



**Department of Energy  
National Nuclear Security Administration  
Sandia Field Office  
P.O. Box 5400  
Albuquerque, NM 87185**

 **ENTERED**



Mr. John E. Kieling  
Chief  
New Mexico Environment Department  
Hazardous Waste Bureau  
2905 Rodeo Park Dr. East, Bldg. 1  
Santa Fe, New Mexico 87505

**Subject: Documentation of Public Notices, Meetings, and Comments Related to Request for Class 3 Modification to the Resource Conservation and Recovery Act Facility Operating Permit for Sandia National Laboratories/New Mexico, EPA ID NM5890110518**

Dear Mr. Kieling:

The Department of Energy/National Nuclear Security Administration (DOE/NNSA) and Sandia Corporation (Sandia), are providing to the New Mexico Environment Department (NMED) responsive information associated with our May 16, 2016, request for a Class 3 Modification to the Resource Conservation and Recovery Act Facility Operating Permit for Sandia National Laboratories (SNL), Albuquerque, New Mexico. In this Permit Modification, DOE/NNSA and Sandia requested that NMED designate six Solid Waste Management Units (SWMUs) as approved for Corrective Action Complete (CAC) status. The six SWMUs are:

- 8 Open Dump (Coyote Canyon Blast Area)
- 58 Coyote Canyon Blast Area
- 68 Old Burn Site
- 149 Bldg. 9930 Septic System (Coyote Test Field)
- 154 Bldg. 9960 Septic System and Seepage Pits (Coyote Test Field)
- 502 Building 9938 Surface Discharge Site

The DOE/NNSA and Sandia requested the Permit Modification in accordance with 20.4.1.900 NMAC incorporating 40 CFR 270 Section 42(c).

The regulations in 40 CFR 270.42(c) specify that DOE/NNSA and Sandia must perform certain activities in conjunction with the Permit Modification request. To verify the completion of these activities in accordance with the regulations, each activity is discussed below.

Public and legal notice (40 CFR 270.42(c)(2))

- A legal notice of the request for a Class 3 Permit Modification was published in the Albuquerque Journal on May 25, 2016. The notice announced a 60-day public comment period ending on July 24, 2016, the name and address of the NMED contact to whom comments must be sent, and a public meeting to be held on June 21, 2016.
- DOE/NNSA and Sandia obtained the SNL facility mailing list maintained by NMED and compiled an additional mailing list of state and local government agencies in the Albuquerque area. A public notice of the Permit Modification request, with all the information specified in 40 CFR 270.42(c)(2)(i-vi), was mailed to all parties on both lists on May 25, 2016.
- The legal notice and public notice served to fully satisfy the requirements of 40 CFR 270.42(c)(2). Copies of the legal notices and the public notice are included in Enclosure 1.

Documents accessible to the public (40 CFR 270.42(c)(3))

- The Permit Modification request includes four enclosures: The first is a summary of proposed changes to the Permit; the second is a history of the six SWMUs; the third is a discussion of selected SWMUs and individual features; and the fourth is an index of the 10 volumes of supporting documents.
- Seven of the volumes were previously provided to the NMED to support Permit Modification requests in 2005 and 2008. The remaining supporting documents have been compiled in three volumes that were delivered to the NMED Hazardous Waste Bureau office in Santa Fe (one hard copy and one electronic copy), the NMED District 1 office in Albuquerque (one electronic copy), and the Government Documents Section at Zimmerman Library on the University of New Mexico (UNM) main campus in Albuquerque (2 hard copies) on May 19, 2016.
- The Permit Modification request and all 10 volumes of supporting documents were available to the public during the entire comment period. Paper copies were available at Zimmerman Library on the UNM main campus in Albuquerque, and at the NMED office in Santa Fe. The request and supporting documents were also available electronically at <http://hdl.handle.net/1928/32194> and <http://hdl.handle.net/1928/32195> through the UNM Hosted Collections in the UNM LoboVault online database.
- The electronic document collection continues to be available. The availability of paper and electronic copies of the documents in Albuquerque and Santa Fe meets the requirements of 40 CFR 270.42(c)(3).

Public meeting (40 CFR 270.42(c)(4))

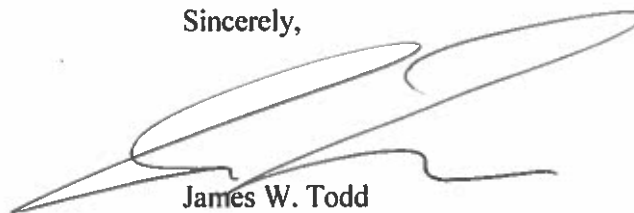
- DOE/NNSA and Sandia presented information on why corrective action is complete at SWMUs 8 and 58, 68, 149, 154, and 502 in poster format at a meeting on Tuesday, June 21, 2016. The meeting lasted from 6:00 to 8:00 pm and was held at the Manzano Mesa Multigenerational Center, 501 Elizabeth SE, in Albuquerque. The Center is located in a neighborhood adjacent to Kirtland Air Force Base. DOE/NNSA and Sandia personnel were available to answer questions during the entire meeting.
- The June 21, 2016, meeting was held later than 15 days after the start of, and earlier than 15 days before the end of the public comment period, meeting the requirements of 40 CFR 270.42(c)(4).
- Approximately 22 people signed in when they attended the meeting. The sign-in sheet is included in Enclosure 2.

Public comment period (40 CFR 270.42(c)(5))

- The comment period started on May 25, 2016, with publication of the legal notice and lasted for a total of 60 days. Members of the public were instructed to provide written comments to a point of contact at the DOE/NNSA and another at the NMED.
- Neither DOE/NNSA nor Sandia received any comments as of the date of this letter.

DOE/NNSA and Sandia are available to provide additional information as needed. If you have questions, please contact me at (505) 284-6668, or David Rast at (505) 845-5349, or Karen Oden at (505) 845-5162.

Sincerely,



James W. Todd  
Assistant Manager for Engineering

2 Enclosures:

1. Legal Notices and Public Notices
2. Public Meeting Information

cc: See Page 4

cc w/ enclosures:

Brian Salem

Hazardous Waste Bureau  
New Mexico Environment Department  
121 Tijeras Avenue, NE STE 100, Albuquerque, NM 87102

David Cobrain

Hazardous Waste Bureau  
New Mexico Environment Department  
2905 Rodeo Park Dr. E., Building 1, Santa Fe, NM 87505

Laurie King

U.S. Environmental Protection Agency, Region 6  
Federal Facilities Section (6PD-F)  
1445 Ross Ave, Suite 1200, Dallas, TX 75202-2733

cc w/o enclosures:

Amy Blumberg, SNL/NM

Peter Davies, SNL/NM

David Miller, SNL/NM

Pam Puissant, SNL/NM

John Cochran, SNL/NM

Anita Reiser, SNL/NM

Clinton Lum, SNL/NM

Tim Jackson, SNL/NM

Cynthia Wimberly, SFO/Legal

James Todd, SFO/ENG

Susan Lacy, SFO/ENG

Karen Oden, SFO/ENG

David Rast, SFO/ENG

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# CERTIFICATION STATEMENT FOR APPROVAL AND FINAL RELEASE OF DOCUMENTS

Document Title: Documentation of Public Notices, Meeting, and Comments Related to Request for Class 3 Modification to the Resource Conservation and Recovery Act Facility Operating Permit for Sandia National Laboratories/New Mexico, EPA ID NM5890110518.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment for knowing violations.

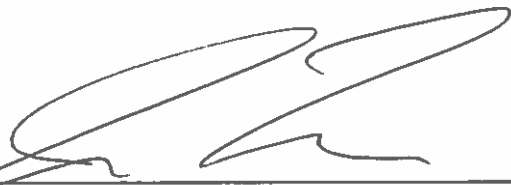


Signature

8/11/16

Date

**Peter Davies, Director**  
Geoscience, Climate, and Consequence Effects  
Center 6900  
Sandia National Laboratories/New Mexico  
Albuquerque, New Mexico 87185  
Operator  
and



Signature

31 AUGUST 2016

Date

**James Todd**  
U.S. Department of Energy  
National Nuclear Security Administration  
Sandia Field Office  
Owner and Co-Operator

**Enclosure 1**

**Legal Notices and Public Notices  
Request for Class 3 Permit Modification**

**Solid Waste Management Units 8 and 58, 68,  
149, 154 and 502**

**Sandia National Laboratories  
NM5890110518**

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## Gov't Legals

### NOTICE Sandia National Laboratories

#### Notice of a Request for a Class 3 Permit Modification Resource Conservation and Recovery Act Facility Operating Permit

On behalf of the Department of Energy (DOE)'s National Nuclear Security Administration (NNSA) and Sandia Corporation (Sandia), DOE/NNSA hereby notifies you that the DOE/NNSA and Sandia are requesting a Class 3 modification to the Resource Conservation and Recovery Act Facility Operating Permit (Permit) for designation of six solid waste management units (SWMUs) as approved for completion of corrective action at Sandia National Laboratories/New Mexico (SNL/NM).

The DOE/NNSA and Sandia have completed corrective action under plans approved by the New Mexico Environment Department (NMED) at the SWMUs, and the

NMED made preliminary determinations in January and February 2016 that corrective action is complete at these SWMUs. The six SWMUs are:

- 8: Open Dump  
(Coyote Canyon Blast Area)
- 58: Coyote Canyon Blast Area
- 68: Old Burn Site
- 149: Bldg. 9930 Septic System  
(Coyote Test Field)
- 154: Bldg. 8060 Septic System  
and Seepage Pits  
(Coyote Test Field)
- 502: Building 9938 Surface  
Discharge Site

The DOE/NNSA and Sandia request that the NMED change the status of all six SWMUs to reflect that corrective action is complete, and require implementation of long-term controls specified in Permit Attachment M at SWMU 154 and Feature 58FF within SWMU 58 to provide protection of human health and the environment.

**Comment Period.** A 60-day public comment period associated with this permit modification request begins on May 25, 2016. Comments on this request will be accepted through July 24, 2016. Comments should be directed to both:

Mr. John Kieling, Chief  
Hazardous Waste Bureau, NMED  
2805 Rodeo Park Dr. E. Bldg. 1  
Santa Fe, NM 87505

and  
Mr. David Fast  
US DOE/NNSA, Sandia Field  
Office  
PO Box 5400  
Albuquerque, NM 87185

The posters will be available for review, and personnel from SNL/NM will be available to answer questions during the entire meeting. Attendees will also be able to make written comments during the meeting. All written comments submitted during the meeting will be forwarded to the NMED.

**Public Inspection of Documents.** The permit modification request consists of a letter with four enclosures:

•Requested revisions to the Permit

•A brief history of corrective action at SWMUs 8, 58, 68, 149, 154, and 502.

•A discussion of selected SWMUs and individual features.

•A list of the supporting documents that comprise the justification for the permit modification request. These supporting documents are included in ten volumes.

The permit modification request and supporting documents are available at the following locations:

•An electronic copy is available at <http://repository.unm.edu/handle/1928/32170> through the University of New Mexico (UNM) LoboVault online database.

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**Compliance History.** The Permittees' compliance history during the life of the permit being modified is available from the NMED contact person listed below.

**Information Repository.** The Permittees maintain an information repository that includes numerous documents related to the Permit. The index of documents (and instructions for reviewing the documents) is available at <http://www.sandia.gov/RCRA/>

**Contacts.** Any questions regarding this permit modification may be directed toward any of the following contacts:

Department of Energy contact: David Rast, (505) 845-5349.

Sandia National Laboratories contact: David Miller, (505) 284-2574.

New Mexico Environment Department contact: John Kieling, (505) 476-6000.

Journal: May 25, 2016



# NOTICE

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Santa Fe, NM 87505

Mr. David Rast  
US DOE/NNSA, Sandia Field Office  
PO Box 5400  
Albuquerque, NM 87185

**Public Meeting.** Information about all six SWMUs will be presented in poster format at a meeting:

Tuesday, June 21, 2016, 6:00 – 8:00 p.m.  
Manzano Mesa Multigenerational Center  
501 Elizabeth SE

(located between Eubank and Juan Tabo, at the corner of Southern and Elizabeth, SE)

Manzano Mesa Multigenerational Center is accessible to persons with disabilities. For additional information, please contact the Center at 505-275-8731.

(continued on next page)



Sandia National Laboratories



Sandia National Laboratories is a multi-program laboratory managed and operated by Sandia Corporation, a wholly owned subsidiary of Lockheed Martin Corporation, for the U.S. Department of Energy's National Nuclear Security Administration under contract DE-AC04-94AL85000.

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**NOTICE**  
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**Resource Conservation and Recovery Act Facility Operating Permit**

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**Enclosure 2**

**Public Meeting Information  
Request for Class 3 Permit Modification**

**Solid Waste Management Units 8 and 58, 68,  
149, 154 and 502**

**Sandia National Laboratories  
NM5890110518**

**Class 3 Permit Modification Public Meeting for  
Solid Waste Management Units 8 and 58, 68, 149, 154, and 502  
Sandia National Laboratories, New Mexico  
June 21, 2016  
Manzano Mesa Multicultural Center  
501 Elizabeth Street SE, Albuquerque, NM 87123**

Welcome to the Department of Energy (DOE) and Sandia Corporation (Sandia) public meeting for the Solid Waste Management Units (SWMUs) 8 and 58, 68, 149, 158, and 502. Information is being presented in a poster session format, at stations explained below. Please refer to the map attached at the back of this handout that shows the location of the various stations.

- **Station 1 - Welcome to the Public Meeting** – Provides general information on how to access the Administrative Record documents associated with this Permit Modification, and an area with support personnel to provide written comments that will be considered and responded to by the New Mexico Environment Department (NMED).
- **Station 2 – Corrective Action Process** – The steps required to reach Corrective Action Complete status and the Class 3 Permit Modification request are outlined.
- **Stations 3 through 8 – SWMUs and Features Posters** - Provides specific technical information related to the site assessment, corrective action, and regulatory steps at the SWMUs and features that are included in this Class 3 Permit Modification.

***What are these Solid Waste Management Units and Features, where are they located, and what is the depth to groundwater?***

**SWMU 8, Open Dump and SWMU, 58 Coyote Canyon Blast Area** are located in the eastern part of Kirtland Air Force Base (KAFB). The boundary for SWMU 58 is defined by a 4000 foot diameter circle encompassing testing fragment dispersal, and is approximately 288 acres. SWMU 8 is located completely within SWMU 58 and is approximately 30 acres. The SWMUs primarily contained general refuse and demolition debris. Research tests were conducted at the SWMUs from 1950 to the late 1960s. SWMU 58 tests included at-ground or above-ground explosive detonations, and ground penetrator tests. Debris from SWMU 58 tests and other sources were disposed of at SWMU 8. Most of the solid waste at SWMU 8 consists of wood shipping crates, scrap metal, and concrete debris. Constituents of Concern (COCs) are: high explosive (HE) compounds, metals, volatile organic compounds (VOCs), semi volatile organic compounds (SVOCs), asbestos, petroleum fuels, and radionuclides.

Numerous surveys were conducted at SWMUs 8 and 58 from 1993 to 2004 that identified contaminated locations. Multiple remediation projects were conducted from the mid-1980s to 2000 that included site cleanup and/or removal of material. Approximately 1,390 cubic yards of various types of waste, 12 jet assist takeoff (JATO) motors, and other miscellaneous items were removed and disposed of properly. Confirmatory soil sample analyses were performed and used as the basis for the final risk assessment. Soil samples were analyzed for VOCs, SVOCs, total petroleum hydrocarbons, HE compounds, metals, radionuclides, and tritium. SWMUs 8 and 58 are well characterized; thus, it is appropriate to use the 95% upper confidence limit of the

average concentrations of constituents of concern (COCs) in calculating risk. In using the upper confidence limits (UCLs) of the mean concentrations for the main contributors to risk, the resulting estimated excess cancer risk and total hazard index (HI) are below the NMED guidelines for the residential land-use scenario.

The depth to groundwater ranges from 48 feet below ground surface to 72 feet below ground surface. Groundwater monitoring was conducted for thirteen quarters at two monitoring wells (CCBA-MW1 and CCBA-MW2) from October 2011 to October 2014. No groundwater analytical results exceeded the maximum contaminant levels (MCLs), except for fluoride. Fluoride was detected in a range of concentrations from 4.57 mg/L to 5.36 mg/L in monitoring well CCBA-MW1, which was just above the MCL of 4.00 mg/L for fluoride. The fluoride detected is likely naturally occurring and derived from fluorite bearing minerals in the Paleozoic and Precambrian bedrock. There are large uneconomic deposits of fluorite bearing minerals in the bedrock in the eastern portions of KAFB (Skelly August 2013). Therefore, a determination of Corrective Action Complete (CAC) without controls is recommended for SWMUs 8 and 58, except for Feature 58FF, which should be designated with controls.

**SWMU 8 and 58 Features** field investigations and surveys identified 60 individual locations (“features”) within the SWMU 58 site boundary that contained potentially contaminated soil and debris that required environmental characterization. Features are referred to by the SWMU number followed by the feature letter (for example, Feature Y located in SWMU 8 is referred to as 8Y). Four features are discussed below:

1. **Feature 58B, Pit within 8Y** is located in Quadrant C (southwest quadrant) of SWMU 58. Feature 8Y was the main surface dump within SWMU 8. In 1958, a burn test was conducted in the Feature 58B pit with simulated weapons components, jet propellant grade 4 (JP-4), and 5000 lbs. of 2,4,6-trinitrotoluene (TNT). After the burn test, the pit was filled with debris over time. Prior to clean up Feature 58B was a 20 x 30 x 5 foot pit filled with wooden debris. COCs are: metals, HE compounds, radionuclides, and tritium.

From 1993 to 1996, several surveys and a site cleanup were conducted at Feature 58B. A Voluntary Corrective Measure (VCM) was conducted in July 1996 to remove radioactive materials. In September 1998, a second VCM was conducted to remove soil within the SWMU 8Y boundary and a 20 foot buffer zone around the boundary. Approximately 220 cubic yards of soil was removed and disposed of as nonregulated solid waste. All removed HEs and unexploded ordnance (UXO) were disposed of by Kirtland Air Force Base Explosive Ordnance Disposal. Regulated waste was properly disposed off-site. The 58B pit was backfilled with clean soil, re-contoured, and reseeded. Prior to backfilling ten confirmatory soil samples were taken from the excavation and used in the risk calculation. Soil samples were analyzed for metals, total uranium, tritium, HE compounds, radionuclides, and tritium. In using the UCL of the mean concentrations for the main contributors to risk (nickel and TNT), the resulting HI and estimated excess cancer risk are below the NMED guidelines for the residential land-use scenario. Therefore, a determination of CAC without controls is recommended for Feature 58B, Pit within 8Y.

2. **Feature 58FF, Pile of Fire Bricks** is located in Quadrant D (southeast quadrant) of SWMU 58. Known activities at Feature 58FF include a burn test with an inert nuclear

weapon (without fissionable materials) that investigated how the explosives inside the weapon would react. Fire bricks at the site were used to secure the weapon. COCs are: metals, VOCs, SVOCs, and HE compounds.

In October 1993, a HE/UXO survey was performed at Feature 58FF. A radiation survey was performed both in November 1993 and in October 1996. In October 1996, a VCM was conducted to remove surface debris and soil with elevated levels of radiation. From January 1998 to March 1999, housekeeping activities were conducted to remove nonregulated waste. Five soil sampling events were conducted at Feature 58FF, and the results used in the risk calculations. Soil samples were analyzed for metals, HE compounds, VOCs, and SVOCs. In using the UCL of the mean concentrations for the main contributors to risk (arsenic, beryllium, and nickel), the resulting total human health HI and estimated excess cancer risk are below the NMED guidelines for the industrial land-use scenario. Therefore, a determination of Corrective Action Complete with controls is recommended for Feature 58FF, Pile of Fire Bricks.

3. **Feature 5800, Open Borehole** was a 1.5 foot diameter and 38 foot deep open borehole that was located in Quadrant C (southeast quadrant) of SWMU 58. COCs are: metals, VOCs, SVOCs, HE compounds, and radionuclides.

In October 1993, a HE/UXO survey was performed at Feature 5800. Radiation surveys were performed in October through November 1993. In April 1997, Feature 5800 was backfilled and soil samples taken in five foot increments from 0 to 68 feet. From January 1998 through March 1999, housekeeping activities and debris removal were conducted. In October 2005, a second borehole was drilled and soil samples taken in five foot increments from 40 to 70 feet, and included a bedrock sample from 70 to 71.8 feet. Soil samples were analyzed for metals, VOCs, SVOCs, HE compounds, and radionuclides. All soil sampling analytical results were below NMED residential levels except for arsenic. The pattern of increasing metal concentration with depth, and the characteristics of the bedrock sample both indicate that the arsenic was derived from natural sources. The bedrock sample was found to have a weathered appearance and was iron stained. The bedrock sample also contained crystals of barite and fluorite minerals, these minerals indicate that the bedrock sample had been affected by hydrothermal activity. In addition, analysis of the bedrock sample revealed it had concentrations of metal (arsenic, beryllium, and zinc) that were higher than any overlying alluvium sample. Two to three miles from Feature 5800 are lead and fluorspar mines (Fulp et al., November 1982). The elevated arsenic concentration found at depth in Feature 5800 is most likely caused by hydrothermal alteration of the bedrock and is naturally occurring; it is not the result of testing activities conducted at the site. Therefore, a determination of CAC without controls is recommended for Feature 5800, Open Borehole.

4. **Feature 8GGG, Arroyo Area** is located in Quadrant C (southeast quadrant) of SWMU 58, and is downgradient from Features 8Y/58B Debris Pile and Pit, and is an area of approximately 20 x 40 feet. Soil samples were taken from Feature 8GG to determine if COCs had migrated into the area from Features 8Y/58B. COCs are: metals, HE compounds, and radionuclides.



Ten soil samples were taken from the Arroyo Area. Four samples were taken from the arroyo in November 1996 and six from downgradient drainage channels in January 1998. The samples were analyzed for metals, HE compounds, and radionuclides. All analytical results were below the NMED residential soil screening levels, and no elevated radionuclide activity was observed. Therefore, a determination of Corrective Action Complete without controls is recommended for Feature 8GGG, Arroyo Area.

**SWMU 68, Old Burn Site** is 6.5 acres and located approximately 1 mile east of the intersection of Lovelace and Isleta Roads. From 1965 to 1978, pool fire tests were conducted to study the effects of fire on weapons components to determine the potential for release of radioactive material during a transportation accident. Tests conducted were related to the development of shipping containers, space nuclear power reactors, and nuclear weapons. SWMU 68 consisted of an above-ground earthen-bermed burn pan, a drainage ditch, an overflow basin, a rectangular burn pit, three debris piles, and two irregularly shaped borrow pits. COCs are: metals, radionuclides, HE compounds, and petroleum fuel compounds (VOCs and SVOCs). Depth to groundwater in the regional aquifer ranges from 70 feet to 175 feet below the ground surface.

Nonintrusive investigations were conducted at SWMU 68 from 1991 to 1994, including HE and radiological surveys. Three surface radiological VCMs were conducted in: (1) January through March in 1995, (2) January through March 1996, and (3) May through June 1998. All generated wastes were characterized as low level radioactive waste and disposed of properly at an approved off-site facility. In 2004, a Voluntary Corrective Action (VCA) removed: (1) the soil with elevated lead from the overflow basin, (2) the burn pan and the surrounding earthen berm, and (3) any remaining man-made objects. A total of 499 confirmatory soil analyses were used in the final risk assessment. Soil samples were analyzed for metals, VOCs, SVOCs, and radionuclides. The SWMU has been adequately characterized; thus, average concentrations and associated UCLs are representative of actual conditions. In using the UCL of the mean concentration for the main contributor to risk (arsenic), the resulting total HI and estimated excess cancer risk are below the NMED guidelines for the residential land-use scenario. Three monitoring wells were installed (OBS-MW1, OBS-MW2, and OBS-MW3) and monitored for thirteen quarters from October 2011 to October 2014. No groundwater analytical results exceeded the MCLs. Therefore, a determination of Corrective Action Complete without controls is recommended for SWMU 68, Old Burn Site.

**SWMU 149, Building 9930 Septic System** is located approximately 0.9 miles east of Technical Area III. From 1961 to 1993, the Building 9930 septic system serviced a darkroom, laboratory, shop area, bathroom, and compressor room. The septic system consisted of a 750 gallon septic tank and a 4-foot diameter seepage pit. In 1993, Building 9930 was connected to the city of Albuquerque sanitary sewer system. COCs are: petroleum fuel components (VOCs and SVOCs), metals, cyanide, chromium VI, and radionuclides. Depth to groundwater in the regional aquifer is 305 feet below the ground surface.

In May 1994, a ground conductivity survey was conducted looking for areas of high moisture near the seepage pit, but results were inconclusive. A passive soil gas survey was performed for VOCs and SVOCs in 1994, but only trace concentrations were detected. Confirmatory shallow and deep soil sampling was attempted in October 1994 and January 1995 near the seepage pit and tank. Samples could not be taken below 11 to 14 feet because of bedrock or well cemented

alluvium. All soil analytical results were non-detects, or below regulatory limits. In October 1995, the septic tank contents were removed and the tank was closed in accordance with the regulations. In October 2002, one soil sample was taken near the center of the seepage pit, but no HE compounds were detected. Five confirmatory soil samples were used in the final risk assessment. Soil samples were analyzed for metals, VOCs, SVOCs, HE compounds, hexavalent chrome, cyanide, radionuclides, and tritium. Risk analysis results show that the HI and estimated excess cancer risk are below the NMED guidelines for the residential land-use scenario. Groundwater monitoring was conducted at monitoring well CTF-MW3 from July 2002 to June 2004, and from March 2011 to October 2014. No groundwater analytical results were above the MCLs. Therefore, a determination of Corrective Action Complete without controls is recommended for SWMU 149, Building 9930 Septic System.

**SWMU 154, Building 9960 Septic System** is located in the Coyote Test Field on Kirtland Air Force Base and is approximately 1.3 miles east of Technical Area III. Building 9960 was constructed in 1965 to machine and prepare various HE assemblies for various tests in Coyote Test Field. SWMU 154 consists of two separate areas:

1. “*West System*” – consists of two 5 foot diameter HE seepage pits. In 1991, disposal to the pits was discontinued and in 1992, above ground holding tanks were installed to collect the HE wastewater.
2. “*East System*” – consists of a septic system with a 900 gallon tank and 5 foot diameter seepage pit. Building 9960 contains one bathroom, a shower, sink, toilet, and floor drain. In 1993, the Building 9960 septic system was connected to the Technical Area III sanitary sewer system. COCs are: VOCs, SVOCs, metals, nitrate, Chromium VI, HE compounds, and radionuclides. The depth to groundwater is 44 feet below the ground surface.

In March 1994 a ground conductivity survey was performed on the septic and HE seepage pits. No moist soil was detected. In May through June 1994, a passive soil gas survey was conducted on the septic and HE seepage pits. The detection of BTEX and aliphatic compounds was attributed to parked vehicles leaking fluids in the sampling areas. Five rounds of soil sampling were performed on the septic tank, seepage pit, and HE seepage pits. A total of 20 confirmatory soil analyses were used in the final risk assessment. Soil samples were analyzed for VOCs, SVOCs, metals, HE compounds, uranium, and hexavalent chrome. In using the maximum TNT concentration, the resulting HI and estimated excess cancer risk are below the NMED guidelines for the industrial land-use scenario. Groundwater monitoring was conducted at monitoring well CTF-MW2 from July 2002 to June 2004, and from March 2011 to October 2014. No groundwater analytical results were above the MCLs, except for arsenic. Both total and dissolved arsenic concentrations exceeded the MCL of 0.01 mg/L. However, analysis of trace gases and helium isotopes showed that groundwater samples collected from CTF-MW2 were derived from a mixture of shallow and upwelling endogenic (deeply derived) groundwater. Further, the elevated arsenic values at CTF-MW2 are believed to be derived from the upwelling ancient endogenic (deeply derived) groundwater (Williams et al., October 2013). Therefore, a determination of Corrective Action Complete with controls is recommended for SWMU 154, Building 9960 Septic System.

**SWMU 502, Building 9938 Surface Discharge Site** is approximately 250 square feet and is located within the boundary of SWMU 103, the Scrap Yard at Building 9939. SWMU 502 is

located approximately one-mile north of the Solar Test Facility and 65 feet south of Building 9938. Between July 2010 and the end of September 2012, Sandia personnel conducted activities involving the synthesis of explosives, and generated approximately 250 gallons of wastewater. The wastewater was discharged to the ground surface in the area south of Building 9938. The COCs are HE compounds. The depth to groundwater is approximately 350 feet below ground surface.

Soil samples were collected in January 2013 and July 2013. A total of 44 samples were collected and used in the final risk assessment. The soil samples were analyzed for VOCs, SVOCs, perchlorate, NPN, HE compounds, and metals. The SWMU is adequately characterized; thus, it is appropriate to use the 95% UCL of the average concentrations of COCs in calculating risk. In using UCLs of the mean concentrations for the main contributors to risk (antimony, arsenic, barium, and pentaerythritol tetranitrate (PETN)), the resulting HI and estimated excess cancer risk are below the NMED guidelines for the residential land-use scenario. Therefore, a determination of Corrective Action Complete without controls is recommended for SWMU 502, Building 9938 Surface Discharge Site.

***What is the purpose of this public meeting?***

This public meeting is part of the process for a request for a Class 3 Permit Modification to the Sandia National Laboratories/New Mexico (SNL/NM) Resource Conservation and Recovery Act Facility Operating Permit (the Permit). The DOE and Sandia, or Permittees, requested the Class 3 Permit Modification in May 2016 for SWMUs 8 and 58, 68, 149, 154 and 502. When the Permittees request a Class 3 modification to a permit, they are required to issue a public notice, accept public comments for 60 days, and hold a public meeting (this meeting).

The requirements for a Class 3 permit modification are detailed in the State of New Mexico regulations [Title 20, Chapter 4, Part 1, Subpart IX of the New Mexico Administrative Code (20.4.1.900 NMAC) incorporating Title 40 of the Code of Federal Regulations Part 270 Section 42(c)].

***What is the topic of this permit modification? What is involved?***

DOE and Sandia are requesting that the New Mexico Environment Department (NMED) take the following actions:

1. Determine that corrective action is complete at SWMUs 8 and 58, 68, 149, 154, and 502 at SNL/NM. This is formalized in the Permit by removing the SWMUs from Attachment K, Table K-1 which lists the SWMUs and Areas of Concern at the Facility for which corrective action is required under the Consent Order.
2. Add SWMUs 8 and 58 (except for Feature 58FF – Pile of Fire Bricks), 68, 149, and 502 to Attachment K, Table K-4 which identifies the SWMUs, Areas of Concern, and hazardous and mixed waste management units for which corrective action is complete without controls.

3. Add Feature 58FF and SWMU 154 to Attachment K, Table K-3 which lists SWMUs, Areas of Concern, and hazardous and mixed waste management units for which corrective action is complete with controls.

***What is a solid waste management unit? What are corrective action and corrective action complete?***

A SWMU is defined in the Permit as:

“any discernible unit at which solid waste has been placed at any time, and from which the Department determines there may be a risk of a release of hazardous waste or hazardous constituents, irrespective of whether the unit was intended for the management of solid or hazardous waste. Such units include any area at the Facility at which solid wastes have been routinely and systematically released; they do not include one-time spills.”

Corrective action is defined in the Permit as:

“all corrective action necessary to protect human health and the environment for all releases of hazardous or mixed waste or hazardous constituents from any Solid Waste Management Unit (SWMU) or Area of Concern (AOC) at the Facility, regardless of the time at which the waste was placed in the Unit, as required under HWA § 74-4.4.2(B) and 40 CFR § 264.101. Corrective Action may address releases to air, soil, sediment, surface water or groundwater.”

Corrective Action Complete is defined in the Permit as:

“the requirements for corrective action have been satisfied by the Permittees as determined by the Department.”

The process followed to achieve corrective action complete status consists of several steps:

- Initial identification and assessment of potential SWMUs.
- Investigation to characterize each SWMU (i.e., collect the data necessary to determine the nature and extent of any releases of contaminants) and evaluate whether remediation is needed.
- Based on investigation results, a risk assessment is performed, which is a technical process for determining if the nature and extent of any releases pose a unacceptable risk to human health and the environment.

***Why are DOE and Sandia requesting this Class 3 Permit Modification now?***

All SWMUs have gone through the corrective action process, and NMED has preliminarily determined that DOE and Sandia are eligible for corrective action complete status related to SWMUs 8 and 58, 68, 149, 154, and 502. In accordance with the Compliance Order on Consent (COOC), NMED has issued DOE and Sandia a Certificate of Completion, and DOE and Sandia are now requesting this Class 3 Permit Modification to formalize the determination in the Permit

by removing the SWMUs from a list of SWMUs that require corrective action, and adding SWMUs 8 and 58, 68, 149, and 502 to a list for which corrective action is complete with no controls, and adding Feature 58FF and SWMU 154 to a list for which corrective action is complete with controls.

When NMED grants the Class 3 Permit Modification, responsibility for the SWMUs will transfer from the SNL Environmental Restoration Operations to the SNL Long Term Stewardship (LTS) Program. The SNL LTS Program will continue to monitor and control activities at the SWMUs to ensure the current and future conditions are protective of human health and the environment.

## **References**

Fulp, M.S. (Santa Fe Mining Company), W.J. Calvin, J.R. Connolly, and L.A. Woodward (Department of Geology, University of New Mexico), November 1982. "Mineralization in Precambrian Rocks in the Manzanita-North Manzano Mountains, Central New Mexico," paper presented in the Albuquerque Country II, New Mexico Geological Society Thirty-Third Annual Field Conference Guidebook, November 4–6, 1982.

Sandia National Laboratories, New Mexico (SNL/NM), March 2006. Justification for Class III Permit Modification SWMU 68, Operable Unit 1334, Old Burn Site, Albuquerque, New Mexico.

Sandia National Laboratories, New Mexico (SNL/NM), March 2006. Justification for Class III Permit Modification SWMU 149, Operable Unit 1295, Building 9930 Septic System (Coyote Test Field), Albuquerque, New Mexico.

Sandia National Laboratories, New Mexico (SNL/NM), March 2006. Justification for Class III Permit Modification SWMU 154, Operable Unit 1295, Building 9960 Septic System and Seepage Pits (Coyote Test Field), Albuquerque, New Mexico.

Sandia National Laboratories, New Mexico (SNL/NM), January 2008. Justification for Class III Permit Modification SWMUs 8 and 58, Operable Unit 1332, Canyons Blast Area, Volumes 1 – through 4, Albuquerque, New Mexico.

Sandia National Laboratories, New Mexico (SNL/NM), June 2012. Annual Groundwater Monitoring Report, Calendar Year 2011, SAND2012-4311P, Albuquerque, New Mexico.

Sandia National Laboratories, New Mexico (SNL/NM), June 2013. Annual Groundwater Monitoring Report, Calendar Year 2012, SAND2013-4700P, Albuquerque, New Mexico.

Sandia National Laboratories, New Mexico (SNL/NM), June 2014. Annual Groundwater Monitoring Report, Calendar Year 2013, SAND2014-15438R, Albuquerque, New Mexico.

Sandia National Laboratories, New Mexico (SNL/NM), June 2015. Annual Groundwater Monitoring Report, Calendar Year 2014, SAND2015-4261 R, Albuquerque, New Mexico.

Skelly, M., Organization 06234, August 2013. Occurrence of Natural Fluoride and Metals in the Eastern Portions of Kirtland Air Force Base, Environmental Restoration Operations, Sandia National Laboratories, Albuquerque, New Mexico.

Williams, A.J., Crossey, L.J., Karlstrom, K.A., Newell, D., Person, M., and Woolsey, E., October 2013. "Hydrogeochemistry of the Middle Rio Grande aquifer system – Fluid mixing and salinization of the Rio Grande due to fault inputs", *Chemical Geology*, 351, 281-289, 2103.

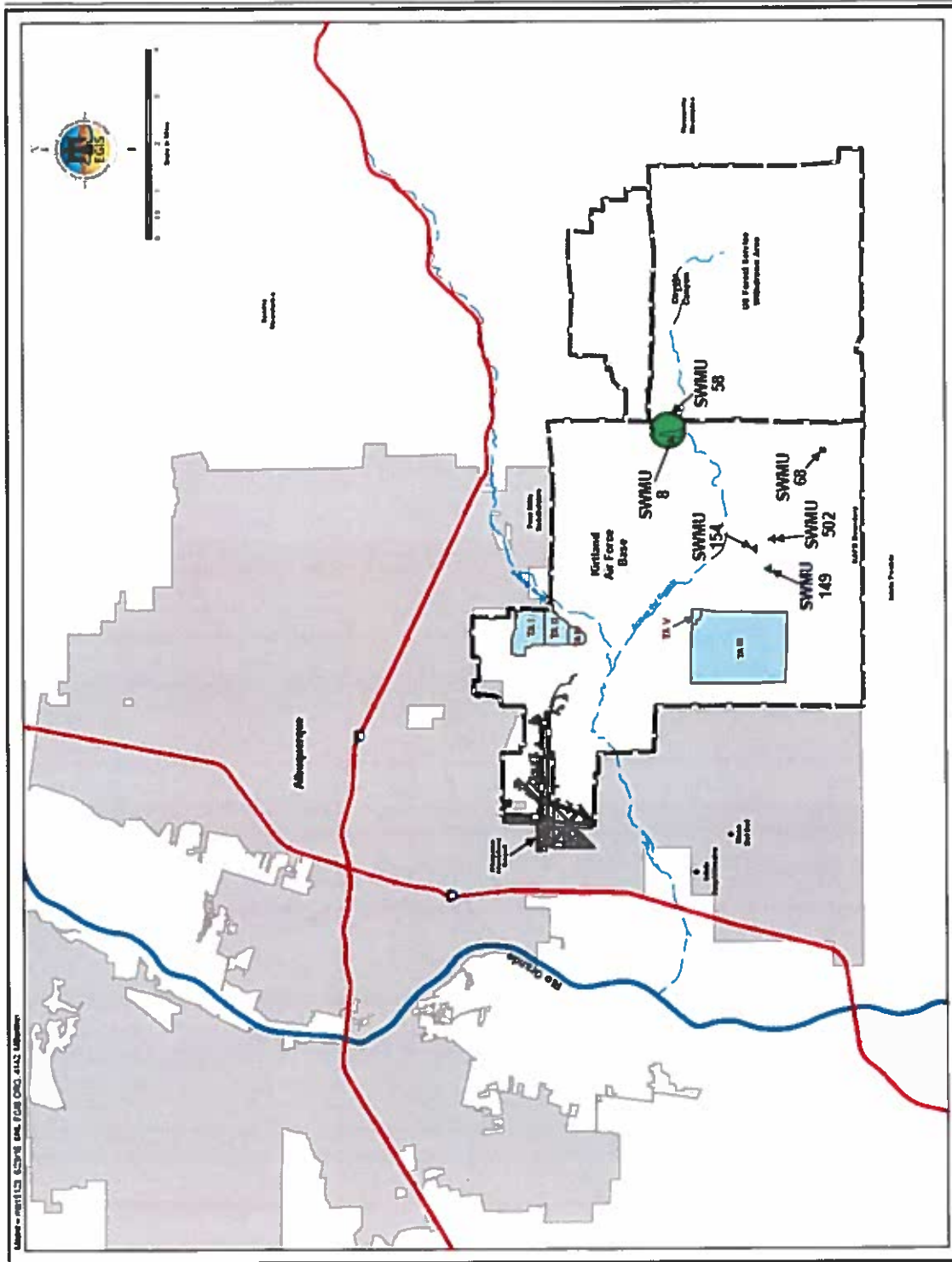


Figure 1  
 Location of Solid Waste Management Units 8, 58, 68, 149, 154, and 502 within  
 Kirtland Air Force Base and Sandia National Laboratories, New Mexico

**Information for the Public Meeting  
Request for a Class 3 Permit Modification for  
Solid Waste Management Units: 8 and 58, 68, 149, 154, and 502**

***What is the purpose of the public meeting?***

The US Department of Energy and Sandia Corporation have requested a Class 3 modification to the hazardous waste permit for Sandia National Laboratories to grant corrective action complete status to six Solid Waste Management Units (SWMUs). This meeting is part of the process for a Class 3 Permit modification.

Information about SWMUs 8 and 58, 68, 149, 154, and 502 are presented at the poster stations at this meeting.

***What is the deadline for comments?***

All comments must be submitted to John Kieling by 5:00 p.m. Mountain Time on July 24, 2016.

***What are the supporting documents?***

Additional information is available in the SWMUs justification binders.

- SWMUs 8 and 58: Justification for Class III Permit Modification, January 2008, SWMUs 8 and 58, Operable Unit 1332 Canyons Blast Area
- SWMU 68: Justification for Class III Permit Modification, March 2006, SWMU 68, Operable Unit 1334 Old Burn Site
- SWMU 149: Justification for Class III Permit Modification, March 2006, SWMU 149, Operable Unit 1295 Building 9930 Septic System (Coyote Test Field)
- SWMU 154: Justification for Class III Permit Modification, March 2006, SWMU 154, Operable Unit 1295 Building 9960 Septic System and Seepage Pits (Coyote Test Field)
- Justification for Class 3 Permit Modification Corrective Action Complete Solid Waste Management Unit 502 Building 9938 Surface Discharge Site, April 2016.

Information on the groundwater monitoring for the SWMUs 8 and 58, 68, 149, and 154 are provided in the justification binder:

- Justification for Class 3 Permit Modification Additional Groundwater Information Solid Waste Management Units 8 and 58, 68, 149, and 154, April 2016.



### ***Where can I get more information?***

These documents are available at:

- Online at <http://repository.unm.edu/>  
Hard copies at the New Mexico Environment Department Hazardous Waste Bureau  
Located at: 2905 Rodeo Park Drive East, Building 1  
Santa Fe, New Mexico  
Contact: Pam Allen, (505) 476-6064, (505) 476-6000,  
[pam.allen@state.nm.us](mailto:pam.allen@state.nm.us) for instructions.
- Hard copies at Zimmerman Library  
Located at: University of New Mexico Main Campus, Albuquerque  
Instructions: Copies are available as a course reserve at the Reference Desk on Level 1 in the library.

### ***How do I submit my comments?***

There are three ways to submit your written comments on the Class 3 permit modification request?

1. Send to: John Kieling, Chief  
Hazardous Waste Bureau  
New Mexico Environment Department  
2905 Rodeo Park Drive East, Building 1  
Santa Fe, New Mexico 87505
2. Send to: David Rast  
U.S. Department of Energy, Sandia Field Office  
PO Box 5400  
Albuquerque, New Mexico 87185  
The comments will be forwarded to John Kieling.
3. Use the comment forms available at this meeting.  
The comments will be forwarded to John Kieling.

# June 21, 2016 Public Meeting

Request for Class 3 Permit Modification for  
Solid Waste Management Units 8 and 58, 68, 149, 154, and 502  
Sandia National Laboratories

## Sign-In Sheet

Please print your name. Thank you for attending our meeting.

NAME (please print)
Naomi Davidson
Pam Puissant
Kali Bronson
Brian Salem
Sara Chudnoff
BRENDA LANGKOPF
MIKE SAUNDERS
Ange Suig
Jianjun Liu
John Cochran
Edward Mignardot
John Copland
Clint Am
m. Quaa
Jun Li
Anita Reiser ✓
Ti Anderson
Anastasia Fox
Michael Skelly
Michael M. Mitchell

