

October 6, 2009
Mr. Ron Curry, Secretary
New Mexico Environment Department
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Dear Secretary Curry,

The end to open burning at Kirtland Air Force Base is a major victory for the health of the citizens of New Mexico and sets an important precedent.

Hopefully, NMED is aware of and is actively working towards halting the larger problem of the Open Detonation unit at Kirtland AFB, called the Explosive Ordnance Disposal (EOD) range, that has been in continuous operation for decades.

The impact on Albuquerque's air quality from the pollutants released from Open Detonation practices at Kirtland AFB compared to open burning is much greater. Here are the statistics:

- The increase in carbon monoxide for one hour and the eight hour is 59% greater for Open Detonation than open burning. Albuquerque is a non-attainment area for carbon monoxide under the Clean Air Act.
- Annually, particulate matter from Open Detonation is 20 times greater than for open burning;
- Nitrogen dioxide is more than ten times greater from Open detonation than from open burning.
- Open Detonation for hydrogen sulfide is at the maximum allowable amount by the New Mexico State ambient air standard.¹

Repeatedly performing the Open Detonations on the same contaminated tract of land for decades has resulted in the resuspension of contaminated soil into the air pathway. Open Detonation releases:

- Arsenic, Lead, Mercury, Beryllium, Barium, Chromium, Selenium and,
- Radionuclides such as depleted uranium that were deposited from Sandia Labs open air testing.

¹ KAFB OB/OD Part B Permit Renewal Application, Rev. 1, Table 1, Comparison of Modeled Open Burn /Open Detonation Results to Ambient Air Quality Standards, December 2005

The inadequacy of the groundwater monitoring network and the annual exceedances of contaminants at the Explosive Ordinance Disposal (EOD) range indicate that corrective action should be performed to protect the health and safety of site workers, the public and the environment.

Citizen Action furnished in September to the NMED a Kirtland AFB Soil Sampling Constituent Results & Exceedances for 2007. The open detonation (OD) soil sampling results exceed the *Approved NMED Maximum Background Concentrations* established by the Class II Permit Modification for Kirtland AFB. The constituents that exceed NMED background concentrations are Barium, Copper, Lead, Mercury, Nickel, and Zinc. Exceedances in 2008 show the addition of Arsenic above the EPA standard for drinking water, as well as adding Beryllium and Chromium III/VI to the 2007 contaminants.

The fact of soil contamination in the proximity of the Explosive Ordinance Disposal (EOD) range demonstrates the need to stop this activity to protect public health and the environment. In addition, the exceedance of soil contaminants point to the need to halt ongoing contamination of the EOD range above permitted levels, the necessity for groundwater monitoring at the EOD range and, corrective action to clean up the contamination.

In your November 26, 2008 letter (<ftp://ftp.nmenv.state.nm.us/www/doe/pressreleases/20081126PR-ClO4Letter.pdf>) to the Environmental Protection Agency (EPA) Administrator Stephen L. Johnson, you addressed the dangers of perchlorate contamination to the groundwater resource at Sandia National Laboratories and Kirtland AFB and other sites throughout New Mexico including presence of perchlorate in municipal drinking water wells:

"At Sandia National Laboratories, adjacent to the City of Albuquerque, perchlorate has been found in the EOD Hill monitoring well at concentrations ranging from 680 µg/L to 4300 µg/L. Data from 2006 and 2007 show that perchlorate has been detected in CYN-MW6 monitoring well at concentrations between 6.56 µg/L and 8.93 µg/L. Perchlorate data at Sandia is limited, however."

"At Kirtland Air Force Base, data collected in 2006 showed perchlorate levels in monitoring well KAFB-2622 at 8.4 µg/L, and in monitoring well KAFB-2624 at 11.0 µg/L. Data collected in 2008 showed perchlorate in the "School House Mesa Well" at 5.19 µg/L. **Yet very little groundwater monitoring data has been obtained for perchlorate at Kirtland.**" (Emphasis supplied).

The EOD range is a Resource Conservation and Recovery Act (RCRA) hazardous waste unit that shows "statistically significant evidence of contamination." (40 CFR 264.98). Thus, the implementation of groundwater monitoring is required. The perchlorate and heavy metal contamination both indicate the need for a RCRA groundwater monitoring network at the EOD range. (40 CFR 264.91-.100).

Groundwater monitoring at the EOD range is inadequate.

Currently, there exists only one groundwater monitoring well that is the School House Mesa Well (SHMW) nearly 3/4 of a mile to the north of the EOD range.

Maps for the School House Mesa Well do not give the indication for groundwater flow direction. The topography for the regional landscape predicts that the groundwater flow is to the west. The SHMW is thus at a location that is cross gradient to the flow of the groundwater and is in the wrong location to serve as an upgradient well, especially since this is a RCRA permitted unit.

The proposed monitoring wells that are located on the A-1 Facility Location Map of Kirtland Air Force Base, December 21, 2005, are not appropriately located at the permitted EOD Open Detonation Range. Both proposed monitoring wells are 3/4 of a mile from the center of the EOD Range. There is no background monitoring well proposed on the 2005 map and no downgradient monitoring wells appropriately close at the point of compliance.

For reasons below, the SHMW does not provide either a reliable downgradient or background monitoring. A minimum of one upgradient background monitoring well and three downgradient contaminant detection monitoring wells should be immediately ordered by NMED for the EOD range as required by RCRA. The public must be included in the noticing and opportunity for comment and review for the new well monitoring network as provided for by 40 CFR 270.42 Appendix I.

The School House Mesa Well was drilled as a supply well to a depth of 109 ft. The water table is at ~94 ft which would make it an inexpensive well to replace. The sampling method is by use of a dedicated bailer that is improper for use. At other sites regulated by NMED, a pump providing continuous flow of water through a flow cell is required. The use of the bailer also contributes to turbidity. The Consent Order with Sandia Labs would require replacement of the SHMW well because it cannot accomplish its intended purpose. The June 2007 groundwater quality sampling log did not insert the values for turbidity although the written report cites the higher turbidity. The quality control program requires accurate sampling be collected.

The SHMW is completely unreliable for water sampling at the EOD range as has been the case for numerous groundwater monitoring wells at Kirtland AFB and Sandia Labs:

- The SHMW well is in the wrong location to serve either as a background well or a downgradient well because it is cross-gradient.
- The SHMW well was formerly used as a supply well at Kirtland AFB suggesting that the well may be several decades old.
- The SHMW turbidity levels measured shown in the June 2007 sampling was 5 (five) times more than the EPA Drinking Water Standard. The high turbidity ranges presented in many other sampling events prevent reliable and representative sampling by the SHMW well.
- In June 2007, iron was nearly 8 (eight) times the EPA Drinking Water Standard. High iron values possibly indicate corrosion of the well screen, a plume of contaminants or, compromised well chemistry within the sampling zone of the well. Turbidity may be adding to the high iron values.
- Samples taken do not provide values for filtered versus total dissolved solids.
- At any time the only use for the SHMW was for monitoring water levels.
- Nevertheless, the perchlorate contamination detected in the SHMW requires that a properly constructed monitoring well be installed at that location.

NMED should follow the precedent for stopping open burning at the KAFB Open Burn unit by stopping the same practice of

open burning/detonation at Sandia National Laboratories at the Thermal Treatment Unit (TTU). Solvents and heavy metals are released to the open air from that open burn/detonation. There is no recovery of hazardous constituents from the TTU although the technology for such recovery of toxic gases exists. The main contributor to the open burn and detonation at KAFB has been Sandia National Laboratories.

Tons of rocket motors from Sandia Labs' operations from locations such as the Sled Track have been a primary disposal at the KAFB open burn facility. How will Sandia Labs dispose of the rocket motors in the future? Are the rocket motors to be detonated at the KAFB open detonation unit? What will be disposal pathway for the rocket motors and other hazardous waste from Sandia Labs? Will NMED allow Sandia Labs to use open burning as a disposal method for the rocket motors and the other hazardous waste which were disposed of at the now closed KAFB open burn unit?

Thank you for your consideration. If you have any questions, we can be reached as below.

Sincerely,

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