



Public Comments and NMED Responses

Draft 2016 NMED Strategic Plan - Kirtland Air Force Base Fuel Leak

March 2, 2016

The New Mexico Environment Department (NMED) sincerely thanks everyone who took time to review and comment on our draft Strategic Plan for 2016. NMED introduced this document for the first time in 2015 to clearly outline 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 2016.

The Draft 2016 NMED Strategic Plan was available for public comment beginning November 20, 2015 and ending on January 15, 2016. NMED received four submissions with comments. The comments and NMED responses are as follows:

COMMENTS FROM NANCY BEARCE

Representing District 6 Coalition of Neighborhood Associations, La Mesa Community Improvement Association, & La Mesa Community Land Trust

I am writing to provide a few public comments for the above referenced KAFB 2016 strategic plan.

While the community is pleased that remediation of the jet fuel plume has begun to treat and clean water from our aquifer, there remains the questions of what to do and what uses of the treated water are available for this precious public resource? Several ideas include:

- *Inject back into the aquifer;*
- *Use for watering area parks and public spaces such as medians and open spaces;*
- *Start a community garden for KAFB families on base and utilize the treated water.*

The past year has seen reduced participation at community meetings. Public participation has proved invaluable to changing the effectiveness and resources available to remediation project as well as assisted in starting to restore public trust and respect. Additionally, public participation is the key to long term and sustainable success of this project and the Federal Resource Conservation and Recovery Act (RCRA). Some suggestions to explore are:

- *Expand community input by using existing city neighborhood associations to put forth persons to serve on project committees who live above the plume, surrounding area and city-wide;*
- *Actively continue outreach and input from area church groups, STEM schools and teachers, Southeast Albuquerque's newest public charter technology school, professional health organizations, KAFB 344th Medical Wing, VA Hospital Staff, etc;*

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>

- *Update visual communications and meetings to include area small group meetings such as those mentioned above;*
- *Continue to provide new and different presentations inclusive of adult learning styles, experiential learning while minimizing scientific lingo and acronyms.*

Lastly, are the continued concerns over public health that must be addressed and some have been promised by the project team. This involves:

- *A publicly vetted health assessment to be submitted as part of the soon due RCRA submission;*
- *Quantify the total air quality change for the higher standards allowed for ALL the issued air standard exceptions for the SVEs and well injection units.*

Thank you for your continued work on the KAFB jet fuel plume remediation project.

NMED RESPONSE TO NANCY BEARCE

Thank you for your thoughtful and constructive comments.

The NMED is also pleased at the expanded progress of interim measures and remediation, recognizing that there is still a long way to go. We are grateful for the participation by so many concerned citizens at public meetings and field trips and we look forward to continuing to build productive dialogs with the community.

Use of Treated Water:

As mentioned in your comments, wise use of the treated aquifer water is an important yet challenging aspect of the project. The NMED and Air Force are currently exploring several options. Contaminated water pulled from the aquifer is sent through a treatment system on Base and cleaned to meet National Primary Drinking Water Standards. Since the first extraction well went on line in June 2015, no fuel contaminants whatsoever have been detected in the treated water. This clean water has been piped to a holding pond at the KAFB Tijeras Arroyo Golf Course to supplement golf course irrigation. With two additional wells now pumping and more planned for 2016, additional uses for the clean water are needed that can handle the volume of water year-round. One primary difficulty is the infrastructure needed to deliver the water from the treatment system to where it can be used.

The suggestion of injecting the water back into the aquifer is in line with what we are thinking as well. With the proper planning, clean water can be returned to the aquifer either through direct injection or through infiltration of water discharged at the surface in an "infiltration gallery". The Air Force has completed multiple percolation tests to determine how effectively water enters the ground. This data will be used to determine if infiltration galleries are a sustainable and cost-effective option for discharge of treated groundwater.

A pilot test of direct injection into the aquifer began in February 2016 and information from this test will be used to evaluate the viability of direct injection. The Air Force is utilizing a reconditioned former water supply well on KAFB for this pilot test. Both the Air Force and the U.S. Geological Survey (USGS) will collect measurements that will allow us to carefully evaluate how the injected water moves in the aquifer.

The two additional suggestions are both good ideas and something we will look into. As with all options, ability to handle the treated water year-round through fluctuating water consumption, along with identifying and providing the infrastructure needed to transport the water, are key components.

Continued Outreach and Public Participation:

We agree that public participation and awareness is and has been invaluable to the project. We have made substantial changes and improvements to our outreach strategy since 2014, including a strong, cooperative community involvement effort by NMED and the Air force.

Since both of these entities have considerable responsibilities in the remediation of this site – including outreach – we believe it is in the public’s best interest that we offer coordinated presentations and jointly hosted public meetings. Our project team meets regularly to coordinate speaking engagements, public meetings, field trips, and other outreach efforts. The NMED has also made significant changes to our KAFB project webpages in order to share more information with the public in a comprehensible format.

Attendance at the public meetings has varied over the course of the remediation. Not everyone who attends the meetings signs in, so the Air Force does not have exact numbers. Information gathered from the sign-in sheets show an average of 52 members of the public in attendance over the past 2 ½ years, but numbers vary from meeting to meeting. For example, there were at least 73 attendees in October of 2014, while there were at least 42 in November 2015. We hope that, with the variety of outreach opportunities we have provided and with additional opportunities in 2016, we will continue to involve and reach a large number of the interested community.

In 2015, NMED staff, often in concert with Air Force staff, gave 12 presentations to neighborhood associations, professional groups, college students, and other organizations. Since 2014, we have co-hosted 4 public meetings and 3 public field trips. As mentioned in the 2016 Strategic Plan, we have 3 public meetings and 2 field trips planned for 2016.

We are eager to expand our outreach to include additional groups and additional avenues for public participation and, as you suggested, we will continue to actively involve area community members. We greatly appreciate the continued leadership and assistance of the neighborhood associations. The Air Force conducted interviews with residents in the project area November and December of 2015. A report on findings of those will be available to the public in early spring 2016.

NMED and the Air Force have recently begun an effort to involve several area high schools in the science and social aspects of this project. We co-presented to the Advanced Placement Chemistry and Environmental Science classes at Highland High School in February, and are working to schedule additional presentations. Teachers will work with their classes to incorporate multiple technical aspects of the project into their curriculum including remediation technologies, hydrology, geology, and microbiology. As part of this outreach effort, we are inviting students to participate in our public meetings to share the projects they select and design.

Public Health:

The Air Force is preparing a risk assessment for submittal as part of the RCRA Facility Investigation (RFI) Report, which we anticipate to be completed later this year. The risk assessment evaluates pathways and associated risk to human health and the environment. Current discussions with the Air Force include public presentations on the risk assessment methodologies and findings ahead of the RFI submittal.

The soil vapor extraction systems used at KAFB were permitted through the Albuquerque Environmental Health Department and emissions were required to meet state and federal air emissions requirements for volatile organic compounds (VOCs) and hazardous air pollutants (HAPs). Both types of soil vapor extraction units, the internal combustion units and the catalytic oxidizer (CATOX) were tested quarterly to ensure that VOCs and HAPs were in compliance with the federal Clean Air Act.

COMMENTS FROM CITIZEN ACTION NEW MEXICO

Submitted by Dave McCoy, Esq.; Executive Director, Citizen Action New Mexico and Eric Nuttall, Ph.D., UNM Civil Engineering Professor, Retired

1. *As part of the developing Conceptual Site Model the following must be included:*
 - a. *Total estimated mass of EDB in each zone, i.e. vadose, LNAPL, and leading EDB GW plumes.*
 - b. *Total volume of fuel spilled (estimate) for aviation gas and diesel fuel.*
2. *Please provide flow direction and velocity at leading edge of the EDB plume.*
3. *Present effect on plume movement cause by pumping well/wells. Provide a summary of the various EDB remediation models.*
4. *Provide please the capital and annual operating cost for the remediation of the EDB.*
5. *Discuss the likelihood of EDB reaching the Ridge Crest or other municipal wells.*
6. *Provide a Remediation Advisory Board which includes stakeholders*
7. *Discuss the comprehensive total cleanup plan for the Kirtland BFF spill (vadose, NAPL, EDB).*
8. *There is no Environmental Impact Statement for KAFB. KAFB and NMED Are currently taking segmented actions that require an EIS. Segmented actions include commitment of major resources to monitoring, extraction wells and infrastructure and injection wells, and treatment facilities.*
9. *No Conceptual Site Plan, no RCRA Facility Investigation and Corrective Measures Study exist for the KAFB fuel spill despite the expenditure of \$100,000,000 in taxpayer revenues. Yet, large scale activities are being put in place on a "temporary" basis through the use of Groundwater Protection Bureau discharge permits outside the RCRA process. This leads to forced commitment of remedies that may be ineffectual and not cost effective. There is no information given for the costs of the various segmented actions taking place. So called "interi measures" are a steamroller approach to ignore the public. The Pump and Treat remedy is extremely expensive and is questionable when extraction of 25,000,000 gallons of water has achieved only 6 grams of EDB removal. NMED and KAFB have not addressed the earlier studies by both EPA and the National Academies of Science regarding the lack of effectiveness and high cost of Pump and Treat. NMED and KAFB are not revealing the costs of the P&T project including the cost of infrastructure, granulated activated charcoal (GAC) and the location and cost of disposal of the GAC. There is no means to evaluate the cost or success in terms of the total quantity of EDB that is approaching municipal wells.*
10. *Potential contamination of the "waters of the United States" is being allowed without a Clean Water Act permit through the use of a temporary permit for the former KAFB supply well #7 to discharge into the Tijeras Arroyo which flows to the Rio Grande. The GWPB process does not include the RCRA public participation that is required under RCRA. The GWPB and KAFB play a game of submitting applications and then withdrawing them after public comment. Then the application is modified and resubmitted with inadequate notice to derail further public consideration or challenges. This wastes public time and resources and frustrates any transparency. The persons notified on the GWPB applications are far fewer than the persons required to be noticed under the RCRA process. The discharge permits are not discussed at the quarterly poster shows so as to keep the public in the dark about shortcomings and vagueness of the applications.*
11. *The management of the EDB plume is abysmal with high turnover in Air Force and NMED personnel. The level of expertise is far from effective considering that the New Mexico Legislature requested independent scientific oversight for the plume.*

12. *It is unknown if the extraction well is having any effect on the EDB plume.*
13. *There has been no release of modeling data from three different models being conducted.*
14. *Criticisms of the lack of monitoring between the municipal wells and the EDB plume that were raised in the earlier EPA Region 6 model have been ignored. There are still an insufficient number of monitoring wells to characterize the aquifer on a local let alone the more regional area that may be affected by the EDB over time.*
15. *There is the nondisclosure of information and the sanitizing of information before it is presented to the public. Poster presentations are no substitute for what should be a much more in depth dialog with the public. There is no Citizen Advisory Board or a Remediation Advisory Board. Public comments are limited, transcripts are not provided and there is no practice of preserving such comments and whether there are responses. The only information presented is that which makes it appear that the regulatory agencies are taking control and cleaning up the EDB plume. In reality, there is no mass balance, no known volume for the spill, defective groundwater monitoring well screens, no technical information as to whether the water will remain safe, no operating capital costs, and no modeling results. There is the pulling of the EDB plume toward the entire Albuquerque basin as pointed out by Geologist John Hawley.*
16. *The public assurance that the drinking water is safe come from monitoring the municipal wells and not from the use of groundwater monitoring wells placed near to the municipal wells. As has been stated many times and ignored by NMED and KAFB, the municipal wells are pumping high volumes of water with a high dilution factor that precludes knowledge of the proximity of the EDB plume. Employees and the public using water at the Veterans Hospital are less than convinced of the reliability of testing, especially since the upper screen of the nearest monitoring well to the VA is defective. But NMED and KAFB keep on avoiding the realities of the inadequate monitoring situation.*
17. *Due to the lack of comprehensive planning and lack of independent and qualified oversight, there have been constant and costly errors made by NMED and KAFB as well as a round robin of reports and Notices of Violations. The managers at NMED and KAFB are/were clearly not qualified. Air Force commanders come and go as do NMED personnel. The latest change in the "A Team" has been the substitution of a "Highly Qualified Expert" for a microbiologist. A professional ongoing monitoring oversight board is needed.*
18. *There is no posting of comments from the public as that might indicate that the Emperor has no clothes. The public is treated as if it has no right to full access of information even though it is public taxpayer funds that are being squandered. For example, why aren't the discharge permit applications and comments by the GWPB posted? Why are there no members of the public allowed to listen to the technical group discussions? All this is an intolerable arrogance on the part of NMED, EPA, the GWPB, the WUA, KAFB and its contractors. The current 60 day Notice of Intent to Sue under RCRA is an indication of public frustration with a process that is disingenuous and largely designed to make regulators "look good."*
19. *Credit is taken for the Soil Vapor Extraction system removal of 500,000+ gallons of soil vapor. Not mentioned is the fact that 400,000 gallons of that removal was accomplished by the earlier SVE system and not the new and flawed SVE system that is not being operated at present.*

NMED RESPONSE TO CITIZEN ACTION NEW MEXICO

Thank you for your response and comments to the Draft 2016 NMED Strategic Plan. The NMED is not able to answer questions specific to Air Force budgets, operations, and contracting. Where appropriate, the NMED has responded to your comments.

1. *As part of the developing Conceptual Site Model the following must be included:*

- a. *Total estimated mass of EDB in each zone, i.e. vadose, LNAPL, and leading EDB GW plumes.*
- b. *Total volume of fuel spilled (estimate) for aviation gas and diesel fuel.*

The Air Force and NMED continue to explore options to estimate mass balance for the four phases of LNAPL that exists at this site. With regard to estimating the volumes of fuel leaked, historical records are insufficient to provide the information required to revise the estimates that have already been conducted. It is important to note, however, that the Air Force is required to clean up the vadose zone and ground water to applicable standards, regardless of how much fuel was leaked and regardless of the distribution of mass.

2. *Please provide flow direction and velocity at leading edge of the EDB plume.*

The conceptual site diagram in the Draft 2016 NMED Strategic Plan (Page 5) shows the general groundwater flow direction, and is not intended to be a substitute for more the more technical hydrogeological information contained in the various reports that the Air Force has produced over the years. It is important to note, however, that the direction and velocity of EDB migration will change as the extraction wells begin to collapse the plume.

3. *Present effect on plume movement cause by pumping well/wells.*

A major effect on groundwater flow and direction, and the plume by association, comes from the pumping of the ABCWUA water supply wells. The analytical element and finite difference model simulations conducted by the Air Force, the U.S. Environmental Protection Agency (EPA), and the Albuquerque Bernalillo County Water Utility (ABCWUA) have included pumping of the ABCWUA water supply wells. The Draft 2016 Strategic Plan includes a link to one such simulation. The effect that pumping wells has had on aquifer hydrodynamics has not been consistent over the years as ABCWUA wells come on and offline and their pumping rates change.

4. *Provide a summary of the various EDB remediation models.*

As presented at the July 23, 2015 public meeting, there is a finite difference groundwater fate and transport model, developed by the EPA with input from the Air Force and its contractor, which is used for the KAFB BFF project site. Additionally, the ABCWUA has developed an analytic element model. These models are still under development, incorporating data collected as the Air Force continues to fill groundwater data gaps through installing and sampling new groundwater monitoring wells and completion of aquifer testing of extraction wells. We will continue to provide updates on the models at the public meetings.

5. *Provide please the capital and annual operating cost for the remediation of the EDB.*

This information is not available to the NMED and should be requested from the Air Force.

6. *Discuss the likelihood of EDB reaching the Ridge Crest or other municipal wells.*

NMED will not allow EDB to reach any water supply wells, including the ABCWUA Ridgecrest well field.

7. *Provide a Remediation Advisory Board which includes stakeholders*

The Air Force is currently completing a summary report of community surveys and interviews that includes an evaluation regarding the formation of a Remediation Advisory Board. The results will be presented at the spring 2016 public meeting, and a the summary report prepared by the Air Force will be made available to the public.

8. *Discuss the comprehensive total cleanup plan for the Kirtland BFF spill (vadose, NAPL, EDB).*

A comprehensive cleanup plan does not yet exist for the KAFB BFF spill site as we are still in the site characterization phase of the RCRA process. Multiple interim measures have been and will continue to be implemented to take immediate action to protect water supply wells and to collect critical data that will be used in the Corrective Measures Evaluation (CME).

9. *There is no Environmental Impact Statement for KAFB. KAFB and NMED Are currently taking segmented actions that require an EIS. Segmented actions include commitment of major resources to monitoring, extraction wells and infrastructure and injection wells, and treatment facilities.*

The Air Force is the appropriate point of contact for inquiries into the status of an Environmental Impact Statement.

10. *No Conceptual Site Plan, no RCRA Facility Investigation and Corrective Measures Study exist for the KAFB fuel spill despite the expenditure of \$100,000,000 in taxpayer revenues. Yet, large scale activities are being put in place on a "temporary" basis through the use of Groundwater Protection Bureau discharge permits outside the RCRA process. This leads to forced commitment of remedies that may be ineffectual and not cost effective. There is no information given for the costs of the various segmented actions taking place. So called "interim measures" are a steamroller approach to ignore the public. The Pump and Treat remedy is extremely expensive and is questionable when extraction of 25,000,000 gallons of water has achieved only 6 grams of EDB removal. NMED and KAFB have not addressed the earlier studies by both EPA and the National Academies of Science regarding the lack of effectiveness and high cost of Pump and Treat. NMED and KAFB are not revealing the costs of the P&T project including the cost of infrastructure, granulated activated charcoal (GAC) and the location and cost of disposal of the GAC. There is no means to evaluate the cost or success in terms of the total quantity of EDB that is approaching municipal wells.*

The KAFB BFF project is currently in the site characterization phase and it is anticipated that a RFI Report will be submitted in summer 2016. There is an existing data gap in the northwestern portion of the dissolved-phase EDB plume that must be addressed prior to the completion of the RFI.

The statement that large scale corrective measures are being put into place outside of the RCRA process is incorrect. All of the actions taken to date are interim measures, being conducted pursuant to the KAFB RCRA permit and the applicable Office of the State Engineer and groundwater discharge permits.

While site characterization actions are completed, the NMED is working with the Air Force to continue to evaluate and implement interim measures that can be taken to be protective of human health, and stop potential migration of contamination. Through an evaluation of data collected during the quarterly monitoring, pump and treat was determined to be the most appropriate technology for an interim measure to address the groundwater contamination in a heavily developed urban area. This determination was reached by the technical working groups, composed of highly qualified state, federal, and industry experts working on this project. The interim measures will also provide valuable data to be used in the evaluation and selection of a final remedy as will be presented in the CME. A robust public notice and participation process is required as part of the CME. The public will be invited to review the RFI report, to evaluate the proposed technologies, as well as to make constructive suggestions on any additional technologies not considered or additional elements that should be evaluated.

The Air Force Force is the appropriate point of contact regarding questions of funding and cost of work being completed on the project site.

11. *Potential contamination of the "waters of the United States" is being allowed without a Clean Water Act permit through the use of a temporary permit for the former KAFB supply well #7 to discharge into the Tijeras Arroyo which flows to the Rio Grande. The GWPB process does not include the RCRA public participation that is required under RCRA. The GWPB and KAFB play a game of submitting applications and then withdrawing*

them after public comment. Then the application is modified and resubmitted with inadequate notice to derail further public consideration or challenges. This wastes public time and resources and frustrates any transparency. The persons notified on the GWPB applications are far fewer than the persons required to be noticed under the RCRA process. The discharge permits are not discussed at the quarterly poster shows so as to keep the public in the dark about shortcomings and vagueness of the applications.

The statements in this comment are factually incorrect. Currently, treated groundwater is discharged to a pond at the KAFB Golf Course where it is used for land application/irrigation of the golf course. Land application of treated groundwater does not threaten surface water sources and therefore is not in violation of the Clean Water Act as implied in the comment. Beginning on February 23, 2016, treated groundwater is being directly injected into the regional aquifer at well KAFB-7, as described in the approved work plans and the approved temporary permission to discharge. The injected water meets State and Federal standards for safe drinking water. No water from KAFB-7 will be discharged into the Tijeras Arroyo.

It is correct that KAFB submitted discharge applications that were withdrawn. This was done because KAFB and NMED staff determined that the discharge applications required additional information and detail to be reviewed for completeness. Those permit applications were resubmitted to the NMED Ground Water Quality Bureau (GWQB). The NMED GWQB is currently reviewing the permit applications for completeness. Details of the proposed discharge will be made available for public review and comment. This is in compliance with 20.6.2.3108 NMAC, which provides for public involvement. Additionally, the design of the conversion of KAFB-7 from a water supply to an injection well as approved by the NMED Hazardous Waste Bureau (HWB) in a work plan detailing the proposed work as part of the EDB interim measure.

Project permits have been discussed at past public meetings, and the NMED posts relevant project documents on our website. All of our documents are publicly available and can be provided upon request. Both the NMED and the Air Force are available to speak to any member(s) of the public, to address any outstanding questions and concerns.

- 12. The management of the EDB plume is abysmal with high turnover in Air Force and NMED personnel. The level of expertise is far from effective considering that the New Mexico Legislature requested independent scientific oversight for the plume.*

The NMED and Air Force technical teams were redesigned in the summer of 2014 with the arrival of Dr. Adria Bodour from the Air Force Civil Engineer Center (AFCEC) and the nationally recognized experts that she has brought with her onto this project. The NMED Secretary has assigned seasoned staff experts to the KAFB BFF project. The signing of the December 2015 Memorandum of Understanding and Cooperative Agreement (MOU/CA) between the NMED and Air Force demonstrates a commitment to continuing project progress with a dedicated technical team. Additional project staffing stability is provided by the Air Force's Senior Advisor, Kate Lynnes, hired in September 2015 to provide long-term management of the project.

In addition to the technical working groups that include representatives from numerous stakeholders, the NMED assembled an independent panel of experts to review documents and data in a manner that is consistent with the intent and purpose of the NM Legislature request for independent scientific oversight.

- 13. It is unknown if the extraction well is having any effect on the EDB plume.*

The NMED agrees that it is too soon to be able to make any statements on the effectiveness of the first extraction well. The Air Force continues to collect data that will be used to evaluate the effectiveness of the extraction wells. The effectiveness of the extraction and treatment of groundwater will be fully evaluated as part of the CME process.

- 14. There has been no release of modeling data from three different models being conducted.*

The results of groundwater fate and transport modeling have been presented at the public meetings, and the animated EPA model results are available on the NMED website, as linked on Page 18 of the Draft 2016 Strategic Plan.

15. *Criticisms of the lack of monitoring between the municipal wells and the EDB plume that were raised in the earlier EPA Region 6 model have been ignored. There are still an insufficient number of monitoring wells to characterize the aquifer on a local let alone the more regional area that may be affected by the EDB over time.*

The NMED disagrees with the statement that there are insufficient monitoring wells to characterize the aquifer on a local and regional scale in the plume area. Four groundwater monitoring wells will be installed in 2016 to define the northwestern edge of the EDB plume. Sufficient sentinel wells have been installed, by both the USGS and the Air Force, between the contamination plume and the water supply wells in order to provide early detection of plume migration towards the wells. Additionally, the Air Force is planning on installing a sentinel well cluster near the Veterans Administration (VA) water supply wells as an additional level of protection for the VA well.

16. *There is the nondisclosure of information and the sanitizing of information before it is presented to the public. Poster presentations are no substitute for what should be a much more in depth dialog with the public. There is no Citizen Advisory Board or a Remediation Advisory Board. Public comments are limited, transcripts are not provided and there is no practice of preserving such comments and whether there are responses. The only information presented is that which makes it appear that the regulatory agencies are taking control and cleaning up the EDB plume. In reality, there is no mass balance, no known volume for the spill, defective groundwater monitoring well screens, no technical information as to whether the water will remain safe, no operating capital costs, and no modeling results. There is the pulling of the EDB plume toward the entire Albuquerque basin as pointed out by Geologist John Hawley.*

There is a difference between “sanitizing” and “summarizing” information before it is presented to the public. The data and other project information presented to the public at meetings, field trips, and on the website are summarized to provide an accurate overview of current work being done and data results in a manner that is accessible to the general public. Complete project information and data are available online, or by request, to any member of the public who wishes to review the information that is available.

The NMED is taking actions and working with the Air Force to implement interim measures that are necessary to prevent migration of EDB to water supply wells while the site characterization is completed and long-term corrective actions are evaluated. The KAFB RCRA permit specifically has a provision for the implementation of interim measures and is in agreement with the EPA statement of “*Taking interim and/or final actions to control unacceptable exposures to humans and further migration of contamination groundwater represents the highest priority for the RCRA corrective action program.*” (RCRA Corrective Action Workshop on Results-Based Project Management, 1999) These interim measures are being implemented to ensure that drinking water remains safe.

Modeling results are available on the NMED website, as referenced on Page 18 of the Draft 2016 Strategic Plan. The Air Force has conducted community interviews and surveys, specifically to evaluate the level of interest and sustainability of a Remediation Advisory Board. The results of that survey will be presented at the spring 2016 public meeting.

17. *The public assurance that the drinking water is safe come from monitoring the municipal wells and not from the use of groundwater monitoring wells placed near to the municipal wells. As has been stated many times and ignored by NMED and KAFB, the municipal wells are pumping high volumes of water with a high dilution factor that precludes knowledge of the proximity of the EDB plume. Employees and the public using water at the Veterans Hospital are less than convinced of the reliability of testing, especially since the upper screen of*

the nearest monitoring well to the VA is defective. But NMED and KAFB keep on avoiding the realities of the inadequate monitoring situation.

Public assurance that drinking water is safe is based on the monthly analytical sampling results from the ABCWUA, KAFB, and VA water supply wells. The samples from these wells have been non-detect for fuel constituents and are an adequate measure of drinking water safety. The results from the water supply wells are not used for defining EDB plume extent, as implied in this comment.

In addition, 28 individual KAFB sentinel wells plus 2 USGS nested sentinel wells have been defined for the ABCWUA, KAFB, and VA water supply wells. These wells are used as data points to provide an early indication of plume migration; the technical working groups are currently developing indicator parameters that will feed into a decision making tree for water supply well operation.

During the January 2016 hydrogeology working group, a location near the VA Hospital for nested sentinel wells similar in design to those installed at Southern Blvd. and Pennsylvania St. behind the Cesar Chavez Center was selected. The USGS will be installing these sentinel wells in late-2016.

18. *Due to the lack of comprehensive planning and lack of independent and qualified oversight, there have been constant and costly errors made by NMED and KAFB as well as a round robin of reports and Notices of Violations. The managers at NMED and KAFB are/were clearly not qualified. Air Force commanders come and go as do NMED personnel. The latest change in the "A Team" has been the substitution of a "Highly Qualified Expert" for a microbiologist. A professional ongoing monitoring oversight board is needed.*

The NMED and Air Force technical teams were redesigned in summer of 2014 with the arrival of Dr. Bodour from AFCEC. The NMED Secretary has assigned a dedicated staff to the KAFB BFF project site and the signing of the MOU/CA between the NMED and Air Force demonstrates a commitment to continuing project progress with a dedicated technical team. The Air Force's hiring of a Senior Advisor is an addition to the Air Force team, no one has been replaced. Dr. Adria Bodour has been and continues to be the project's technical lead for the Air Force.

The NMED engaged an independent group of experts to review information and documents generated by the LNAPL and Vadose Zone technical working groups.

19. *There is no posting of comments from the public as that might indicate that the Emperor has no clothes. The public is treated as if it has no right to full access of information even though it is public taxpayer funds that are being squandered. For example, why aren't the discharge permit applications and comments by the GWPB posted? Why are there no members of the public allowed to listen to the technical group discussions? All this is an intolerable arrogance on the part of NMED, EPA, the GWPB, the WUA, KAFB and its contractors. The current 60 day Notice of Intent to Sue under RCRA is an indication of public frustration with a process that is disingenuous and largely designed to make regulators "look good."*

The Air Force posts questions from the public and responses on their project website for each of the public meetings.

The discharge permit applications will be posted by the GWQB following review for administrative completeness, which is the first step in the discharge permit review process as outlined in 20.6.2.3108.A NMAC. If and when the permit application is determined to be administratively complete, KAFB will be required to post details of the discharge permit applications as specified in 20.6.2.3108.B and C NMAC. Additionally, the GWQB will post a proposed approval or disapproval of the permit applications, and the posting will include details on the proposed discharge (20.6.2.3108.F through H NMAC).

The NMED is working with the Air Force to post final technical working group notes. We believe that the posting of these notes are key to keeping transparent and open communication to the public. As stated on

Page 20 of the Draft 2016 Strategic Plan, one of NMED’s strategies for improving the distribution of information and public comment is the posting of the technical working group comments.

The NMED maintains a website with updated and current project information and can be used as a resource for finding project information: <https://www.env.nm.gov/NMED/Issues/KirtlandFuelPlume/index.html>.

20. *Credit is taken for the Soil Vapor Extraction system removal of 500,000+ gallons of soil vapor. Not mentioned is the fact that 400,000 gallons of that removal was accomplished by the earlier SVE system and not the new and flawed SVE system that is not being operated at present.*

The Draft 2016 Strategic Plan takes credit for the total gallons of fuel removed through soil vapor extraction as that is the most representative way to look at the total soil vapor extraction interim measure. It is correct to say that approximately 400,000 gallons of that total amount (456,813 gallons, to be exact) are from the operation of four internal combustion engines (ICEs). The ICE units operated for nearly 10 years, starting in 2003 and ending in December 2012 when KAFB switched over to a larger soil vapor extraction system, the CATOX. This equates to roughly 50,575 gallons removed per year using the ICE units. The CATOX system started operation in 2013 and was shut down in April 2015. During that time of operation, the CATOX removed 110,233 gallons, which is approximately equal to a rate of 55,116 gallons removed per year. The sum total of gallons removed using soil vapor extraction, not accounting for biodegradation, is 567,047 gallons.

COMMENT FROM KATE LYNNES

Submitted and commenting as a private citizen and Albuquerque resident

My formal suggestion [is] to put a description of the MOA and CA in the 2016 update.

NMED RESPONSE TO KATE LYNNES

Thank you for your suggestion. We have added an explanation of the December 2015 Memorandum of Understanding (MOU) and Cooperative Agreement (CA) between the U.S. Department of the Air Force and the State of New Mexico Environment Department to the Draft 2016 Strategic Plan.

COMMENTS FROM ALBUQUERQUE BERNALILLO COUNTY WATER UTILITY AUTHORITY

Submitted by Rick Shean; ABCWUA Water Quality Hydrologist

Thank you to the New Mexico Environment Department (NMED) for laying out their vision of the interim measure activities to occur for the Kirtland Air Force Base (KAFB) Bulk Fuels Facility (BFF) Spill in their 2016 Strategic Plan. This document is very helpful and informative and should make it easier for the public and decision makers alike forecast their expectations for the interim measures this calendar year.

Water Authority staff have reviewed the document and would like to share the following comments and questions.

1. *General Comment – Please include captions for all photographs printed in the document. This provides further education on the subject presented and validates that the image is from the KAFB BFF Spill site.*

2. *In Strategy 1, page 12, last sentence: Please add to this discussion that the Albuquerque Bernalillo County Water Utility Authority (Water Authority) will shut down any production wells, if contaminants of concern from the spill such as ethylene dibromide, are detected in its monthly sampling results.*
3. *A Corrective Measure Evaluation (CME) is mentioned in this document. Will the CME process begin in 2016, and if so, how will it be handled with the ongoing interim measures?*
4. *Please note that the Water Authority is voluntarily sampling its nearby wells for BFF Spill related contaminants on a monthly basis in the appropriate section.*

NMED RESPONSES TO THE WATER UTILITY AUTHORITY

Thanks to Rick Shean and other staff of the Water Utility Authority for your thoughtful review and comments on the Draft 2016 Strategic Plan.

1. *Photo captions* – We have added captions to photos in the Plan
2. *Strategy 1, page 12*- we have added this sentence.
3. *Corrective Measure Evaluation (CME)* – We anticipate the CME process will begin in 2017. We have revised the 2016 Strategic Plan to include sections on “Final Corrective Measure Evaluation, Selection, and Implementation” to address how Strategies 1-3 will tie into the CME process. ²
4. *Sampling nearby wells* – we have added this note to the 2016 Strategic Plan.

End of Comments and Responses

² Corrective Measure Evaluation is part of the Resource Recovery Conservation Act (RCRA) Corrective Action process. For more information on RCRA Corrective Action see the [EPA website](#) or EPA RCRA Orientation Manual.