SAND2014-20226R

SANDIA REPORT
Printed November 2014

2011 ADDENDUM TO THE SANDIA NATIONAL LABORATORIES/ NEW MEXICO SITE-WIDE ENVIRONMENTAL IMPACT STATEMENT SUPPLEMENTAL INFORMATION SOURCE DOCUMENTS

Ross Dimmick

Prepared by
Sandia National Laboratories
Albuquerque, New Mexico 87185 and Livermore, California 94550

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.

Issued by Sandia National Laboratories, managed and operated for the United States Department of Energy by Sandia Corporation.

Printed November 2014

2011 ADDENDUM TO THE SANDIA NATIONAL LABORATORIES/NEW MEXICO SITE-WIDE ENVIRONMENTAL IMPACT STATEMENT SUPPLEMENTAL INFORMATION SOURCE DOCUMENTS

Ross Dimmick

Environmental Programs Department

Sandia National Laboratories
P.O. Box 5800
Albuquerque, NM 87185-0729

Abstract

This document contains updates to the Supplemental Information Sandia National Laboratories/New Mexico Site-Wide Environmental Impact Statement Source Documents that were developed in 2010. In general, this addendum provides calendar year 2010 data, along with changes or additions to text in the original documents.

This page intentionally left blank.

CONTENTS

ACRONYMS AND ABBREVIATIONS

ACRR	Annular Core Research Reactor
AHCF	Auxiliary Hot Cell Facility
ASER	*Annual Site Environmental Report*
CAP88	*Clean Air Act* Assessment Package-1988
Ci/yr	curies per year
CY	calendar year
DOE	Department of Energy
DSS	drainage septic system
ECF	Explosive Components Facility
EGIS	Environmental Geographic Information System
ELM	Environmental Life-cycle Management
EMS	Environmental Management System
ER	Environmental Restoration
FGIS	Facilities Geographic Information System
FY	fiscal year
GIS	geographic information system
HERMES III	High Energy Radiation Megavolt Electron Source-III
HWMF	Hazardous Waste Management Facility
IBL	Ion Beam Laboratory
KAFB	Kirtland Air Force Base
LLW	low-level waste
LTES	Long-Term Environmental Stewardship
MLLW	mixed low-level waste
MSB	Manzano Storage Bunker (Manzano Storage Area)
MTRU	mixed transuranic

ACRONYMS AND ABBREVIATIONS (continued)

N/A	not applicable
NESHAP	National Emission Standards for Hazardous Air Pollutants
NGPF	Neutron Generator Production Facility
NMED	New Mexico Environment Department
NR	not reported
OAEE	Operational Area Environmental Evaluation
OSHA	Occupational Safety and Health Administration
PCB	polychlorinated biphenyl
RGIS	Resource Geographic Information System
RCRA	*Resource Conservation and Recovery Act*
ROI	region of influence
RMWMF	Radioactive and Mixed Waste Management Facility
RPICL	Radiation Protection Instrumentation Calibration Laboratory
RWNMDD	Radioactive Waste/Nuclear Material Disposition Department
SITS	Safety Incident Tracking System
START	Sandia Tomography and Radionuclide Transport
SNL/CA	Sandia National Laboratories/California
SNL/NM	Sandia National Laboratories/New Mexico
SWEIS	Site-Wide Environmental Impact Statement
TA	Technical Area
TCE	trichloroethene (equivalent to trichloroethylene)
TRU	transuranic
TSCA	*Toxic Substances Control Act*
TSDF	treatment, storage, and disposal facility
WIPP	Waste Isolation Pilot Plant
yr	year

1. INTRODUCTION

The Sandia National Laboratories/New Mexico (SNL/NM) Site-Wide Environmental Impact Statement (SWEIS) Source Document Project, completed in 2010, resulted in a set of documents intended for use in support of future analyses required for a new SWEIS. In addition to historical information, these documents presented the most recent available data at the time of preparation, usually from 2008 or 2009. This 2011 Addendum to the SWEIS Source Documents presents updated data, where available.

This report is presented as an addendum, since most narrative information in the existing SWEIS source documents is current. Most updates are to data, generally to supplement or replace existing data with calendar year (CY) 2010 information. This report emphasizes updates to data compiled on an annual basis.

This document is organized by source document title. In each section, the changes to the existing SWEIS source document are listed by section, paragraph, sentence, or table number.

2. BALANCE OF OPERATIONS

The Balance of Operations Source Document presents information relevant to SWEIS development that is not captured in other Source Documents. Specifically, it covers research and development activities, environmental programs, infrastructure and utilities, maintenance, materials management, and decontamination and demolition.

A review of text in the document indicates that narrative descriptions and data are current. The following new data supplement the text, where indicated:

- Section 4.1.1, last paragraph. Electrical use by SNL/NM in CY2010 was 262,756,200 kilowatt hours (Avery 2011).
- Section 4.3.1, last paragraph. Water use at SNL/NM in CY2010 was 292,622,701 gallons (Gerard 2011).
- Section 4.4.1, last paragraph: replace with the following: Natural gas use at SNL/NM was 436,430,000 standard cubic feet in CY2008, 348,493,000 standard cubic feet in CY2009, and 315,498,035 standard cubic feet in CY2010 (Evans 2010b, Avery 2011). Propane use was 180,530 gallons in CY2008, 181,790 gallons in CY2009, and 181,304 gallons in CY2010 (Evans 2010b; Bultmann 2011).
- Section 7, Table 7-1. Table 7-1 is updated as follows:

Update to information in Table 7-1 of Balance of Operations Source Document

Fiscal Year	Gross Square Feet
2011	16,356
2012	4,673
2013	0
2014	0
2015	41,372
2016	238,575
2017	14,621
2018	0
2019	0
2020	0
2021	0

Source: Chavez 2011

References

Avery, R.P., 2011, E-mail correspondence from Penny Avery (Org. 4143) to Ross Dimmick (Org. 4143), April 11. 2011, RE: Quarterly Fuel and Electric Reports.

Bultmann, M., 2011, E-mail correspondence from Mary Bultmann (Org. 4849) to Ross Dimmick (Org. 4143), July 22. 2011, RE: NG and LPG.

Chavez, L., 2011, E-mail correspondence from Linda Chavez (Org. 4856) to Ross Dimmick (Org. 4143), April 15. 2011, RE: GSF of Planned Demolition at SNL/NM.

Evans, C.A, 2010b, E-mail from Christopher A. Evans (Org. 4853) to Ross Dimmick (Org. 4131), June 24, 2010, Subject: FW: NG and LPG.

Gerard, M.E., 2011, E-mail correspondence from Morgan Gerard (Org. 4143) to Ross Dimmick (Org. 4143), June 28, 2011, RE: Measuring and Monitoring Tracking Spreadsheet.

3. ENVIRONMENTAL GEOGRAPHIC INFORMATION SYSTEM (EGIS)

The EGIS Source Document contains a listing of all Geographic Information System (GIS) data used in the SWEIS Source Document project. This listing includes all layers used in Operational Area Environmental Evaluation (OAEE) maps, as well as layers used in other SWEIS source document maps.

A review of text in the document indicates that the narrative descriptions are current. Section 3.1, Table 3-1, is updated as follows:

Table 3-1. GIS Layers Used in SWEIS Source Documents

GIS Category	Legend Item	Description	Layer Quality	Metadata Quality	Data Origin	Map IDs
Transportation	Road	Edge of pavement/dirt KAFB	High	Med.	FGIS/KAFB	General Use - Numerous
	Albuquerque Roads	Centerline City of Albuquerque	Med.	High	RGIS	General Use - Numerous
	NM Roads	Major NM Roads	Med.	High	RGIS	100093
	Parking	Paved/unpaved parking KAFB	High	Low	FGIS/KAFB	General Use - Numerous
	Road Maintenance	Selected subset from roadeop8	High	Med.	FGIS/EGIS	110297, 100134, 100201, 100146, 100121, 100182
Building/ Structure	Walkway	Sidewalks	High	Low	FGIS/KAFB	General Use - Numerous
	Building	Buildings and structures (includes eligible historic)	High	Low	FGIS/KAFB	General Use - Numerous
	Concrete Slab/Structure	Concrete Pads and small structures on slabs	High	Low	FGIS/KAFB	Numerous
	Fence	Fences -basewide - walls, chainlink, etc.	High	Low	FGIS/KAFB	Numerous
	Gate	Gates – basewide	High	Low	FGIS/KAFB	Numerous
	Stormwater Structures	Built stormwater structures	Med.	Low	FGIS	110116, 110172, 100202, 110179, 100112, 100186
Boundaries	Kirtland AFB Boundary	Installation Boundary (line and polygon layer)	High	High	KAFB	Numerous
	SNL/NM Technical Area	Functionally permitted Technical Area Boundaries	High	Med.	FGIS	Numerous
	Eubank Corridor	Eubank Corridor Permit Boundary	High	High	FGIS/EGIS	100106, 100105
	Thunder Range Extension	Thunder Range Area boundaries	Med.	Med.	EGIS	110111, 110193

Table 3-1. GIS Layers Used in SWEIS Source Documents (Continued)

GIS Category	Legend Item	Description	Layer Quality	Metadata Quality	Data Origin	Map IDs
Boundaries (Continued)	Thunder Range Test Areas	Thunder Range Test Areas	Med.	Med.	EGIS	Not part of OAEE
	Thunder Range Blast Areas	Thunder Range Blast Area locations	Med.	Med.	EGIS	Not part of OAEE
	Albuquerque City boundary	Detailed Albuquerque city limits as of 2006	Med.	High	RGIS	100093, 100092
	NM Town locations	NM town boundary locations	High	High	RGIS	100092
	NM County boundaries	NM county boundaries	High	High	RGIS	100092
	KAFB Future Land Use	KAFB future land use coverage - DRAFT form	Low	Low	KAFB	dh090142o
	SNL/NM Future Land Use	SNL/NM Future land use polygons - generalized draft	Med.	Low	FGIS	dh090142o
	SNL/NM Technical Area (TA)-I Future Plan	SNL/NM Planning Dept. future use of TA-I - draft form	Med.	Low	FGIS	dh090142o
Permits	Resource Conservation and Recovery Act (RCRA) Buffer	RCRA Buffers	Med.	High	EGIS	Not part of OAEE
	Permit Locations	Technical Areas - Various Permit locations	Med.	Med.	EGIS	110108, 100210, 110109, 110192, 100110, 110193
	Permit Locations	Coyote West and East - Various Permit locations	Med.	Med.	EGIS	110178, 100199
	Permits - Land Use	Permit boundaries for KAFB/SNL	Med.	Low	FGIS/KAFB	110104, 110117, 110107

Table 3-1. GIS Layers Used in SWEIS Source Documents (Continued)

GIS Category	Legend Item	Description	Layer Quality	Metadata Quality	Data Origin	Map IDs
Environmental Restoration (ER) Sites	ER Sites	ER Sites with coding for Institutional Controls and confirmatory data dates and data types	High	High	EGIS	Numerous
	DSS Sites	Non-ER Drain and Septic site locations	High	High	EGIS	Numerous
Ecology	Conservation Area West	SNL/NM Conservation Plan Areas	High	High	EGIS	Numerous
	Conservation Area East	SNL/NM Conservation Plan Areas in the Withdrawn Area	High	High	EGIS	Numerous
	Wildlife Guzzlers	Wildlife guzzlers	High	High	EGIS	100132, 100275
	Raptors/Bats	Raptor and bat roost and nest sites	High	High	EGIS	110113, 110190, 100205, 110109, 100132, 100275, 100187, 110193
	Prairie Dog Colony	Prairie Dog Communities	High	High	EGIS	100301, 110108, 110113, 110190, 100187, 110193, 100105, 100106

Table 3-1. GIS Layers Used in SWEIS Source Documents (Continued)

GIS Category	Legend Item	Description	Layer Quality	Metadata Quality	Data Origin	Map IDs
Ecology (Continued)	Vegetation	Basewide vegetation classification	High	High	EGIS	100098
	Ecological zones - Wildlife	Ecological zones - Wildlife	High	High	EGIS	100099
Routine Sampling	Ambient Air/Meteorologic Towers	Meteorologic and Air Sampling towers	Med.	High	EGIS	110168, 100302, 110170, 110173, 100176, 100126, 100188
	Terrestrial Surveillance Locations.	Terrestrial Surveillance sampling locations	High	High	EGIS	100142, 100209, 100178, 100116, 100129, 100192
	Stormwater Monitoring Points	Storm Water Monitoring and Discharge locations	High	High	EGIS	110166, 110172, 100202, 110179, 100112, 100125, 100186
Geology/Soils	Soils	Basewide Soil classification	High	Med.	EGIS	100101
	Major Faults	Major Faults	High	High	EGIS	100100, 100095
	Geology	Exposed bedrock types	High	High	EGIS	100100
	Surface Geology	Surface geology	High	High	EGIS	100100
	Hypsography	40 foot contour intervals	Med.	Med.	EGIS	Numerous
Hydrology	Groundwater Area of Concern	TA-V Groundwater Area of Concern	High	High	EGIS	100110, 110178
	Groundwater Elevation Contour	TA-V Groundwater Elevations contour intervals	High	High	EGIS	100110

Table 3-1. GIS Layers Used in SWEIS Source Documents (Continued)

GIS Category	Legend Item	Description	Layer Quality	Metadata Quality	Data Origin	Map IDs
Hydrology (Continued)	Wells	Wells of all types and ownerships, excluding KAFB.	Med.	Med.	EGIS	Numerous
	Springs	Springs	High	High	EGIS	100123, 110106
	Perched Aquifer	Tijeras Arroyo Groundwater Perched aquifer extent	Med.	High	EGIS	100199, 110106
	Liquid Waste Disposal Site Lagoons	Liquid Waste Disposal Site Lagoon pit/depressions	High	High	EGIS	100110
	Groundwater Area of Concern	Chemical Waste Landfill TCE contamination plume	High	High	EGIS	100210, 110109, 110175
	Burn Site Potentiometric	Burn Site Potentiometric Surface Contours	High	High	EGIS	dh090170a(mxd), 100123
	100-yr Flood Plain	100-Year flood plain	High	Low	EGIS	110106, 110190, 110193, 110192
	500-yr Flood Plain	500-Year flood plain	High	Low	EGIS	110106, 110190, 110193, 110192
	Surface Drainage	Detailed surface water with 6 orders of streams	Med.	Low	EGIS	110106

Table 3-1. GIS Layers Used in SWEIS Source Documents (Concluded)

GIS Category	Legend Item	Description	Layer Quality	Metadata Quality	Data Origin	Map IDs
Hydrology (Continued)	Surface water	General Surface water on and off base in vicinity	High	Low	EGIS	Numerous
	Rio Grande and Rio Puerco	NM River coverage	Med.	Med.	RGIS	100092
	Albuquerque Basin	Albuquerque - Rio Grande Basin	Med.	Low	EGIS	100092
	Watershed basins	Watershed basins for Kirtland Air Force Base	High	Med.	EGIS	110106
Hazards/ Training	TA-III blast/overpressure zone	Restriction zones in TA-III	Med.	Med.	EGIS	110109, 110178, 110193
	Safety Zone	Inhabited Building Distance/Explosive Weight Limit Safety Zones	High	Med.	EGIS	110190, 100275

DSS = drainage septic system
EGIS = Environmental Geographic Information System
ER = Environmental Restoration
FGIS = Facilities Geographic Information System
GIS = Geographic Information System
ID = identification
KAFB = Kirtland Air Force Base
NM = New Mexico
RGIS = Resource Geographic Information System
SNL/NM = Sandia National Laboratories / New Mexico
SWEIS = Site-Wide Environmental Impact Statement
TA = Technical Area
TCE = trichloroethene
yr = year

4. ENVIRONMENTAL MANAGEMENT SYSTEM (EMS)

The EMS Source Document discusses the annual EMS process for analysis of environmental aspects and impacts and also provides the results of the analysis.

A review of text in the document indicates that the narrative descriptions are current with the exception of the following:

- Page 3 (Abstract): change “2010” to “2011”
- Section 2, title: change “FY10” to “FY11”
- Section 2, first paragraph: change “2010” to “2011”
- Section 2.1: replace entire section with the following list:

Land Use
Hazardous Waste
Hazardous Material
Water Discharges
Radioactive Waste
Fire Risk
Material Transportation
Radioactive Material
Air Emissions
Biological Hazards
Resource Use (water, natural gas, electricity)
Personnel Transportation
Solid Waste

5. HEALTH AND SAFETY

The Health and Safety Source Document provides information on the possible human exposure to environmental media potentially contaminated with radiological materials and chemical constituents from operations at SNL/NM.

The Health and Safety Source Document completed in 2010 relied heavily on data supplied in the *CY 2008 Annual Site Environmental Report* (ASER). As of the time of this writing, the CY 2010 ASER is in preparation, with anticipated completion in September 2011. Given the current schedule for SWEIS development, it is anticipated that CY 2010 data will be used as the most recent basis for SWEIS analyses, consistent with other source document revisions. Rather than relying on data from a document that remains in preparation (and could be changed during review), this addendum to the Health and Safety Source Document omits data that will be supplied in the CY 2010 ASER.

The following data supplement and text are revised, as indicated:

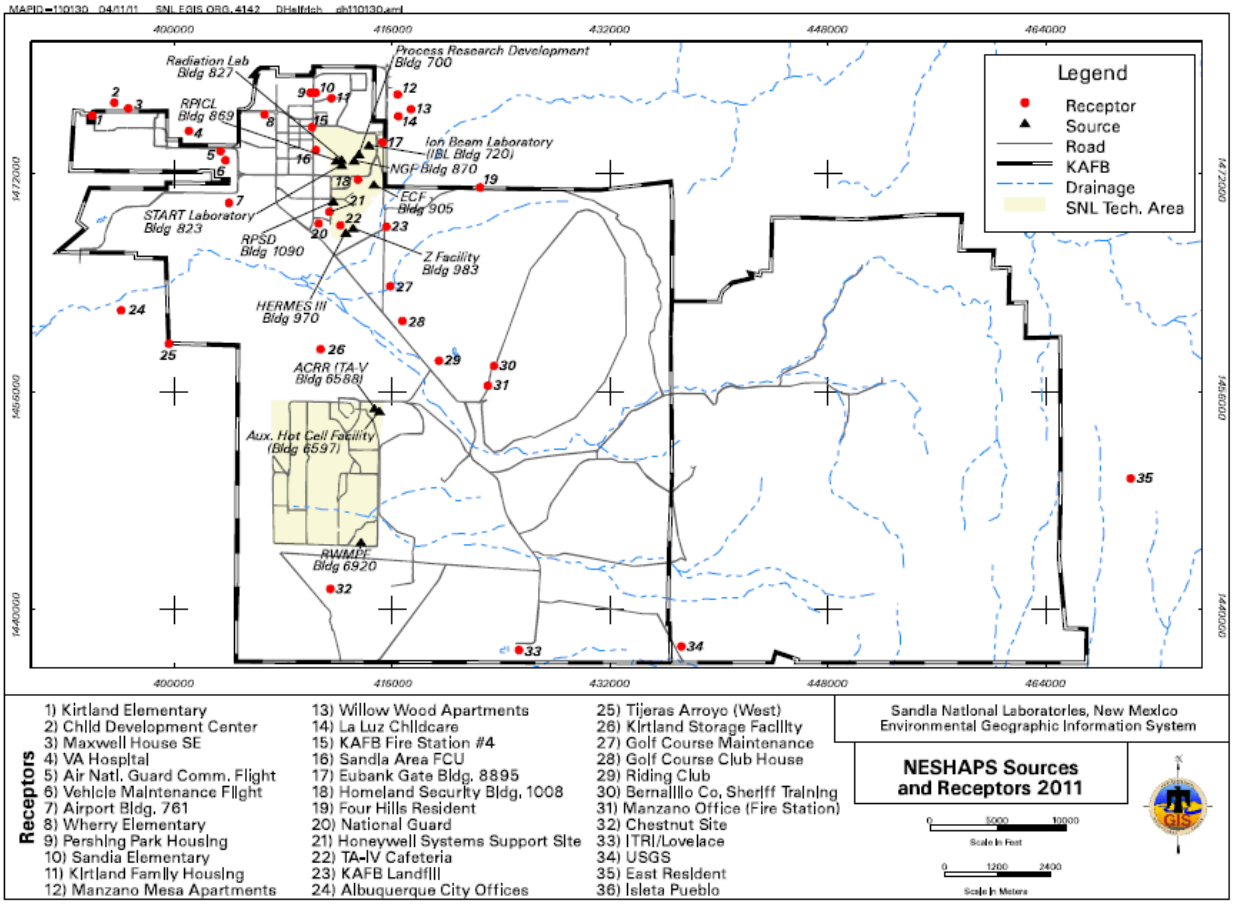
- Throughout document (with the exception of Section 2.1.2): change "2008" to "2010."
- Throughout document: change all references to "SNL/NM 2009a" to "SNL/NM 2011a."
- Section 2.1.1, 3rd paragraph: replace with the following:

To assess compliance, all NESHAP facilities at SNL/NM must submit annual facility emission data to the NESHAP program administrator. The emissions from four "primary" sources (Annular Core Research Reactor [ACRR], Z Facility, Neutron Generator Production Facility [NGPF], and Radioactive and Mixed Waste Management Facility [RMWMF]) are modeled using the EPA's *Clean Air Act* Assessment Package-1988 (CAP88), to estimate the annual dose to each identified public receptor. Primary sources are those that determine their emissions by direct measurements or by calculations based on measured operational parameters (SNL/NM 2011a).

- Section 2.1.1, 5th paragraph: replace with the following:

Currently, there are 11 potential NESHAP facilities that may be defined as either point or diffuse emission sources at SNL/NM, including the four primary facilities identified above, and seven additional secondary sources (SNL/NM 2011a). Figure 2-1 provides the locations of these facilities.

- Replace Figure 2-1 with the following:



Source: SNL/NM 2011a

Figure 2-1. Locations of NESHAP Sources and Receptors

- Section 2.1.1, 8th paragraph: replace with the following:

A total of 36 receptor locations (24 on-site at KAFB, and 12 off-site) at or in the vicinity of SNL/NM have been identified as potential locations of maximum exposure to a member of the public. Figure 2-1 provides the locations of the off-site and on-site receptors used in the NESHAP Program. Off-site receptor locations extend to the Isleta Casino at the Isleta Pueblo Indian Reservation, the Four Hills subdivision north of KAFB, the Manzanita Mountains (with east mountain residents), and areas near the Albuquerque International Sunport west of KAFB. On-site receptors include U.S. Air Force facilities, offices, and housing areas, as well as other non-DOE and non-U.S. Department of Defense facilities on KAFB (SNL/NM 2011a).

- Section 2.1.1, Table 2-2: Table 2-2 is updated as follows:

Table 2-2. Summary of Radionuclide Emissions for Monitored Facilities

Source Name and Location	Description	Source Type	Monitoring Method[a]	Radionuclide Emitted	Reported Release (Ci/yr)
ACRR, TA-V	Reactor used to perform in-pile experiments for severe-reactor-accident research projects.	Point	Periodic	^{41}Ar	4.09
AHCF, TA-V	The AHCF is used to identify, sort, characterize, and repackage legacy nuclear materials and transuranic (TRU) waste packages for permanent removal from the SNL/NM site. Legacy material may include accountable nuclear material, TRU waste, spent nuclear fuel, and radiological material	Point	Periodic	^{60}Co ^{90}Sr ^{134}Cs ^{137}Cs ^{147}Pm ^{154}Eu ^{241}Am ^{238}Pu ^{239}Pu ^{240}Pu ^{241}Pu	2.54E-15 1.34E-10 5.16E-14 4.59E-10 3.26E-12 4.31E-13 5.56E-13 3.26E-12 1.94E-13 1.42E-13 1.12E-11
ECF, TA-II	Facility used for testing neutron-generator design and manufacturing.	Point	Calculation	^{3}H	1.10E-03
HERMES, TA-IV	Gamma simulator used primarily for simulating the effects of prompt radiation from a nuclear burst on electronics and complete military systems.	Point	Periodic	^{13}N ^{15}O	6.18E-04 6.18E-05
IBL, TA-I	Ion solid interaction and defect physics accelerator facility.	Point	Calculation	^{3}H	1.00E-05
NGPF, TA-I	Principal production facility for neutron generators – Tritium Envelope North Wing.	Point	Continuous	^{3}H	9.55
Radiation Laboratory, TA-I	Laboratory that performs small-scale experiments.	Point	Calculation	^{3}H ^{13}N ^{16}N ^{41}Ar	1.0E-05 2.0E-07 2.0E-07 1.0E-09
RMWMF, TA-III	Facility that handles radioactive and mixed waste products.	Point	Continuous	^{3}H (oxide) ^{3}H (elemental) ^{241}Am ^{90}Sr ^{137}Cs	9.52E+00 3.06E+00 1.73E-05 3.55E-07 1.01E-07
RPICL, TA-I	Laboratory that performs radiation detection equipment calibration.	Point	Calculation	^{3}H	1.70E-05
START, TA-I	Small-scale laboratory operation.	Point	Calculation	^{241}Am	5.00E-05
Z Facility, TA-IV	Experimental facility for research on light-ion inertial confinement fusion.	Point	Calculation	^{3}H	1.00E-03

Source: SNL/NM 2011a, Table 1

[a]Monitoring Methods – Periodic = Based on periodic measurements; Calculation = Calculated from known parameters; Continuous= Based on continuous air monitoring results.

ACRR = Annular Core Research Reactor
AHCF = Auxiliary Hot Cell Facility
Ci/yr = curies per year
ECF = Explosive Components Facility
HERMES III = High Energy Radiation Megavolt Electron Source-III
IBL = Ion Beam Laboratory
NGPF = Neutron Generator Production Facility
RMWMF = Radioactive and Mixed Waste Management Facility
RPICL = Radiation Protection Instrumentation Calibration Laboratory
START = Sandia Tomography and Radionuclide Transport
TA = Technical Area

- Section 2.1.3, Figure 2-4: change figure number to 2-2, with corresponding change to figure callout in text.
- Section 2.1.3, Figure 2-5: change figure number to 2-3, with corresponding change to figure callout in text.
- Section 2.2.1, Figure 2-6: change figure number to 2-4, with corresponding change to figure callout in text.
- Section 3.2.1, Table 3-1: Table 3-1 is updated as follows:

Table 3-1. Reported Personal Chemical Exposures at SNL/NM for CY 2010

OSHA101 DATE	Contractor	Body Part	Nature	OSHA Work Related	Days Away	Days Restricted
2/4/2010	Yes	Toe(s)	Notification of Potential Injury/Illness	Yes	0	0
4/29/2010	No	Eye	Respiratory	Yes	0	0
4/29/2010	No	Eye	Respiratory	Yes	0	0
6/23/2010	No	Arm(s)	Dermatitis	Yes	0	0
6/28/2010	No	Arm(s)	Dermatitis	Yes	0	0
7/6/2010	No	Neck	Allergic Reaction	Yes	0	0
8/2/2010	No	Head	Occupational Illness	Yes	0	0
8/3/2010	No	Leg(s)	Irritation	Yes	0	0
10/4/2010	No	Hand	Dermatitis	Yes	0	0

Source: Safety Incident Tracking System (SITS) database
CY = calendar year
OSHA = Occupational Safety and Health Administration
SNL/NM = Sandia National Laboratories/New Mexico

- Section 3.2.2, Table 3-2: Table 3-2 is updated as follows:

Table 3-2. SNL/NM CY 2010 Injury/Illness Rates

Parameter	CY 2010
Total SNL/NM employees, including staff augmentation	10,556
Total hours worked by all employees, including staff augmentation	18,404,774
Fatal Occupational Injuries / Illnesses	
SNL/NM	0
Contractors, including staff augmentation	0
Nonfatal Occupational Injury/Illness Rates (per 100 workers/year [per X hours])	
SNL/NM	1.39
Contractors, including staff augmentation	1.47
Lost Work Day Case Rates (per 100 workers/year [per X hours])	
SNL/NM	0.18
Contractors, including staff augmentation	0.41

Source: Safety Incident Tracking System (SITS) database
CY = calendar year
SNL/NM = Sandia National Laboratories/New Mexico

Reference

Sandia National Laboratories/New Mexico (SNL/NM), 2011a, *NESHAP Annual Report, CY 2010*, Sandia National Laboratories, New Mexico, Albuquerque, New Mexico.

6. LONG-TERM ENVIRONMENTAL STEWARDSHIP (LTES)

The LTES Source Document describes the LTES Program, which is responsible for providing a corporate-wide process for minimizing adverse environmental impacts from SNL/NM operations including new, active, and legacy sites.

A review of text in the document indicates that narrative descriptions are current; however, the name of the LTES Program has been changed to Environmental Life-cycle Management (ELM) Program. All occurrences of LTES should now read ELM. Section 4, Table 1, should be updated for consistency with the CY 2010 ASER, when final, as explained in Section 5, above.

7. MISCELLANEOUS AGREEMENTS

The Miscellaneous Agreements Source Document identifies agreements between the Department of Energy, National Nuclear Security Administration, Sandia Site Office, Sandia Corporation, local and state government agencies, Department of Defense, Kirtland Air Force Base, and other federal agencies relevant to the operation on SNL/NM. The purpose of the document is to provide the SWEIS contractor with information on the sometimes complex relationship between governmental entities so it may be accounted for during SWEIS preparation.

The agreements listed in this document were obtained from the Sandia Site Office at the time of source document preparation. Agreements may be developed, modified, expire, or be cancelled over time. As this document represents a "snapshot in time", it has not been updated. It is assumed that the SWEIS contractor will obtain the most current information from the Sandia Site Office at the time of SWEIS development.

8. OTHER DATA SOURCES

The purpose of the Other Data Sources Source Document is to summarize data sources maintained by Sandia National Laboratories personnel that contain information potentially useful in SWEIS development. In general, these are data sources, such as databases, that are updated frequently and could be queried during SWEIS development.

A review of text in the document indicates that narrative descriptions are current. No additional data sources have been identified.

9. SOCIOECONOMICS

The Socioeconomics Source Document provides information on expenditures and staffing levels at SNL/NM.

A review of text in the document indicates that the narrative descriptions and data are current with the exception of the following:

- Page 3 (Abstract): change the second sentence to the following:

This report is based on the best available information obtained from Sandia Corporation for Fiscal Years 2008, 2009, and 2010, and was prepared in support of future analyses, including those that may be performed as part of the SNL/NM Site-Wide Environmental Impact Statement.

- Section 1: change the fourth sentence to the following:

This report provides available information for FY 2008, 2009, and 2010, and was prepared in support of future environmental analyses, including those that may be performed as part of the SNL/NM Site-Wide Environmental Impact Statement (SWEIS).

- Section 3.1, Table 1: Table 1 is updated as follows:

Table 2. Total Expenditures in Four-County ROI

Category	2008	2009	2010	Project Type[a]
Net Wages/Salaries	$639,185,307	$617,462,241	$651,058,313	Direct Sandia employment
Net Benefits	127,336,046	156,724,870	188,420,659	Direct Sandia employment
Services	192,742,398	201,501,852	190,207,697	"Purchase Order Services"
Trade	82,460,342	73,838,797	74,860,861	"Purchase Order Items"
Taxes	57,786,704	55,987,918	64,471,007	Includes small business tax credits
Construction	16,794,871	28,975,687	21,535,654	"Capital or Construction"
Manufacturing	2,209,699	2,271,107	2,827,112	"Organization 2700" Product Value Stream
Other Sectors	N/A	N/A	N/A	Not queried
Total	**$1,118,515,367**	**$1,136,762,472**	**$1,193,381,303**	

Source: FRS Data Warehouse (Garrison 2011). Sandia Payroll Department query on PeopleSoft records (Berry 2011). Taxes from FRS (Reportville) and New Mexico Gross Receipts Tax work papers (Christ 2011).
[a] Project Types are defined by Sandia's Corporate Financial Reporting and Analysis Department.
N/A = not applicable
ROI = region of influence

- Section 3.1, Table 2: Table 2 is updated as follows:

Table 3. Total Expenditures Outside Four-County ROI, Including SNL/CA and Tonopah

Category	2008	2009	2010	Project Type[a]
Net Wages/Salaries	$137,934,243	$134,103,272	$150,895,414	Direct Sandia employment
Net Benefits	27,478,731	34,038,224	43,679,490	Direct Sandia Employment
Services	343,396,055	284,629,117	303,206,379	"Purchase Order Services"
Trade	207,562,379	183,907,154	190,961,642	"Purchase Order Items"
Taxes	62,516,160	61,589,715	67,026,291	Includes gross receipts taxes and employer-paid taxes (social security, Medicare, unemployment, worker's compensation)
Construction	2,186,256	3,133,265	8,478,639	"Purchase Order Capital or Construction"
Manufacturing	14,052,971	11,207,300	15,877,973	"Purchase Order Organization 2700" Product Value Stream
Other Sectors	N/A	N/A	N/A	Not queried
Total	**$795, 126,795**	**$718,608,047**	**$780,125,828**	

Source: FRS Data Warehouse (Garrison 2011). Sandia Payroll Department query on PeopleSoft records (Berry 2011). Taxes from FRS (Reportville) (Christ 2011).
[a] Project Types are defined by Sandia's Corporate Financial Reporting and Analysis Department.
N/A = not applicable
ROI = region of influence
SNL/CA = Sandia National Laboratories/California

- Section 3.2, Table 3: Table 3 is updated as follows:

Table 4. Net Wages and Salaries in Four-County ROI

County of Residence	2008	2009	2010
Bernalillo	$582,590,701	$564,969,451	$595,800,361
Sandoval	31,896,118	29,082,480	31,199,339
Torrance	1,470,124	1,085,981	965,189
Valencia	23,228,364	22,324,330	23,093,424
Total	**$639,185,307**	**$617,462,242**	**$651,058,313**

Source: Sandia Payroll Department query on PeopleSoft records (Berry 2011)
ROI = region of influence

- Section 3.2, Table 4: Table 4 is updated as follows:

Table 5. Net Benefits in Four-County ROI

County of Residence	2008	2009	2010
Bernalillo	$116,061,485	$143,401,099	$172,428,636
Sandoval	6,354,222	7,381,743	9,029,299
Torrance	292,872	275,644	279,332
Valencia	4,627,466	5,666,383	6,683,392
Total	**$127,336,045**	**$156,724,869**	**$188,420,659**

Data Source: Sandia Payroll Department query on PeopleSoft records (Berry 2011)
ROI = region of influence

- Section 3.3, Table 5: Table 5 is updated as follows:

Table 6. Direct Sandia Employment in ROI and New Mexico

County of Residence	End of 2008	End of 2009	End of 2010
Bernalillo	6,965	6,791	7,061
Sandoval	381	350	370
Torrance	18	13	11
Valencia	278	268	274
Other New Mexico	273	269	270
Total SNL/NM	**7,915**	**7,691**	**7,986**

Source: Sandia Payroll Department query on PeopleSoft records (Berry 2011)
ROI = region of influence

- Section 3.3, Table 6: Table 6 is updated as follows:

Table 7. Staff Augmentation Employment in ROI and New Mexico

County of Residence	End of 2008	End of 2009	End of 2010
Bernalillo	1,016	1,123	1,079
Sandoval	56	58	56
Torrance	3	2	2
Valencia	40	44	42
Other New Mexico	40	45	41
Total SNL/NM	**1,154**	**1,272**	**1,220**

Source: New Mexico Staff Augmentation data from human resources queries and Limon (2011). Individual county numbers estimated by proportional spread based on direct full-time equivalent data (Berry 2011).
ROI = region of influence

References

Berry, D., 2011, E-mail correspondence from Daniel Berry (Org. 10502) to Aaron Lobato (Org. 10544), March 21, 2011, RE: Socioeconomic Data Request for 2010.

Christ, H.J., 2011, E-mail correspondence from Heather J. Christ (Org. 10501) to Aaron Lobato (Org. 10544), March 28, 2011, RE: Socioeconomic Data Request for 2010.

Garrison, S.D., 2011, E-mail correspondence from Stanley D. Garrison (Org. 9543) to Aaron Lobato (Org. 10544), March 21, 2011, RE: Socioeconomic Data Request for 2010.

Limon, E.V., 2011, E-mail correspondence from Ernie V. Limon (Org. 10545) to Aaron Lobato (Org. 10544), March 28, 2011, RE: Socioeconomic Data Request for 2010.

Lobato, A.J., 2011, E-mail correspondence from Aaron J. Lobato (Org. 10544) to Ross Dimmick (Org. 4143), April 11, 2011, FW: SWEIS Socioeconomics Data Request for 2010.

10. WASTE MANAGEMENT

The Waste Management Source Document presents information about waste management practices at SNL/NM, including definitions, inventory data, and an overview of current activities. Some historical information is also included, particularly with respect to volumes of waste managed at SNL/NM.

A review of text in the document indicates that the narrative descriptions and data are current with the exception of the following:

- Throughout document: change references for NMED 2004a to NMED 2010, NMED 2009a to NMED 2011a, NMED 2009b to NMED 2011b, SNL/NM 2009a to SNL/NM 2010a, SNL/NM 2009b to SNL/NM 2010b, and SNL/NM 2010 to SNL/NM 2011.
- Section 2.1, paragraph 3: change paragraph to:

Most of the waste management facilities at SNL/NM are operated by members of two departments: Regulated Waste and Pollution Prevention, and Radioactive Waste/Nuclear Material Disposition Department (RWNMDD) with the following common mission statement (2009):

- Section 3.2 (heading): change heading to "Waste Generation and Waste Quantities (2000 to 2010). Also, change 1st sentence first paragraph to "This section presents historical data for Calendar Year (CY) 2000 through CY 2010."
- Section 3.2.1, 1st paragraph, 2nd sentence: change CY 1999 and CY 2009 to CY 2000 and CY 2010, respectively.
- Section 3.2.1, 3rd paragraph, 1st sentence: change to "The total hazardous waste quantity of all hazardous waste codes specified in Permit NM5890110518-1 (NMED 2011a) is 596,325 kg per year."
- Section 3.2.1, Table 3-1: Table 3-1 is updated as follows (footnotes remain the same):

Table 3-1. Chemical Waste Generated at SNL/NM – CY 2000 to CY 2010

Accepted at HWMF	RCRA[a]		TSCA[a,d]		Other Chemical Waste[a,e]	
	Routine[b]	Non-Routine[c]	Routine[b]	Non-Routine[c]	Routine[b]	Non-Routine[c]
2000	27,541	36,248	491	31,590	Not available	Not available
2001	24,867	23,044	15	3,816	Not available	Not available
2002	25,375	6,117	0	2,752	Not available	Not available
2003	38,447	209,361	8	6,224	Not available	Not available
2004	241,597	8	NA	13,524	479,143	251,754
2005	214,410	336,045	NA	6,461	316,239	351,976
2006	71,693	1,066	NA	73,086	616,402	209,737
2007	55,143	547	NA	9,013	271,332	77,146
2008	45,372	555	NA	7,800	259,478	158,330
2009	77,166	378	NA	1,959	167,731	185,672
2010	44,671	174	NA	663	250,645	17,253

- Section 3.2.2, 1st paragraph, 2nd sentence: change to "Table 3-2 summarizes data for both non-routine and routine radioactive waste generated during CY 2000 to CY 2010, including both low-level and TRU wastes."

- Section 3.2.2, Table 3-2. Table 3-2 is updated as follows:

Table 3-2. Radioactive Waste Generated at SNL/NM – CY 2000 to CY 2010

Radioactive Waste Generated	Routine LLW and TRU Waste [a,b]	Non-Routine LLW and TRU Waste [a,c]	Routine MLLW and MTRU Waste [a,b]	Non-Routine MLLW and MTRU Waste [a,c]
2000	353	10,936	4	1,114
2001	3,490	283,229	849	10,611
2002	4,594	15,063	1,100	1,565
2003	3,326	40,715	1,169	8,887
2004	6,510	36,936	6,591	93,921
2005	4,732	29,458	280	65,746
2006	5,338	11,512	925	8,651
2007	2,670	16,349	437	3,787
2008	5,154	8,545	1,201	4,406
2009	4,851	1,124	1,008	668
2010	2,494	6,136	1,398	4,025

[a]All quantities are in kilograms
[b]Routine waste is generated from ongoing laboratory operations.
[c]Non-routine waste is generated by Environmental Restoration Project, Decontamination and Decommissioning Projects, and other cleanup activities.
CY = calendar year
LLW = low-level waste
MLLW = mixed low-level waste
TRU = transuranic
MTRU = mixed transuranic
SNL/NM = Sandia National Laboratories/New Mexico

- Section 3.2.2, last paragraph: change "May 2010" to "April 2011."
- Section 4.2.4, 1st paragraph (after Permits): change paragraph to:

The Auxiliary Hot Cell Facility (AHCF) is used for characterization, treatment (if necessary), repackaging, and storage of LLW, TRU waste, mixed waste, and radioactive materials that cannot be managed at the RMWMF. Wastes may be stored until off-site TSDFs are identified that can accept the waste. The AHCF started operations in late 2010 and is currently repackaging TRU waste in compliance with applicable requirements of federal, state, and local environmental regulations, DOE directives, and off-site waste acceptance criteria. In addition, the facility operations facilitate preparation of waste for shipment for treatment and disposal in accordance with specific requirements regarding waste certification, packaging, and transport.

- Section 4.2.4, 3rd and 4th paragraphs: change paragraphs to:

The mid bay is used for general staging of materials and the low bay is not planned to be used. The high bay is equipped with a series of floor trenches that will serve to collect water from fire-fighting activities. Liquids will be stored within portable secondary containment; the floor trenches will not be used to provide containment during normal operations (SNL/NM 2010a).

Operations are conducted on a "campaign" basis. Table 4-6 presents the storage capacities of the AHCF, and Table 4-7 presents the treatment capacities for the AHCF.

- Section 6.2, Table 6-3: Table 6-3 is updated as follows:

Table 6-3. Summary of Chemical Waste Shipped from SNL/NM

Waste Shipped by Category[a]	2005[b]	2006[b]	2007[b]	2008[b]	2009[b]	2010[b]
RCRA Waste						

Hazardous waste	117,935	84,923	62,044	94,570	59,712	51,181
Hazardous waste (generated by ER Project)	446,016	5,721	0	4	0	0
Hazardous waste (recycled)	4,955	NR	4,380	3,682	2,492	3,212
Total	568,906	90,644	66,424	98,256	62,204	54,393
TSCA Waste						
PCB (recycled)	4,829	2,327	4,309	9,337	1,948	615
PCB	2,210	53,563	0	3,375	154	132
PCB/hazardous waste mixture	939	634	3	17	4	80
Total	7,978	56,524	4,312	12,729	2,106	826
Other Chemical Waste[c]						
Infectious Waste	699	564	600	573	330	391
Asbestos	173,004	154,900	67,308	161,456	156,943	300,308
Used Oil	37,897	6,384	13,882	5,373	1,883	242,826
Other Chemical Waste	328,630	635,579	210,655	209,457	129,963	0
Other chemical waste (generated by ER Project)	36,951	7	0	0	0	2,568
Other (recycled) – various batteries, fluorescent lamps, and non-PCB ballasts, capacitors, and oils	73,763	79,458	56,732	61,631	41,941	346
Total	650,944	876,892	349,177	438,490	331,060	45,461
Total Waste and Recyclables Shipped	1,227,828	1,024,060	419,913	549,475	395,370	591,901

[a]Values are in kilograms

[b]Source: Adapted from SNL/NM Annual Site Environmental Reports (SNL/NM 2006, 2007, 2008, 2009d, 2010c) and Schade 2011

[c]Chemical waste includes special waste and industrial solid waste

ER = Environmental Restoration

NR = not reported

PCB = polychlorinated biphenyl

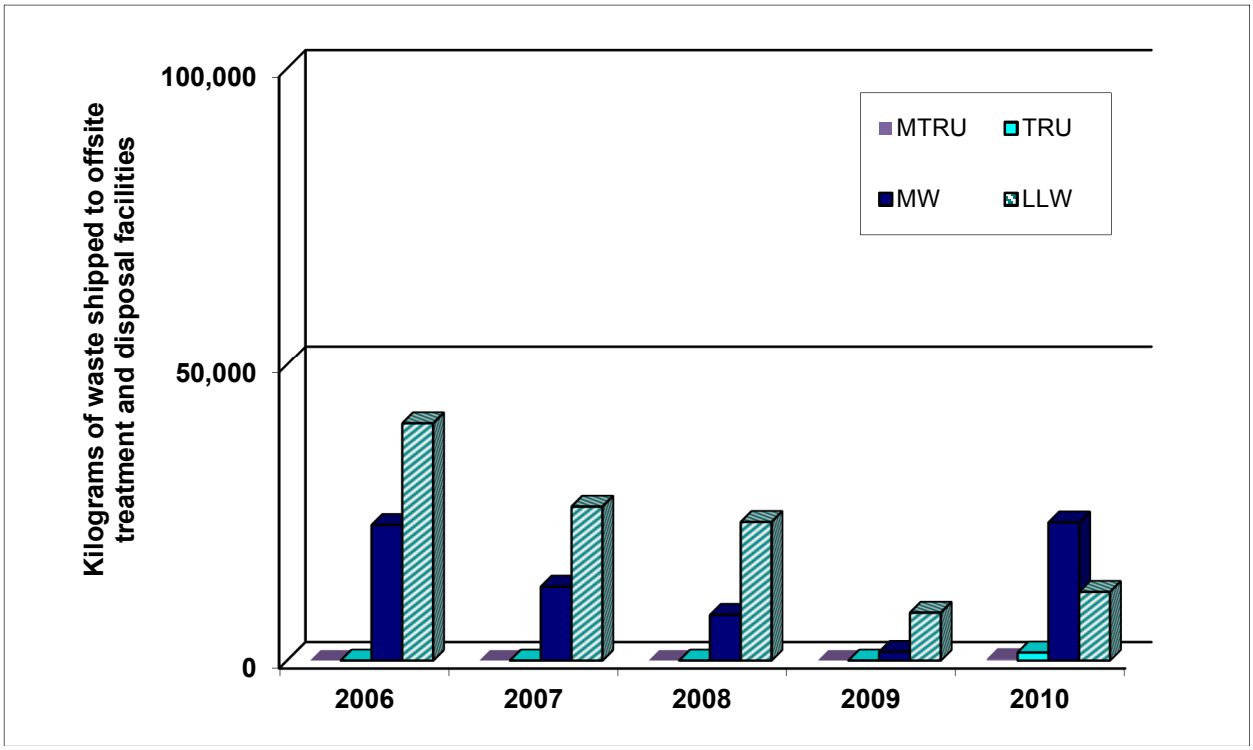
RCRA = *Resource Conservation and Recovery Act*

SNL/NM = Sandia National Laboratories/New Mexico

TSCA = *Toxic Substances Control Act* (primarily regulates asbestos and PCBs)

- Section 6.2, Figure 6-1: Figure 6-1 is updated as follows:

Figure 6-1. Five-Year Summary of Total Radioactive Waste Shipped by SNL/NM



- Section 7.1, 2nd paragraph: delete reference to SNL 2009b.
- Section 7.3, 2nd paragraph: change paragraph to:

At this time, several containers of legacy TRU waste from SNL/NM have been transported to the Idaho National Laboratory for certification and shipment to the WIPP. Approximately sixty containers of TRU waste are currently stored at SNL/NM; these include containers of TRU wastes that were generated at the DOE Inhalation Toxicology Research Institute.

- Appendix A, Table A-1: Table A-1 is updated as follows:

Table A-1. Radioactive and Mixed Waste Inventory[a]

Location	Quantity of Waste[b]											
	TRU Waste			MTRU Waste			LLW			MLLW		
			Total			Total			Total			Total
MSB 37034			1,866			0			151			331
MSB 37045			5,105			0			101			0
MSB 37055			331			0			0			0
MSB 37057			4			0			7,077			0
MSB 37063			4,189			N/A			13,228			N/A
MSB 37078			866			N/A			5,089			N/A
MSB 37118			1,874			0			162			2,557
RMWMF			4,828			131			45,403			18,447
Other[c]			9,347			N/A			N/A			N/A
Totals			***28,410***			***131***			***71,212***			***21,335***

[a]All data are for April 13, 2011
[b]All quantities are in kilograms
[c]On April 13, 2011, thirteen containers of TRU waste were located at another facility for repackaging in accordance with the Waste Isolation Pilot Plan Waste Acceptance Criteria.
LLW = low-level waste
MLLW = mixed LLW
MSB = Manzano Storage Bunker (Manzano Storage Area)
MTRU = mixed transuranic
N/A = not applicable
RMWMF = Radioactive and Mixed Waste Management Facility
TRU = transuranic

References

Moore, M. (Weston Solutions), 2011, Personal communication regarding radioactive and mixed waste information.

New Mexico Environment Department (NMED), 2010, Federal Facility Compliance Order (Sandia National Laboratories/New Mexico). Issued by New Mexico Environment Department, Santa Fe, NM, October 4, 1995 (amended December 22, 2010).

New Mexico Environment Department (NMED), 2011a, Hazardous Waste Facility Permit NM5890110581-1. Issued by New Mexico Environment Department, Santa Fe, NM, August 1992 (updated April 4, 2011).

New Mexico Environment Department (NMED), 2011b, Hazardous Waste Treatment Facility Permit NM5890110581-2. Issued by New Mexico Environment Department, Santa Fe, NM, November 1994 (updated March 18, 2011).

Sandia National Laboratories/New Mexico (SNL/NM), 2010a, Comprehensive Part B Permit Request – Volume I–Overview, Part 1: General Part A Permit Request, Part 2: Part B for Waste Management Units, Modules I through VI (Hazardous Waste Management Unit, Thermal Treatment Facility, Radioactive and Mixed Waste Management Facility, Reserved, Auxiliary Hot Cell Facility, Manzano Storage Bunkers). Sandia National Laboratories, Albuquerque, NM, submitted February 6, 2002, to the New Mexico Environment Department, Santa Fe, NM (updated November 19, 2010).

Sandia National Laboratories/New Mexico (SNL/NM), 2010b, Sandia National Laboratories Mixed Waste Site Treatment Plan of the Federal Facility Compliance Order, Site Treatment Plan for Mixed Waste, Fiscal Year 2009 Update. Sandia National Laboratories, Albuquerque, NM, March 31,2010.

Sandia National Laboratories/New Mexico (SNL/NM), 2010c, Calendar Year 2009 Annual Site Environmental Report for Sandia National Laboratories, New Mexico, SAND2010-5349P. Sandia National Laboratories, Albuquerque, NM, September.

Sandia National Laboratories/New Mexico (SNL/NM), 2011, Long-Term Stewardship/Long-Term Environmental Stewardship Institutional Controls Strategy Plan. Sandia National Laboratories, Albuquerque, NM, in preparation.

Schade, A.C. (Sandia National Laboratories), 2011, Personal communication regarding waste information.

11. AUTHORIZATION BASIS

Authorization basis is the safety documentation that supports the decision to allow a process or facility to operate. Included in the safety documentation are corporate operations and environmental requirements as found in regulations and specific permits, and, for specific activities, work packages or job safety analyses. The safety basis is considered a subset of the authorization basis.

Safety documentation is updated as operational and facility changes occur. As this document represents a "snapshot in time", it has not been updated. It is assumed that the SWEIS contractor will obtain the most current information from SNL/NM at the time of SWEIS development. The only substantial operational change not reflected in the existing Authorization Basis Source Document is that the Auxiliary Hot Cell Facility is now operational.

This page intentionally left blank.

DISTRIBUTION

(Electronic Copies)

U.S. Department of Energy

U.S. Department of Energy/NNSA
Sandia Site Office (SSO)
Office of Environment, Safety and Health
P.O. Box 5400, MS 0184
Albuquerque, NM 87185-5400

MS 0184	Lacy, Susan
MS 0184	Norte, Jeanette

Sandia National Laboratories/New Mexico

Mail Stop	Name	Department
MS 0729	Bailey-White, Brenda	4143
MS 0141	Blumberg, Amy	11100
MS 0729	Bonaguidi, Joseph	4143
MS 0729	Cooper, Terry	4143
MS 0729	Dimmick, Ross	4143
MS 0730	Griffith, Stacy	4143
MS 1043	Mayeux, Lucie	4135
MS 0725	Nimick, Francis	4140
MS 0729	Teel, John	4143
MS 0899	Technical Library	9536
MS 0651	Customer Funded Record Center	9532

This page intentionally left blank.