated water discharged to KAFB-7 via gravity-fed injection is returned to the aquifer and travels in the current direction of groundwater flow; the water injected at KAFB-7 becomes groundwater.
8. A discussion of discharge options and evaluation has been added to Page 18 as part of the EDB plume collapse discussion.

End of Comments and Responses