



Memo

To: Dennis McQuillan, New Mexico Environment Department

From: Rick Shean, Water Rights Program Manager, Water Authority

CC: Sec. Butch Tongate, Dep. Sec. J.C. Borrego, Bruce Yurdin - NMED
Mark S. Sanchez, John M. Stomp III, Katherine Yuhas, and Kate Mendoza –
Water Authority

Date: 3/20/2018

Re: Water Authority Comment and Concerns on NMED's 2018 Strategic Plan for
the Kirtland Air Force Base, Bulk Fuels Facility leak site

The Water Authority appreciates the opportunity to provide comments on the 2018 Kirtland Air Force Base (KAFB) Bulk Fuels Facility (BFF) leak Strategic Plan (the Plan). We have completed our review and this memo includes comments compiled by the Water Authority and our contractor. In summary, the Water Authority is alarmed at the proposal of a strategy that allows for no active remediation given the proximity of water supply wells and the limited network of groundwater monitoring wells. In addition, the strategies in the Plan are disconnected from the stated goal of protecting drinking water and the aquifer and undermine Water Authority's ability to ensure the safety and quality of drinking water. Furthermore, the 2018 Plan no longer includes a strategy or emphasis on characterizing the remaining source at the site, a critical data gap for protecting drinking water and the aquifer. The prior three strategic plans have been more encouraging, and frankly, more representative of the stakeholders' consensus on the site's status. The Water Authority is unclear on what data is being used to justify the downshift to the passive monitoring for natural attenuation.

Inclusion of the Water Authority's logo on the final page of the Plan implies our endorsement of the strategies and project timeline. It also overstates our involvement in the development of the path forward for the BFF site. The Water Authority comments and staff have been sidelined in the stakeholder and technical working group process, which represents a breakdown of the partnership success that has been touted for the site since 2015.

The following summarize our more detailed comments which we are willing to discuss with you at your earliest convenience.

WATER RESOURCES

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1. The updated Strategy 2 implies that the site is moving from an active remediation strategy to a passive remediation strategy via MNA. The Water Authority is fundamentally opposed to the application of MNA, as it extends the damages to water resources and places liabilities on the water users and utilities, while allowing the responsible party to take minimal efforts towards corrective action.

This is most prominent for the BFF site that continues to have increasing concentrations of benzene and ethylene dibromide (EDB) and that is in close proximity to drinking water supply wells. To date, the Water Authority has not seen any information or data that demonstrates that degradation rates at the site will “achieve site-specific remediation objectives within a time frame that is reasonable compared to that offered by other more active methods” (EPA, 1999). As such, it is the Water Authority’s view that discussion of MNA at this time is irresponsible and represents a disappointing shift in NMED’s expectations for the responsible party and future of the remediation of this site.

2. The 2018 update to the Plan makes a significant shift in Strategy 2 for the BFF fuel contamination. For the past three years the New Mexico Environment Department (NMED) has maintained that completing characterization of the light non-aqueous phase liquid (LNAPL) at the site is an important strategy to protect Albuquerque’s drinking water supply. The 2018 version of the Plan no longer acknowledges the remaining, uncharacterized LNAPL source and is instead shifting to a presumptive remedy of monitored natural attenuation (MNA). To date, the Water Authority has not seen a presentation or is aware of a document that demonstrates the delineation of LNAPL in the soil and groundwater.

It is our position that the NMED maintain complete characterization of LNAPL as a top-most strategy as remaining LNAPL is a potential source for continued contamination of groundwater, especially as the water table continues to rise. If the full extent of the LNAPL is not identified, then the public and other stakeholders should expect a much longer duration for and less probability of a successful cleanup at this site.

3. Page 7, Strategy 1, 2nd Bullet: The NMED references a cone of depression that persists within the groundwater extraction area. The Water Authority would like to note that an observed cone of depression in the potentiometric surface does not equate to plume capture and therefore is not a reliable metric for determining the effectiveness of the interim pump and treat system. The Water Authority has noted this several times during technical meetings.
4. Page 7, Strategy 1, 3rd Bullet: The bullet references that plume capture analysis will be “rigorously updated” but there are no specific statements on what the analysis will be. Moreover, this bullet combined with the March 6, 2018 NMED letter to the Air Force regarding the November 16, 2017 Notice of Deficiency implies that the NMED is relaxing the emphasis on the need for a robust plume

capture analysis. The Water Authority maintains that the Air Force must use a groundwater model that can be easily updated to adapt to changing site conditions and that an uncertainty analysis is critical for evaluating the results of the analysis given the range of known unknowns at the site.

5. Page 7, Strategy 1, 4th Bullet: The Water Authority appreciates the approach to utilize existing well infrastructure for monitoring LNAPL and groundwater concentrations at the BFF site. However, an outstanding technical concern raised by the Water Authority and other stakeholders at the September 2017 technical working groups is the sampling method for the previously dry soil-vapor wells. At the time, the Air Force was proposing the use of passive diffusion bags for the soil-vapor wells. Many of the wells could have floating LNAPL due to their location within the source area. Both the Interstate Technology and Regulatory Cooperation (ITRC) (ITRC, 2002) and United State Geological Survey (USGS) (USGS, 2001) clearly state that passive diffusion samples should not be in contact with LNAPL because it can clog the pores of the bag and bias results. The Water Authority reiterates its concern for applying this sampling technology at wells with the potential for LNAPL to be present.
6. The map on page 8 of the Plan shows the NMED approved network of new groundwater data gap wells and the current monitoring well network. In the September 2017 technical working group meetings, the Water Authority highlighted the fact that there are currently no groundwater monitoring wells screened at the appropriate interval at depth to verify the deep EDB trends observed at wells KAFB-106037 and KAFB-106058. At those meetings, NMED and the Air Force agreed to the placement of a down-gradient, deeper groundwater monitoring well to fill this data gap but the current approved work plan no longer has this well. The Water Authority maintains the need for a deep groundwater monitoring well at the northernmost end of the EDB plume to ensure that the vertical extent of the plume has been defined.
7. Pages 9 and 10 provide insight into the strategy being presented by NMED for monitored natural attenuation of groundwater contamination. The graphic points to three degradation processes for the groundwater plume: hydrocarbon oxidation, EDB hydrolysis, and reductive debromination. To date, the Water Authority has not seen a presentation or been privy to any report or documentation that provides evidence of these processes occurring at BFF or an estimate of the rates based on site-specific data. Data presented at earlier technical working groups indicated that reductive debromination is occurring at a very localized scale at the BFF site and is not likely a plume-wide degradation process. Additionally, there is no discussion of how these degradation processes may be impacted with the rising water table as formerly dry soil in the vadose zone becomes saturated and dormant populations of bacteria are activated.
8. Page 9 includes a statement that EDB hydrolysis is occurring at the site. The 2017 Resource Conservation and Recovery Act (RCRA) Facility Investigation

(RFI) Report included an analysis of compound-specific isotope analysis (CSIA) but used 2013 CSIA data that NMED, the Air Force, and stakeholders agreed had substantial quality issues and was not a usable dataset. The Water Authority would like to request that the analysis to evaluate degradation processes, including hydrolysis, be recompleted using the more current CSIA dataset collected in 2015 and that the results be made available.

9. Page 18 is a revised project timeline that is dramatically different from what was presented to the Water Authority governing board and at the November 2017 public meeting. Of particular concern to the Water Authority is the removal of the RFI Addendum from the timeline, a document that was agreed to by the NMED, Air Force, and stakeholders at the September 2017 technical working groups. This addendum is needed to document the completed characterization of LNAPL at the BFF site and to address the existing concern with the submerged groundwater monitoring wells in the network. Many of the Water Authority's concerns were sidelined at the September 2017 meeting with the promise of addressing them in the RFI Addendum. With the removal of this item from the path forward for the site it is not clear if or when the Water Authority's concerns will be addressed, flagging a breakdown of the stakeholder process.
10. The project timeline on page 18 includes arrows for the slug tests of groundwater monitoring wells and the aquifer test at the first groundwater extraction well KAFB-106228. When slug test data were originally presented to NMED and the project stakeholders it was decided that the analyses were flawed and therefore the parameters estimated were not usable. The Water Authority was informed that the NMED and Air Force had agreed to not proceed with that data but that a formal disapproval letter would not be sent. The inclusion of this data set on the timeline graphic indicates that the NMED has reversed its position on the usability of the slug test data. The Water Authority would like to express concern regarding the use of the flawed data analyses as it could create biases in the groundwater modeling and result in misguided decisions.
11. The project timeline on page 18 has been revised to include an arrow for the aquifer test at groundwater extraction well KAFB-106228. This aquifer test analysis is oversimplified, and the Water Authority provided detailed comment and feedback to the NMED and Air Force in January 2016. The NMED and Air Force agreed to complete additional aquifer tests at wells KAFB-106233 and KAFB-106234 to further evaluate aquifer properties to inform future groundwater modeling and plume capture analysis. As part of that effort, the results from the aquifer test at KAFB-106228 would be re-evaluated. Past and current groundwater modeling efforts have highlighted how sensitive models are to aquifer properties. This timeline does not include an arrow for these additional aquifer tests. The Water Authority would like to reiterate its request that additional testing and analysis be completed at the site to reduce the uncertainty in aquifer properties which will in turn result in more robust tools for site decision-making.

12. The rising water table, incomplete characterization of LNAPL and the source area, submerged groundwater monitoring wells, and inadequate degradation analyses completed to date all make it premature to take a passive, MNA approach to remediation of the BFF jet fuel leak. The October 2017 guidance from the EPA outlines the requirements for establishing MNA at a site and includes the following key components for selecting MNA:

- Documentation of adequate source control;
- Comprehensive site characterization, resulting in a detailed conceptual site model;
- Evaluation of time frame for meeting cleanup objectives;
- Long-term performance monitoring; and
- A contingency plan.

13. The EPA guidance also states that monitoring of natural attenuation is not suitable for sites where receptors may be impacted. Given the proximity of water supply wells to the known contamination at BFF, acknowledging the data gaps in characterizing the LNAPL source, it can be reasonably stated that the potential impact to receptors is real and thereby negating the applicability of the MNA approach. The inclusion of the Water Authority logo on Pg. 20, "The Partnership for Success," implies that the strategies outlined by the NMED are endorsed and supported by the Water Authority. It also implies that the entities listed are working in partnership to make progress at the site. The Water Authority does not support plan that endorses a switch from aggressive cleanup activities to MNA and passive remediation of the jet fuel contamination. Moreover, the omission of key requests from the Water Authority from the strategic plan and path forward for site (e.g., RFI addendum, downgradient groundwater monitoring well, capture zone analyses, etc.) indicate that comments and concerns expressed by the Water Authority are being dismissed during project decisions. The Water Authority therefore requests that our logo be removed from the strategic plan.

References

U.S. Environmental Protection Agency (EPA), 1999. Use of Monitored Natural Attenuation at Superfund, RCRA Corrective Action, and Underground Storage Tank Sites. Office of Solid Waste and Emergency Response. Directive 9200.4-17P.EPA, 2017. How to Evaluate Cleanup Technologies for Underground Storage Tank Sites, A Guide for Corrective Action Plan Reviewers. Land and Emergency Management. EPA 510-B-17-003, October.

Interstate Technology and Regulatory Council, 2002. Passive Diffusion Bag Samplers for VOC Sample Collection from Groundwater Monitoring Wells. Northeast Waste Management Official's Association. Advisory Opinion, February 15, 2002.

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