November 6, 2012
Laurie King, Chief
Federal Facilities Section
Multimedia Planning and Permitting Division
EPA Region 6
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733

Dear Ms. King:

Thank you for your response to Citizen Action's request for EPA Oversight and National Priorities Listing for the Kirtland Air Force Base aviation and jet fuel spill. EPA maintains oversight authority over the Kirtland Spill under the Resource Conservation and Recovery Act (RCRA). Recently, EPA Region 6 has been reported by the EPA Inspector General as needing to improve oversight activities. http://www.epa.gov/oig/reports/2010/20100414-10-P-0100.pdf With that in mind, we were disappointed with your response for several reasons. There are concerns for lack of enforcement of the Resource Conservation and Recovery Act (RCRA) that were identified in our letter and that were not addressed. Under 42 U.S.C. §6973 (RCRA §7003), where there is imminent and substantial endangerment to public health and the environment, the EPA has authority to take actions independent of the corrective actions taken under 42 U.S.C. §6928 (RCRA §3008). The Citizen Action letter of August 28, 2012 presented enough reliable evidence to enable a reasonable person to conclude that action by EPA under §6973 is appropriate.

There are numerous technical concerns that were not addressed along with provisions for public participation that are not met. The simple fact is that the New Mexico Environment Department (NMED) and KAFB have allowed the following present reality to take place for 13 years:

1. At the present moment, there is no approved Interim Measures plan (IM plan) for containing the 24 million gallons of jet fuel (LNAPL) residing in the Albuquerque drinking water aquifer and heading directly for ABQ's most productive well field, the Ridgecrest wells. The Air Force's plan submitted to NMED for the containment of the LNAPL plume that was approved in writing by John Kieling a year ago, was verbally rejected by Jim Davis at the September 2012 ABQ Water Authority Board meeting as too risky. Jim Davis also verbally told the Water Board in the same meeting that he was going to watch the Air Force try to stop the migration of the LNAPL plume with thermal

oxidizer technology. Acceptance or rejection of Air Force plans for the LNAPL containment requires written documentation rather than verbal acceptance by the NMED. Moreover, the thermal oxidizer technology will not remove dissolved constituents or the LNAPL, the bulk of which is now trapped beneath the water table.

2. EPA Office of Underground Storage Tanks recommended for EDB and 1,2-DCA to "Remediate lead scavengers, aggressively when such constituents could threaten a source of drinking water." http://www.epa.gov/oust/cat/lead_scavengers_memo_05212010.pdf That is not happening at KAFB. The Air Force has never submitted an IM plan to contain and remove what may be some 2 trillion gallons of EDB contaminated water heading for ABQ's most productive drinking water wells. The Air Force informed the public and the U.S. Congress in March 2011 that the EDB plume was just going to disappear due to natural processes. No data existed to make that representation as is documented in Citizen Action's August 28, 2012 letter. The Albuquerque Bernalillo County Water Utility Authority is considering two resolutions for EDB water treatment at the Ridgecrest well #5 based on the growing evidence that the EDB plume is going to reach the municipal well. ABQ can ill afford to shut down a well that is producing 20-30% of the City's water supply.

3. The EDB and LNAPL plumes have been allowed to migrate almost completely off the Kirtland base into the city of Albuquerque toward the municipal wells. The Air Force and NMED still do not know the lateral or vertical extent of the EDB plume after 13 years of characterization efforts.

4. At the present moment, the Air Force has not submitted an IM plan for removing the 24 million gallons of jet fuel (LNAPL) dissolving into the Albuquerque drinking water aquifer and heading directly for ABQ's most productive well field even though the NMED in 4 separate letters (i.e. April 2, 2010, August 6, 2010, December 10, 2010, and March 30, 2011) have asked for this plan.

5. There is no emergency response to this spill after it has been known for 13 years and has gone from an estimate of 100,000 to 24 million gallons. Not a single gallon of jet fuel LNAPL has been removed since it was discovered floating on the aquifer in 2006.

If EPA staff is monitoring this situation why have these above situations been allowed? Albuquerque may lose a sizable proportion of its drinking water because of the present and past mismanagement of this terrible spill.

RCRA concerns were not substantively addressed by the October 4, 2012 EPA letter.

1. Characterization has not been achieved for the Avgas/jet fuel spill for over 13 years. The extent of the plume of Ethylene Dibromide (EDB) has not been determined and may already be present at or very near Albuquerque's municipal wells. No monitoring has been conducted in the vicinity of ABQ's wells. The nearest monitoring well is over 2000

ft away from the Ridgecrest #5 well. The claim of "safe" municipal drinking water comes from monitoring 600-800 ft long municipal well screens that provide enormous dilution for samples. A major PCE concentration 15 times above drinking water standards was discovered in boreholes drilled for new monitoring wells. Why is there no information provided from the boreholes regarding the EDB contaminant?

While the PCE may not be related to the fuel spill itself, what evidence is there that the PCE is not related to other operations occurring at KAFB and/or Sandia National Laboratories? Tom Cooper indicated at the October 26, 2012 KAFB semi-annual meeting that the PCE was found in the groundwater during its well drilling operations for the fuel spill. The presence of a high level of PCE in the groundwater along with the fuel spill components could involve potential action under CERCLA.

There are many possible sources for PERC contamination at Kirtland and Sandia National Laboratories. In 1995 and 2007 Sandia conducted computer modeling for potential releases to groundwater from the 2.6-acre dump called the Mixed Waste Landfill. The earlier modeling identified PERC as a contaminant that could be released from the dump to groundwater below the dump, and the recent modeling confirmed that result. PERC contamination has been present for many years at the Tijeras Arroyo groundwater area of concern.

2. The sampling of soil and groundwater have been conducted inappropriately and for the data that was flawed, the NMED did not require re-sampling of 18 wells that had air in the samples that vitiates the reliability of the samples for decision making. The sampling of Volatile Organic Compounds (VOCs) in the 4th Quarter of 2012 violated EPA protocols for sampling as was described in detail in our letter. The laboratory sample checklist shows that seals on sample bottles were not intact upon arrival; temperatures were not within the correct range of > 0º C to 6º C; sample temperatures were not taken and recorded upon receipt; traffic report or a packing receipt was not present. VOC sample analysis took place weeks later. Mixed air samples in Tedlar bags could not be performed at all.

Use of such flawed sampling data for decision making defeats characterization and violates RCRA. There is concern for the extent that sampling results do not comply with RCRA and there is awareness of the use of such sample data as not being true and correct. 42 USC §6928(d)(C)(3).

In September 2012, KAFB delayed provision of the 2d Quarterly report based on

sampling issues with its laboratory.
http://www.nmenv.state.nm.us/HWB/documents/KAFB_9-18-2012_Extension_Rqst_Qrtly_Rpt.pdf
According to the 2d Q report, vadose zone contaminant mass has still not been determined. The overall effect of the current SVE efforts is difficult to determine based on the vapor concentration data. Rising water levels have caused a number of wells to have screens that are now flooded with the top of the screen below the current water table. Second Quarter 2012 measurements show that groundwater elevations now exceed the top of the screens in nine shallow groundwater monitoring wells.

Other than very limited SVE treatment for soil vapor, the technical solutions under discussion in your letter are not in place and there are numerous reasons why such solutions may not be viable. These technical limitations were discussed at length in our August 28th letter and your letter does not address any of those technical limitations. *SVE technology* cannot remove LNAPL trapped beneath the water table. Moreover, LNAPL does not readily vaporize even when floating on the aquifer. *Skimmer technology* is not under consideration for containment wells because KAFB representatives have stated they do not want to treat the contaminated water raised to the surface. The new *thermal oxidizer* is untested and still will not address the LNAPL now trapped beneath the water table and dissolving into the aquifer.

According to the EPA, "*Air sparging* is generally more applicable to the lighter gasoline constituents (i.e., benzene, ethylbenzene, toluene, and xylene [BTEX]), because they readily transfer from the dissolved to the gaseous phase. Air sparging is less applicable to diesel fuel and kerosene." From Exhibit VII-2 -- Air sparging "Cannot be used if free product exists (i.e., any free product must be removed)."
http://www.epa.gov/oust/pubs/tum_ch7.pdf

Air sparging is a technology that has been used successfully for VOCs, but while it can breakup liquid product it can cause greater mobilization of contaminants. Cleanup strategies commonly used for BTEX don't work well for EDB and DCA. There is a lack of research on how to clean up EDB and DCA on a field scale. Treatment of BTEX may expand EDB and DCA plumes resulting in more area to treat.
http://www.astswmo.org/Files/Meetings/2008/2008-State_Fund_Admin/Read_Miner-EDB_Lead_Scavengers.pdf

Air sparging is a technology that is ordinarily utilized *after* cleanup of diesel or jet fuel has been accomplished. We have as yet seen no design plan, cost analysis or feasibility

study for air sparging presented as a part of the corrective action program. “Air sparging is best suited to sites with sandy soils and medium to shallow aquifer depths at less than 50 ft below ground surface (bgs).” http://www.clu-in.org/download/contaminantfocus/dnapl/Treatment_Technologies/Air_Sparg_TR-2193.pdf

“The effects of breathing low levels of EDB have been found to cause liver and kidney damage; breathing high levels can cause death. … If the Environmental Protection Agency [NMED] decides to try air sparging and vapor extraction, they should be cautious with their methods. Airflow of the harmful vapors through the soil once they are pushed out of the groundwater may not be uniform, could become uncontrolled, and would therefore still pose a threat to the environment.” http://conservancy.umn.edu/bitstream/59506/1/5.5.Swenson.pdf The potential for the release of ethylene dibromide through air sparging and the need for vapor extraction system to remove the harmful vapors to protect against human health effects have not been discussed with the public in Albuquerque.

Would you please come to Albuquerque and meet with Citizen Action, concerned neighborhood associations and citizens of Albuquerque, to allow us to exchange information on how to improve the future management of the Kirtland spill.

Sincerely,

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