Department of Energy

West Valley Demonstration Project
10282 Rock Springs Road
West Valley, NY 14171-9799

June 28, 2006

Dear Stakeholder:

The U. S. Department of Energy (DOE) at the West Valley Demonstration Project (WVDP) is announcing the release of the Draft Environmental Assessment (EA) for the Decontamination, Demolition, and Removal of Various Facilities at the West Valley Demonstration Project (DOE/EA-1552). This assessment evaluates the potential environmental impacts of demolishing and removing a set of structures and other facilities which have been or are currently used by the WVDP that, because of their design, function, and lack of significant source term, are not expected, either individually or collectively, to affect whether the decommissioning criteria for the site could be met. A copy of the Draft EA is enclosed.

DOE is responsible for the disposition of these facilities in accordance with the West Valley Demonstration Project Act (1980). Alternatives for the long-term management of major site facilities with significant levels of contamination are being evaluated in an Environmental Impact Statement (EIS) that is under development. The facilities which are the subject of this EA are smaller and are either free of contamination or contamination is limited in extent and/or amount.

An official public comment period for the EA will begin on June 29, 2006. Written comments can be sent to WVDP EA Comments, 10282 Rock Springs Road, West Valley, New York, 14171-9799 and should be submitted by July 13, 2006. Comments received after that date will be considered to the extent practical.

DOE will also hold a public comment session on July 12, 2006, to provide interested individuals and organizations the opportunity to provide oral comments on the Draft EA. This public

Draft Environmental Assessment for the
Decontamination, Demolition, and Removal of Various Facilities at the WVDP
DOE/EA-1552

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Decontamination, Demolition, and Removal of Various Facilities at the WVDP
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Decontamination, Demolition, and Removal of Various Facilities at the WVDP
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DOE/EA-1552

Environmental Assessment for the Decontamination, Demolition, and Removal of Various Facilities at the West Valley Demonstration Project

Draft

U.S. Department of Energy
West Valley Area Office
West Valley, New York

June 26, 2006

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List of Acronyms and Abbreviations

ALARA	as low as reasonably achievable
CAIRS	Computerized Accident/Incident Reporting System
CFR	Code of Federal Regulations
dBA	A-weighted decibel
DOE	U.S. Department of Energy
DOT	U.S. Department of Transportation
EA	environmental assessment
EIS	environmental impact statement
EPA	U.S. Environmental Protection Agency
ERPG	Emergency Response Planning Guideline
F	Fahrenheit
FONSI	Finding of No Significant Impact

CHAPTER 1 INTRODUCTION AND PURPOSE AND NEED FOR AGENCY ACTION

1.1 Overview

As part of its ongoing West Valley Demonstration Project (WVDP) responsibilities and in accordance with the West Valley Demonstration Project Act (Public Law 96-368, October 1, 1980), the U.S. Department of Energy (DOE) proposes to demolish and remove 42 unneeded and unused buildings and other structures at the WVDP in West Valley, New York.[1] DOE would develop a logically sequenced dismantlement plan to ensure that site services and functions remained available until no longer needed. DOE would decontaminate any facilities as needed. Industrial, hazardous, and radioactive waste resulting from decontamination and demolition would be transported off-site for disposal at licensed commercial or DOE disposal facilities.

DOE has prepared this draft environmental assessment (EA) in accordance with the National Environmental Policy Act (NEPA) (42 United States Code [U.S.C.] §§ 4321 *et seq.*) and applicable Council on Environmental Quality requirements at Title 40 Code of Federal Regulations (CFR), including Part 1506.1, to determine whether the environmental impacts of the proposal may be significant. The draft EA is being circulated for review and comment to the State of New York and other interested stakeholders. After reviewing and considering any comments received, DOE will issue a final EA, along with a Finding of No Significant Impact (FONSI), if applicable. Otherwise, this action will be included in the scope of the *Decommissioning and/or Long-Term Stewardship Environmental Impact Statement* (DOE/EIS-0226-R) (Decommissioning EIS), which is currently in preparation (see Section 1.2).

1.2 West Valley Demonstration Project

The Western New York Nuclear Service Center (WNYNSC or the Center) encompasses 14 square kilometers (5 square miles) in West Valley, New York, in rural Cattaraugus County, approximately 50 kilometers (30 miles) southeast of Buffalo, New York. The WNYNSC was once a commercial nuclear fuel reprocessing plant and was the only one to have operated in the United States. Figure 1 shows the locations of the Center and the WVDP site within the State of New York (USGS 1979).

The Center operated under a license issued by the Atomic Energy Commission (now the Nuclear Regulatory Commission [NRC]) in 1966 to Nuclear Fuel Services, Inc. (NFS) and the New York State Atomic and Space Development Authority, now known as the New York State Energy Research and Development Authority (NYSERDA) (AEC 1966). Under the Energy Reorganization Act of 1974, the regulatory functions of the Atomic Energy Commission were given to the NRC, which became the licensing authority for the Center's operation.

[1] Some of the buildings are currently being used to store low-level radioactive waste. This waste is being shipped offsite in accordance with DOE's Record of Decision for the *West Valley Demonstration Project Waste Management Environmental Impact Statement* (DOE/EIS-0337) (DOE 2003) (WVDP WM EIS). When the shipments are complete, the buildings will be empty and ready for decontamination (if needed), demolition, and removal from the WVDP site. The proposed decontamination, demolition, and removal of the 42 buildings and the resulting waste volumes were not included in the scope of the WVDP WM EIS or in the *Supplement Analysis for the West Valley Demonstration Project Waste Management Environmental Impact Statement* (DOE/EIS-0337-SA-01) (DOE 2006) issued after the Record of Decision (70 FR 35073, June 16, 2005

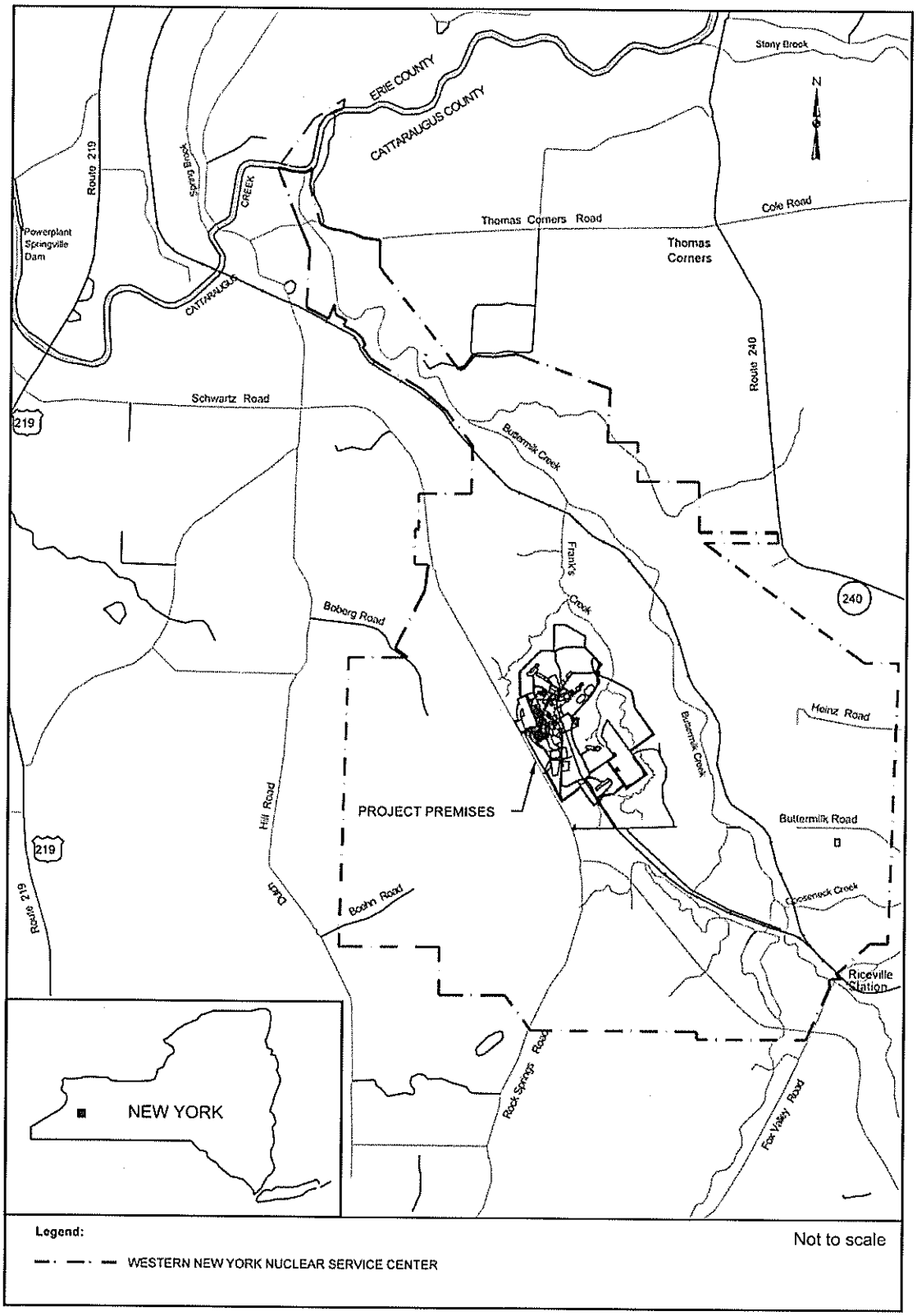


Figure 1. Location of the West Valley Demonstration Project and Western New York Nuclear Service Center (WNYNSC)

During reprocessing, spent nuclear fuel was chopped, dissolved, and processed by a solvent extraction system to recover uranium and plutonium. Fuel reprocessing ended in 1972 when the plant was shut down for modifications to increase its capacity, reduce occupational radiation exposure, and reduce radioactive effluents. At the time, NFS, the owner and operator of the reprocessing plant, expected that the modifications would take 2 years and $15 million to complete. However, between 1972 and 1976, there were major changes in regulatory requirements, including more stringent seismic and tornado siting criteria for nuclear facilities and more extensive regulations for radioactive waste management, radiation

The WVDP (or the Project) was established to implement the West Valley Demonstration Project Act. The WVDP is located on approximately 80 hectares (200 acres) within the WNYNSC. The Project includes the former NFS plant and related facilities. Several additional buildings and facilities were constructed to complete the WVDP mission. In addition to the WVDP facilities, the WNYNSC includes two former radioactive disposal areas: an NRC-Licensed Disposal Area (NDA) within the Project premises, and a State of New York-Licensed Disposal Area (SDA), which is not within the Project premises. Figure 2 shows the Project Premises, NDA, and SDA.

In 2002 and in accordance with the West Valley Demonstration Project Act, NRC issued its final policy statement regarding West Valley site decommissioning. The NRC criteria are based on radiological doses to members of the most affected population and are intended to protect public health and safety. DOE also has an obligation, under a Stipulation of Compromise with the Coalition on West Valley Nuclear Wastes and Radioactive Waste Campaign, to prepare a site closure EIS in accordance with NEPA. Before NYSERDA's license for the site could be terminated (assuming it would be reactivated) in order to close the site, the NRC decommissioning criteria must be met.

Accordingly, DOE is jointly preparing, with NYSERDA, the Decommissioning EIS specifically focused on alternatives for decommissioning the site and identifying potential needs for long-term stewardship there. That is, the EIS will evaluate the range of reasonable alternative strategies for meeting the NRC radiological decommissioning criteria as the primary condition for eventual site closure, as well as potential needs for long-term stewardship at the site.

This EA evaluates the potential environmental impacts of demolishing and removing a set of structures

and other facilities which have been or are currently used by the WVDP that, because of their design, function, and lack of significant source term, are not expected, either individually or collectively, to affect whether the decommissioning criteria for the site could be met. DOE estimates that the total radiological

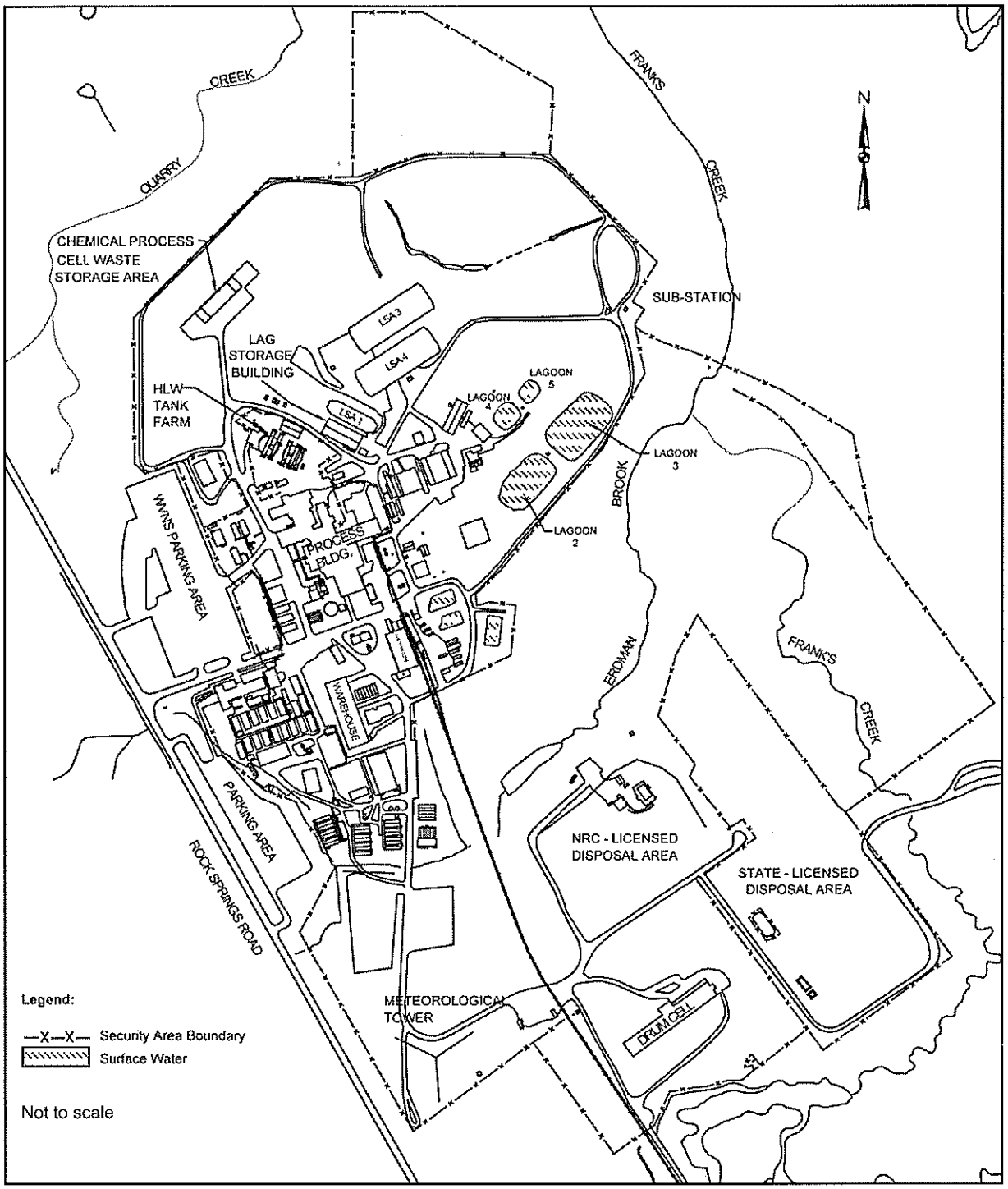


Figure 2. WVDP Site Map (Project Premises)

CHAPTER 2 PROPOSED ACTION AND ALTERNATIVES

This section describes DOE's Proposed Action, which would, for purposes of analysis, occur over an estimated 4-year period (through December 31, 2010). It also discusses the No Action Alternative and alternatives considered but not analyzed.

2.1 Proposed Action

Under the Proposed Action, DOE would demolish and remove the 42 facilities (buildings and other structures) at WVDP listed in Table 1. Although some of the facilities are currently in use, DOE needs to eliminate or significantly reduce the functions that are undertaken in those facilities over the next 4 years. Replacement of any remaining functions could require minor modifications of existing facilities but no new construction. Other functions would be taken over by off-site vendors or facilities with adequate capacity. Once the on-site functions were replaced or were no longer needed by WVDP, DOE would demolish and remove the facilities from the site. DOE would develop a logically sequenced dismantlement plan to ensure that site services and functions remained available until no longer needed. Table 2 identifies the facilities for which functions would need to be replaced. Facilities that remain at the end of the 4-year period would be safely maintained, operated, and monitored, as appropriate.

Some of the facilities proposed for demolition and removal are permitted under the Resource Conservation and Recovery Act (RCRA) or have interim status under RCRA as Hazardous Waste Management Units. Many are Solid Waste Management Units. For those facilities that contain residual radioactive contamination, DOE would decontaminate them as needed in accordance with site procedures.[3] Industrial waste (including concrete), asbestos, hazardous waste, Class A low-level radioactive waste (LLW), and mixed LLW (radioactive waste that also contains hazardous components) would be generated as a result of decontamination and demolition. No other waste types would be generated. As noted above, these waste volumes were not included in the *West Valley Demonstration Project Waste Management Environmental Impact Statement* (WVDP WM EIS) (DOE/EIS-0337) (DOE 2003) or in the *Supplement Analysis for the West Valley Demonstration Project Waste Management Environmental Impact Statement* (DOE/EIS-0337-SA-01) (DOE 2006).

Table 1 lists the facilities proposed for demolition and removal and provides information regarding their Waste Management Area (WMA) location, construction type, size, regulatory status, and the estimated volume of waste that would be generated. Waste volume estimates in Table 1 are based on prior radiological characterization, process knowledge, screening data, and DOE's 25 years of experience at the WVDP. The waste volume estimates include radioactive waste that would be generated as a result of decontamination activities; the waste volumes for Class A, hazardous, and industrial waste also include any contaminated soil that would be removed (e.g., live fire range soil). Appendix A contains a general description of the facilities; Appendix B contains a detailed WVDP facility map and facility name crosswalk that includes the facilities covered by the Proposed Action. Figures 3 and 4 show the 12 WMAs in which the facilities are located.

[3] Removal of all foundations and pads of facilities located in areas where underground contamination is likely to be encountered will be considered as part of the Decommissioning EIS.

Proposed for Demolition and Removal

× ries	Regulatory Status	Volume of Waste (ft^3)					
		Class A LLW	Mixed LLW	Asbestos	Hazardous	Industrial	Concrete Slab[a]
00	NA	0	0	70	0	28,600	
080	NA	0	0	0	0	0	3,800
000	HWMU SWMU	100	40	0	0	4,000	
14	NA	0	0	0	0	46,442	
70	HWMU	10,000	2,435	0	0	0	
4	NA	0	0	0	20	3,000	
86	NA	0	0	0	0	9,000	
	SWMU	0	0	0	0	5,000	
	NA	0	0	0	0	0	
00	NA	0	0	0	0	27,200	
000	NA	0	0	1	20	40,040	
2	HWMU SWMU	0	0	0	0	1,500	
	NA	0	0	0	0	0	(wells)
92	HWMU SWMU	100	40	0	40	6,296	
00	HWMU SWMU	100	40	0	0	5,000	
00	HWMU SWMU	100	40	0	0	100	
00	HWMU SWMU	100	40	0	0	50,000	
00	HWMU SWMU	16,750	40	0	20	66,000	

Table 1. Facilities Proposed for Demolition and Removal (cont'd)

Facility	WMA	Construction Type	Footprint (ft^2)	Stories	Ft^2 × Stories	Regulatory Status	Volume of Waste (ft^3)					
							Class A LLW	Mixed LLW	Asbestos	Hazardous	Industrial	Concrete Slab[a]
Lag Storage Bldg.	5	Metal	8,400	1	8,400	HWMU SWMU	100	40	0	0	20,000	
Laundry Room	1	Concrete	1,456	2	2,912	NA	6,824	0	33	0	25,000	
Live Fire Range	12	Wood with Soil	40,000	1	40,000	NA	0	0	0	70,000	500	
Lube Storage Locker	2	Prefab	324	1	324	NA	0	0	0	0	1,000	
Maintenance Shop	2	Metal	6,000	2	12,000	SWMU	0	0	0	100	47,000	
Maintenance Storage Area	2	Metal	2,860	2	5,720	NA	0	0	0	0	11,500	
MSM Repair Shop	1	Concrete and Steel	3,195	1	3,195	NA	8,000	0	0	0	0	
NDA Hardstand	7	Cinder block and crushed rock	400	1	400	SWMU	1,100	0	0	0	0	
New Cooling Tower	6	Metal and concrete	1,000	1	1,000	NA		0	0	0	8,300	
Slab[b]							6,800					
New (Main-2) Warehouse	10	Steel	20,000	3	60,000	SWMU*	0	0	0	0	65,000	
O2 Bldg.	2	Concrete and Steel	9,600	3	28,800	SWMU	29,000	40	100	0	0	
Slab[b]							4,000					
Old Warehouse	6	Steel	12,150	2	24,300	NA	0	0	0	50	42,150	
Old Sewage Treatment Facility	6	Concrete pit	225	0	0	SWMU	0	0	0	0	0	600
Radwaste Process (Hittman) Bldg.	1	Steel	800	2	1,600	SWMU	5,160	0	0	0	0	
Slab[b]							3,000					
RTS Drum Cell	9	Metal and Concrete	22,500	3	67,500	SWMU	200	0	0	0	58,000	
Recirculation Vent System Bldg.	1	Metal	1,050	1	1,050	NA	520	0	100	10	6,000	

Table 1. Facilities Proposed for Demolition and Removal (cont'd)

MA	Construction Type	Footprint (ft^2)	Stories	Ft^2 × Stories	Regulatory Status	Volume of Waste (ft^3)					
						Class A LLW	Mixed LLW	Asbestos	Hazardous	Industrial	Concrete Slab[a]
	Steel and Wood	686	2	1,372	NA	0	0	0	0	1,000	
2	Wood	760	1	760	SWMU	0	0	0	20	5,380	200
	Wood and Metal	1,640	1	1,640	SPDES	0	0	0	0	13,500	
	Metal and Wood	9,600	2	19,200	SWMU	0	0	0	100	43,600	
	Metal	1,410	2	2,820	NA	0	0	0	20	10,000	
	Metal	5,276	4	21,104	SWMU	0	0	0	0	71,104	
0	Prefab	160	1	160	NA	0	0	0	0	500	
	Steel and Fabric	512	8	4,096	NA	0	0	0	0	6,000	
				506,141		91,954	2,755	304	70,400	727,712	4,600

orage Warehouse, Old Sewage Treatment Facility, and Schoolhouse are in clean areas and would be removed under the Proposed

oling Tower, O2 Building, and Radwaste Process (Hittman) Building would be decontaminated if necessary but would not be removed ction. These slabs will be evaluated in the Decommissioning EIS.

ft^3 = cubic foot

e; SWMU = Solid Waste Management Unit; HWMU = Hazardous Waste Management Unit; SPDES = State Pollutant Discharge Elimination System.

ıe Warehouse Extension Staging Area

Table 2. Facility Functions to be Replaced

WVDP Facility	Function	Replacement
Emergency Vehicle Shelter	Houses the site emergency vehicles	All emergency response functions would be provided by off-site agencies.
Equalization Basin	Used as an excess capacity settling pond for discharges from the Utility Room	If necessary, equipment in existing facilities would be used.
Equalization Tank	Serves as a replacement for the	If

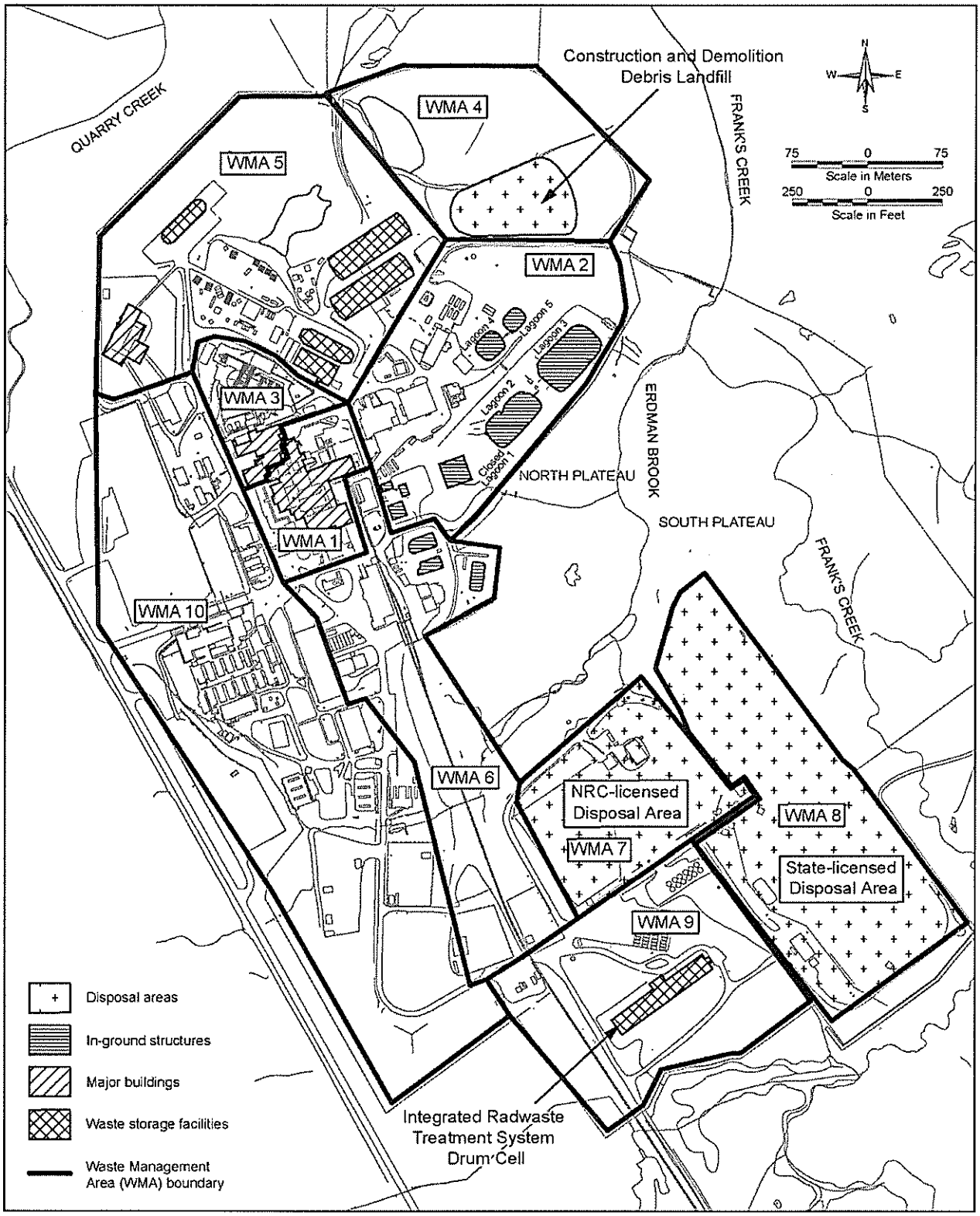
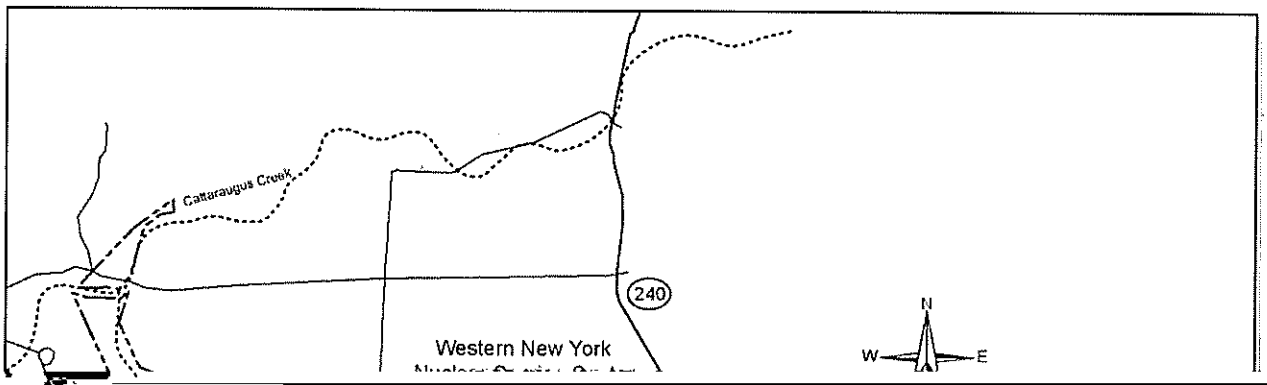


Figure 3. WMAs 1 – 10 at WVDP


Cattaraugus Creek
240
Western New York
N
W
E

DOE would package the generated wastes on-site and transport them to licensed commercial or DOE disposal facilities located off-site. Class A LLW and mixed LLW would be shipped to the Hanford Site in Washington, Envirocare in Utah, or the Nevada Test Site (NTS) for disposal. Industrial waste and building debris waste would be shipped to a landfill in Model City, New York, or Olean, New York, where this type of WVDP waste is currently shipped for disposal. Asbestos waste would be shipped to a landfill in Model City, New York. Hazardous waste would be shipped to a landfill in Indianapolis, Indiana, where this type of WVDP waste is currently shipped for disposal. Table 2 lists the types of waste

packaging expected to be used for each waste type, the off-site disposal locations where the wastes would be sent, and the projected volumes. U.S. Environmental Protection Agency (EPA) and U.S. Department of Transportation (DOT) shipping regulations would be followed to ensure safe packaging, temporary on-site storage, and shipment. Figures 5 and 6 show proposed disposal locations for each waste type. With

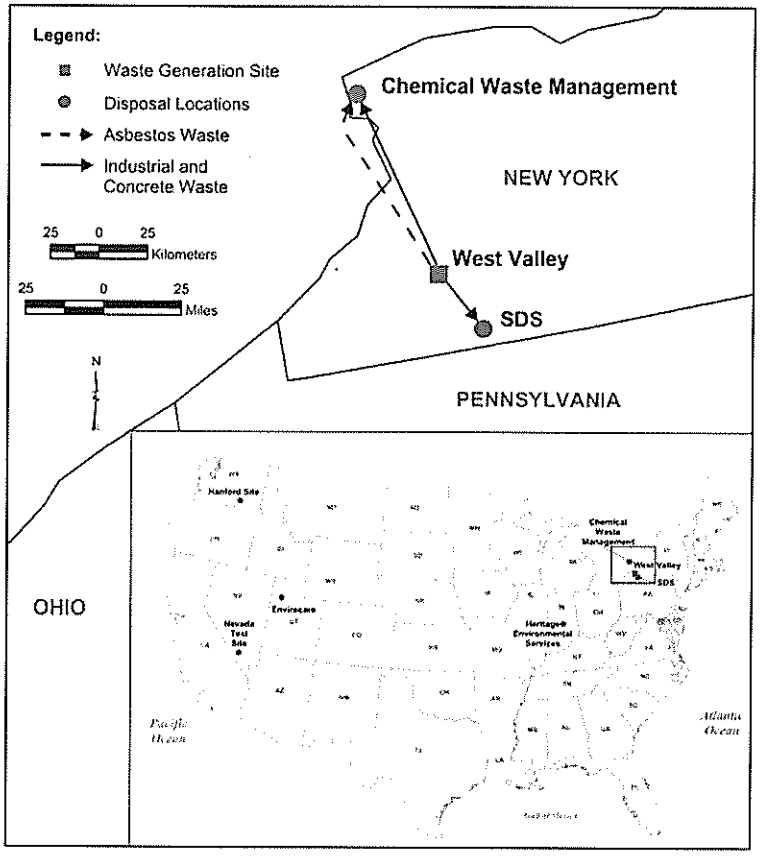


Figure 5. Waste Destinations for Asbestos, Industrial Waste, and Concrete

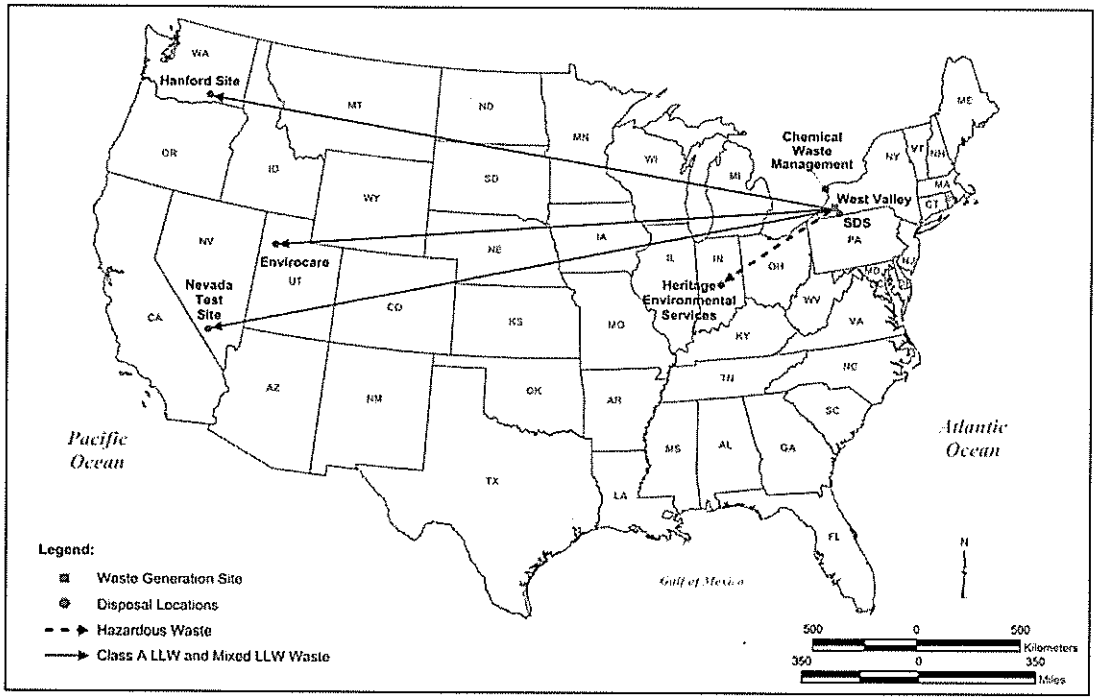


Figure 6. Destinations for LLW, Mixed LLW, and Hazardous Waste

DOE would undertake the following specific activities under the Proposed Action:

- Perform surveys of residual radioactivity prior to spraying or painting a sealant over facility surfaces.

- Remove radioactive contamination from facilities as appropriate. Depending on the amount and level of contamination, pre-demolition preparation could include debris removal, washing or wiping of surfaces, and application of sealants or fixatives. Contaminated water would be treated and released.

- Remove asbestos and hazardous waste.

- As appropriate, remove major equipment not directly involved in the vitrification process such as [redacted]

process tanks, vessels, and pumps and remove valves and piping.

- Demolish the building or structure, along with any appurtenant structures. Demolition methods would include, but not be limited to, grapples, masonry saws, ultra-high-pressure water jets,

emissions of radionuclides from excavation areas or from building removal activities would not result in members of the public receiving more than the DOE primary dose standard (an effective dose equivalent of 100 millirem [mrem] annually).

- Shielding would be provided commensurate with the particular radiological hazard and anticipated scope(s) of work to ensure that doses to workers would be below federally allowed limits.

- Airborne contamination controls would be provided to ensure that doses to workers would be below federally allowed limits. These controls would include barriers (e.g., structures and filters) and differential pressures between adjacent areas/rooms/cells, as appropriate for a particular radiological hazard.

- Personal protective equipment, such as respirators and anti-contamination clothing, would be used in contaminated areas as needed to ensure that doses to workers would be below federally allowed limits.

- Area radiation monitors, continuous air monitors, personal contamination monitors, friskers, and other radiation detection equipment would be used as appropriate to ensure that workers were made aware of any abnormal radiological conditions in a timely manner.

- ALARA reviews and other activities as appropriate would be performed to ensure that shielding and contamination control functions were adequately maintained when modifications were made to passive confinement or radiation shielding structures.

2.2 No Action Alternative

Under the No Action Alternative, current operations would continue and DOE would not decontaminate, demolish, or remove the 42 unused and unneeded facilities. Contaminated soil, equipment, and structures would remain in place. Funds would continue to be spent for routine maintenance and monitoring. Ongoing activities at the WVDP site would continue, including the loading, transportation, and off-site disposal of LLW and mixed LLW as analyzed in the WVDP WM EIS (DOE/EIS-0337) (DOE 2003) and the *Supplement Analysis for the West Valley Demonstration Project Waste Management Environmental Impact Statement* (DOE/EIS-0337-SA-01) (DOE 2006). Failure to maintain the facilities would result in their deterioration, possibly posing physical, but not radiological, hazards.

2.3 Alternatives Considered but Not Analyzed

DOE considered whether to analyze the decontamination, demolition, and removal of a subset of the 42 buildings and structures included in the Proposed Action. Because the potential impacts of the decontamination, demolition, and removal of all 42 facilities would collectively be very small, it would be difficult to distinguish among alternatives if subsets of fewer facilities were analyzed. Moreover, the impacts described for the Proposed Action bound the impacts that would be expected if a smaller number of facilities were decontaminated, demolished, and removed from the WVDP.

CHAPTER 3 EXISTING ENVIRONMENT AND ENVIRONMENTAL IMPACTS

3.1 Introduction

The following sections provide a general description of the existing environment on and near the WVDP site for the affected resource areas. A more detailed description of these resource areas can be found in Chapter 3 of the WVDP WM EIS (DOE 2003) and other references cited in that document. Following the description of each resource area, a description of the adverse or beneficial impacts that would occur or could be reasonably expected to occur to this resource area if the Proposed Action were implemented is presented. For comparison purposes and as required under NEPA, Section 3.12 describes adverse or beneficial environmental impacts that would occur if the No Action Alternative were implemented.

3.2 Climate, Air Quality, and Visibility

3.2.1 Existing Environment

The climate of western New York is the moist continental climate typical of the northeast United States. The climate is seasonally diverse due to the influence of several atmospheric and geographic factors, most notably the "lake effect" which results in abundant snowfall.[5] Although there are recorded extremes of 98.6 degrees Fahrenheit (F) and -43.6 degrees F for western New York, the climate is moderate, with an average annual temperature (1971–2000) of 48 degrees F. Rainfall is relatively high, averaging about 104 centimeters (41 inches) per year. Precipitation is evenly distributed throughout the year and is markedly influenced by Lake Erie to the west and, to a lesser extent, by Lake Ontario to the north. The prevailing winds are southwesterly and average 4 meters per second (9 miles per hour) (WVNS 2004a). Severe summer thunderstorms occur in western New York, but tornadoes are rare.

New York is divided into nine regions for assessing state ambient air quality. The WVDP site is located in Region 9, which consists of Niagara, Erie, Wyoming, Chautauqua, Cattaraugus, and Allegany counties. Cattaraugus County, where the WVDP is located, is an attainment area for all National Primary and Secondary Ambient Air Quality Standards contained in 40 CFR Part 50 and New York State air quality standards contained in 6 NYCRR 257. Chautauqua and Erie counties, which border Cattaraugus County to the west and northwest, are nonattainment areas for ozone. However, the prevailing southwesterly winds would tend to disperse WVDP emissions away from these nonattainment counties. Because the Proposed Action would not be implemented in a criteria air pollutant nonattainment or maintenance area, and would not adversely impact a neighboring nonattainment or maintenance area, a full Clean Air Act Conformity determination is not required.

Air emissions of radionuclides from WVDP are regulated by EPA under the National Emission Standards for Hazardous Air Pollutants (NESHAP) regulations, 40 CFR Part 61, Subpart H, *National Emissions of Radionuclides other than Radon from Department of Energy Facilities*. Emissions from the WVDP for the calendar year 2004 can be found in the WVDP *Annual Site Environmental Report*. In 2004, the estimated dose of radiation to a maximally exposed off-site individual from airborne emissions at the WVDP was 0.0015 mrem, which is about 0.02 percent of the 10-mrem EPA standard (WVNS 2005).

There are no mandatory Class I visibility areas either in New York State or in Pennsylvania (EPA 2005).

[5] "Lake effect" refers to the generation of sometimes spectacular snowfall amounts to the lee of (downwind of) the Great Lakes as cold air passes over the lake surface, extracting heat and moisture, resulting in cloud formation and snowfall downwind of the lake shore (AMS 2006).

3.2.2 Environmental Consequences of the Proposed Action

Implementation of the Proposed Action would result in the unavoidable short-term mobilization or emission of small amounts of radioactive and nonradioactive particulates. It would also result in short-term emissions of hydrocarbons and carbon monoxide from the exhaust of a small number of gasoline and diesel engines used for demolition and transportation activities.

During calendar year 2005, approximately 8,500 cubic meters (300,000 cubic feet) of LLW waste had been shipped off-site from the WVDP site. This is approximately three times the volume of LLW that would be shipped off-site under the Proposed Action. Except for the short-lived radionuclides

Alluvium and Slack Water Sequence. The Surficial Alluvium blankets the entire North Plateau downgradient of the Process Building. Surficial Alluvium sediments are poorly sorted and occur in beds (separate depositional layers) that range in thickness from 10 centimeters (4 inches) to over

30 centimeters (12 inches). Most of the sediments in the Surficial Alluvium can be classified as muddy gravel or muddy sandy gravel. These sediments were deposited by streams that eroded and reworked glacial deposits and outwash.

Slack-Water Sequence sediments were deposited in a glacial lake/pond. Streams from Dutch Hill (southwest of the Main Plant) transported sediments into the still water of the lake. The sediments were also sorted by the lake water. Coarser sediments were deposited near the mouth of the streams and finer sediments dropped out further in the lake. Sediment layers in the Slack-Water Sequence are generally

The watershed on the Project Premises is drained by three named streams: Quarry Creek, Frank's Creek, and Erdman Brook (WVNS 2000). Erdman Brook and Quarry Creek are tributaries to Frank's Creek, which in turn flows into Buttermilk Creek. Erdman Brook, the smallest of the three streams, drains the central and largest fraction of the developed WVDP premises, including a large portion of the disposal areas and the areas surrounding the lagoon system; the plant, office, and warehouse areas; and a major part of the parking lots. Following treatment, WVDP wastewater is also discharged to this brook.

Cattaraugus Creek is used locally for swimming, canoeing, and fishing. Downstream from the WVDP, the Cattaraugus Indian Reservation is located along Cattaraugus Creek, from Gowanda, New York, downstream to the shore of Lake Erie. Although some water is taken from Cattaraugus Creek to irrigate nearby golf course greens and tree farms, no public potable water supply is drawn from the creek downstream of the WNYNSC before the creek flows into Lake Erie south of Buffalo, New York. Water from Lake Erie is used as a public drinking water supply.

Groundwater. The WVDP is located within the Cattaraugus Creek Basin Aquifer System, a system that has been designated by EPA as a sole or principal source of drinking water for the surrounding towns (52 Fed. Reg. 36102 (1987)). This means that all projects with federal financial assistance constructed in this basin are subject to EPA review to ensure that they are designed and constructed so as not to create a significant hazard to public health.

The WVDP site is underlain by two aquifer zones, neither of which can be considered highly permeable or productive. The groundwater flow patterns pertinent to the site relate to recharge and downgradient movement for these two aquifers. Groundwater in the surficial unit tends to move in an easterly or northeasterly direction from the western boundary of the site, close to Rock Springs Road. Most of the groundwater in this unit discharges via springs and seeps into Frank's Creek or into small tributaries of that creek (for example, Erdman Brook). Groundwater [redacted]

present, the site is about equally divided between forestland and abandoned farm fields. Consequently, it provides habitat especially attractive to white-tailed deer, various indigenous migratory birds, reptiles, and small mammals. Plant communities found on the site have been categorized into five cover types: mixed hardwood forest, pine-spruce community, successional creek bank communities, late oldfield successional areas, and fields-meadows. The plant communities found on the site are characteristic of western New York. The relatively undisturbed nature of large portions of the WNYNSC has allowed for natural succession of previous agricultural areas within its boundaries. Because neither the setting nor the former agriculture land use is unique, the forest communities that will eventually develop in the abandoned fields will be similar to others in the region (WVNS 2000).

Federally Listed Species. In comments submitted on the draft version of the WVDP WM EIS (DOE 2003), the U.S. Fish and Wildlife Service concurred in DOE's determination that no federally listed or proposed endangered or threatened species are known to exist in the project impact area and that no habitat in the project impact area is currently designated or proposed critical habitat in accordance with the provisions of the Endangered Species Act, 16 U.S.C. 1531 *et seq*.

State-Listed Species. State of New York "special concern species" are species of fish and wildlife found to be at risk of becoming endangered or threatened in New York (New York Code of Rules and Regulations Title 6, part 182.2(i)). Typically, species of special concern are those whose populations are declining, often in association with critical habitat loss. Field investigations at the Western New York Nuclear Services Center in 1990 and 1991 recorded one species (Northern harrier) on the state list of threatened species and six state species of special concern (Cooper's hawk, upland sandpiper, common raven, Eastern bluebird, Henson's sparrow, and vesper sparrow). However, all of the noted species were observed in areas of the Western New York Nuclear Services Center outside of the WVDP Project Premises. Moreover, none of these threatened species or species of special concern depend on habitat within the WVDP Project Premises for any aspect of their life cycles (DOE 2003).

Wetlands. The WNYNSC has meadows, marshes, lakes, ponds, bogs, and other areas that are considered functional wetlands. Fifty-one such areas have been identified as "jurisdictional" wetlands, or wetlands that are constrained from dredging or filling actions by Section 404 of the Clean Water Act and by the state Freshwater Wetland Act (WVNS 1992). These wetlands range in size from 100 square meters (1,100 square feet) to more than 37,000 square meters (398,000 square feet). The total wetlands area is approximately 0.14 square kilometers (0.05 square miles). Eighteen wetlands with a total area of approximately 37,000 square meters (398,000 square feet) were delineated within the Project Premises. The New York State Department of Environmental Conservation has determined that eight wetlands encompassing 81,000 square meters (872,000 square feet) on the south and east sides of the Project Premises and SDA are linked and meet the criteria for a single wetland.

Floodplains. The site's topographic setting renders major flooding unlikely; local runoff and flooding is adequately accommodated by natural and man-made drainage systems in and around the WVDP (WVNS 2000). Flood levels for the 100-year and the 500-year storms show that no facilities on the Project Premises are in either the 100- or 500-year floodplain (FEMA 1984).

3.5.2 Environmental Consequences of the Proposed Action

No federally or state-listed threatened or endangered species and no critical habitat for any federally or state-listed threatened or endangered species would be affected by the Proposed Action because none

foundation areas would enhance the quality of the WVDP habitat for local indigenous or migratory species.

Because the Proposed Action would not entail any new construction activities or any planned disturbance to or discharge into any delineated wetlands, no impacts to wetland resources are expected. However, during demolition and removal operations, any potential adverse impacts to delineated wetlands would be avoided to the fullest extent possible. Prior to work performance, activity- and task-level [illegible]

[redacted]

assessed by qualified environmental professionals to identify the potential for adverse impacts to nearby wetlands and to prescribe appropriate controls into the work process to minimize and mitigate such impacts. To minimize adverse impacts to nearby wetlands, administrative controls (such as delineating work area limits and erecting exclusion fencing) and physical controls (for stormwater runoff) would be implemented. Sediment and erosion controls for runoff from the work area (including filtration or diversion techniques, such as fabric siltation fences, diversion channels, straw bale dikes, and check dams) would be specified, installed, and maintained.

There would be no impact to the existing stormwater drainage infrastructure, and the Proposed Action would not occur in a 100- or 500-year floodplain.

3.6 Historical and Cultural Resources

3.6.1 Existing Environment

Cultural resource materials have been found and 11 cultural resource sites have been identified at the WNYNSC. The resources consist of eight historic archaeological sites, two standing structures, and one prehistoric lithic findspot (WVNS 1994). However, no sites of historical or cultural interest have been

facilities with adequate capacity. For that reason, there would be no impact to socioeconomic resources such as housing, schools, and other public facilities. The existing tax base would neither increase nor decrease. For this reason, no adverse or beneficial socioeconomic impacts are expected.

The only impact from the Proposed Action with the potential to disproportionately and adversely affect

[redacted]

minority or low-income populations would be the short increase in suspended solids in stormwater runoff during soil excavation (described in Section 3.4.2). If planned surface water impact mitigation techniques and normal plant sediment-control systems failed, there could be a disproportionate adverse impact to residents of the Cattaraugus Reservation because Cattaraugus Creek runs along the reservation for several miles. No such failures have occurred in the past, and such failures are unlikely in the future.

3.8 Noise

operations. Truck or rail traffic traveling to and from the area as part of the Proposed Action would also contribute to the noise impact.

Table 4 shows typical heavy equipment noise levels at 15 meters (50 feet) from the source. Based on DOE's prior experience, the types of equipment shown in the table are illustrative of what would be used for decontamination, demolition, excavation, grading scraping, and removal operations. The overall noise impact would vary daily, depending on the type of activity, duration of the activity, distance between the activity and noise-sensitive receptors, and any shielding effects provided by local barriers and topography.

Table 4. Noise Levels of Typical Heavy Equipment

Equipment	Typical Noise Level (dBA) 50 Feet from Source
Backhoe	80
Grader	85
Loader	85
Roller	75
Bulldozer	85
Truck	88
Scraper	80

Source: FTA 1995.

The loudest removal activity that would be undertaken for a sustained period would probably be th

Land within 8 kilometers (5 miles) of the site is used mainly for agricultural (active and inactive) and

forestry activities. The major exception is the Village of Springville, where residential/commercial and industrial land uses are found (WVNS 2000).

The industries nearest the site are light-industrial and commercial (either retail- or service-oriented). A field review of an 8-kilometer (5-mile) radius did not indicate the presence of any industrial facilities that would present a hazard in terms of safe operation of the site.

A similar field review of the Village of Springville and the Town of Concord did not indicate the presence

Table 5. Radiation Doses for Involved and Noninvolved Workers

Worker Population	Activity	Time Period (years)	Collective Dose		Latent Cancer Fatalities	
			Annual (person-rem/yr)	Total (person-rem)	Annual	Total
Involved workers[a]	Proposed Action	4	100	400	0.050	0.20
Noninvolved workers[b]	Ongoing operations of WVDP[b]	4	23	92	0.012	0.046
All workers	Total	4	120	490	0.062	0.25

Worker Population	Activity	Time Period (years)	Individual Dose		Latent Cancer Fatalities	
			Annual (mrem/yr)	Total (mrem)	Annual	Total
Involved workers[a]	Proposed Action	4	120	480	6.0E-5	2.4E-4
Noninvolved workers[b]	Ongoing operations of WVDP[b]	4	320	1,300	1.6E-4	6.4E-4

a. Involved workers would be those individuals that actively participate in the Proposed Action.
b. Noninvolved workers would be those individuals that would be on-site but would not actively participate in the Proposed Action.

Over this same time period, the individual radiation dose to the average involved worker would be about 120 mrem per year. This radiation dose is well below the limit in 10 CFR 835 of 5 rem (5,000 mrem) per year and the WVDP administrative control level of 500 mrem per year (WVNS 2001), and would result in less than 1 (6.0×10^{-5}) latent cancer fatality, or a chance of about 6 in 100,000 per year.

In addition to radiation doses from the Proposed Action activities, workers would be exposed to radiation doses from the ongoing operations of the WVDP site. When radiation doses are calculated for involved and noninvolved workers for both Proposed Action activities and ongoing operations, the total collective radiation dose to the workers was estimated to be about 490 person-rem over the duration of the Proposed Action, or about 120 person-rem per year (Table 5). This radiation dose is equivalent to less than 1 (0.25) latent cancer fatality within the worker population, or 0.062 per year.[8]

Precautions taken to protect workers against nonradioactive hazardous materials would be similar to the precautions taken to minimize exposure to radiation and radioactive material. Therefore, the impacts to workers from exposure to nonradioactive hazardous materials are expected to be minimal.

In over 20 years of operations, there has never been a work-related worker fatality at West Valley. Over the past 4 years, there has not been a lost time work accident or injury. Based on these data, the expected number of nonradiological worker fatalities for the Proposed Action is zero. Using DOE-wide data from the DOE Computerized Accident/Incident Reporting System (CAIRS) for 2000 through 2004, it is

[8] For the noninvolved workers in the EA, DOE used the sum of the Involved and Noninvolved Workers from the *West Valley Demonstration Project Waste Management Environmental Impact Statement* (see Table 4-7, page 4-17), or 320 mrem/yr (260+59=320). These workers are considered to be the noninvolved workers for purposes of this EA. The involved workers for the Proposed Action are estimated to receive 77 mrem/yr. Based on data for 1995-1999, the average radiation dose for West Valley workers was 59 mrem/yr (see Table 4-7, page 4-17).

estimated that there would be less than 1 (0.07) nonradiological worker fatality under the Proposed Action.

Public Impacts. Under the Proposed Action, people near the WVDP site would be exposed to airborne and liquid releases of radionuclides during normal operations. Table 6 presents the radiological impacts of these airborne and liquid releases. These radiological impacts were based on the data contained in Marschke (2001).

Table 6. Radiation Doses to the Public Under the Proposed Action[a]

	Maximally Exposed Individual				Population Around WVDP Site			
	Individual Radiation Dose[b]		Probability of Latent Cancer Fatality		Collective Radiation Dose[c]		Probability of Latent Cancer Fatality	
Activity	Annual (mrem/yr)	Total (mrem)	Annual	Total	Annual (person-rem/yr)	Total (person-rem)	Annual	Total
Proposed Action[d]	16	65	9.7×10^{-6}	3.9×10^{-5}	19	74	0.011	0.045
Continued Operations[d]	0.062	0.25	3.7×10^{-8}	1.5×10^{-7}	0.25	1.0	1.5×10^{-4}	6.0×10^{-4}
Total	16	65	9.7×10^{-6}	3.9×10^{-5}	19	75	0.011	0.046

individual living near the site. For the population living within 80 kilometers (50 miles) of the WVDP site, this accident could result in a collective radiation dose of 14 person-rem; this is equivalent to less than 1 (0.0084) latent cancer fatality. Using 95-percent atmospheric conditions, this accident could result in about 0.13 latent cancer fatalities for the population living within 80 kilometers (50 miles) of the WVDP site (Table 8).

Table 7. Radiological Consequences of Accidents under the Proposed Action Using 50-Percent Atmospheric Conditions

Accident	Frequency (per year)	Worker		Maximally Exposed Individual		Population[a]	
		Radiation Dose (rem)	Latent Cancer Fatality	Radiation Dose (rem)	Latent Cancer Fatality	Radiation Dose (person-rem)	Latent Cancer Fatality
Breach of building ventilation system during decontamination	$10^{-6} - 10^{-8}$	0.013	6.5×10^{-6}	0.0045	2.7×10^{-6}	14	0.0084
Class A box puncture	0.1 – 0.01	8.5×10^{-5}	4.3×10^{-8}	2.9×10^{-5}	1.7×10^{-8}	0.090	5.4×10^{-5}
Fire in building during decontamination	$10^{-4} - 10^{-6}$	0.14	7.0×10^{-5}	0.047	2.8×10^{-5}	150	0.090

a. Collective dose to the 1.5 million people living within 80 kilometers (50 miles) of the WVDP site.

Table 8. Radiological Consequences of Accidents under the Proposed Action Using 95-Percent Atmospheric Conditions

Accident	Frequency (per year)	Worker		Maximally Exposed Individual		Population[a]	
		Radiation Dose (rem)	Latent Cancer Fatality	Radiation Dose (rem)	Latent Cancer Fatality	Radiation Dose (person-rem)	Latent Cancer Fatality
Breach of building ventilation system during decontamination	$10^{-6} - 10^{-8}$	0.13	6.5×10^{-5}	0.049	2.9×10^{-5}	220	0.13
Class A box puncture	0.1 – 0.01	8.4×10^{-4}	4.2×10^{-7}	3.2×10^{-4}	1.9×10^{-7}	1.4	8.4×10^{-4}
Fire in building during decontamination	$10^{-4} - 10^{-6}$	1.4	7.0×10^{-4}	0.51	3.1×10^{-4}	2,300	1.4

a. Collective dose to the 1.5 million people living within 80 kilometers (50 miles) of the WVDP site.

A second potential accident involved the puncture of a box containing Class A LLW. The frequency of this accident was estimated to be in the range of 0.1 to 0.01 per year. The consequences of this accident using 50-percent atmospheric conditions are presented in Table 7. For a worker located at the site, this accident could result in a radiation dose of 8.5×10^{-5} rem. This accident could result in a radiation dose of 2.9×10^{-5} rem to the maximally exposed individual living near the WVDP site. For the population living within 80 kilometers (50 miles) of the site, this accident could result in a radiation dose of 0.090 person-rem; this is equivalent to a probability of a latent cancer fatality of 5.4×10^{-5}. Using 95-percent atmospheric conditions, this accident could result in a probability of a latent cancer fatality of 8.4×10^{-4} for the population living within 80 kilometers (50 miles) of the WVDP site (see Table 8).

A third potential accident involved a fire inside a building during decontamination. The frequency of this accident was estimated to be in the range of 10^{-4} to 10^{-6} per year. The consequences of this accident using 50-percent atmospheric conditions are presented in Table 7. For a worker located on the site, this accident could result in a radiation dose of 0.14 rem. This accident could result in a radiation dose of 0.047 rem to the maximally exposed individual living near the site. For the population living within 80 kilometers (50 miles) of the WVDP site, this accident could result in a collective radiation dose of 150 person-rem; this is equivalent to less than 1 (0.090) latent cancer fatality. Using 95-percent atmospheric conditions, this accident could result in about 1.4 latent cancer fatalities for the population living within 80 kilometers (50 miles) of the WVDP site (see Table 8).

In the *Safety Analysis Report for Waste Processing and Support Activities* (WVNS 2004b), two accidents involving releases of nonradioactive hazardous material were evaluated: an accident involving the release of hydrogen peroxide and an accident involving the release of polychlorinated biphenyl (PCB)-contaminated oil. In both cases, the concentration of the hazardous material at the maximally exposed individual did not exceed the Emergency Response Planning Guideline-2 (ERPG-2) concentration, and no life-threatening health effects would be expected.

Impacts at Other Sites. Impacts of radioactive waste management activities at off-site locations that would be used to dispose of radioactive wastes under the Proposed Action (Envirocare, Hanford, and the NTS) have been addressed in earlier NEPA documents (DOE 2003).[9] For all waste types, WVDP waste represents less than 2 percent of the total DOE waste inventory. Human health impacts at these sites as a result of the disposal of WVDP waste during the 4-year period of Proposed Action would be very minor (substantially less than 1 latent cancer fatality).

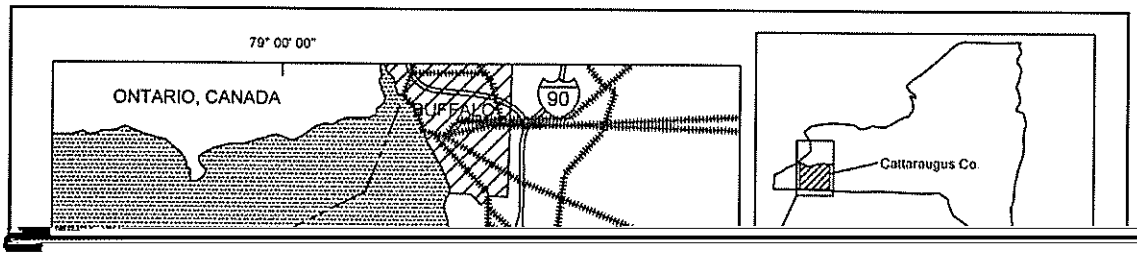
3.11 Transportation

3.11.1 Existing Environment

Transportation infrastructure near the WVDP includes highways, rural roads, a rail line, and aviation facilities. The primary method of transportation in the site vicinity is motor vehicle traffic on the highway system (Figure 7).

All roads in Cattaraugus County, with the exception of those within the cities of Olean and Salamanca, are considered rural roads. Rural principal arterial highways are connectors of population and industrial centers. This category includes U.S. Route 219, located 4.2 kilometers (2.6 miles) west of the site; Interstate 86, the Southern Tier Expressway located approximately 35 kilometers (22 miles) south of the site; and the New York State Thruway (I-90), approximately 35 kilometers (22 miles) north of the site. Traffic volume along U.S. 219 between the intersection with NY Route 39 at Springville and the intersection with Cattaraugus County Route 12 (East Otto Road) ranges from a low average annual daily traffic volume of 6,100 to a high volume of 7,500. Seasonal holiday traffic is as much as 128 percent of the average annual daily volume. Approximately 18 percent of the traffic consists of trucks. This route operates at a level of service B, which indicates a stable traffic flow, an operating speed of 80 kilometers per hour (50 miles per hour), and reasonable driver freedom to maneuver (WVNS 2000).

[9] As noted above, in accordance with the settlement agreement between DOE and the State of Washington of January 6, 2006, regarding the case *Washington v. Bodman*, DOE will not ship LLW and mixed LLW from WVDP to Hanford until DOE has satisfied the requirements of the settlement agreement.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Rock Springs Road, adjacent to the site on the west, serves as the principal site access road. The portion of this road between Edies Road and U.S. 219 is known as Schwartz Road. Along this road, between the site and the intersection of U.S. 219, are fewer than 24 residences. State Route 240, also identified as County Route 32, is 2 kilometers (1.2 miles) northeast of the site. Average annual daily traffic on the portion of NY Route 240 that is proximate to the site (between County Route 16 - Rosick Hill Road and NY Route 39) ranges from a low of 440 to a high of 2,250 (WVNS 2000).

The Buffalo & Pittsburgh Railroad line is located within 800 meters (2,600 feet) of the Project Premises

The rail line runs from Salamanca, New York to the site, but has been abandoned north of the site. In 1999, the railroad completed connection of track between Ashford Junction and Machias, New York. Service by the Buffalo & Pittsburgh Railroad on the rail line from the WVDP to Ashford Junction and then to Machias now provides the WVDP rail access (WVNS 2000). No credible accidents or abnormal operations at off-site transportation facilities (i.e., the branch rail line) were identified that would contribute to an accident at the West Valley site (WVNS 2004b).

There are no commercial airports in the site vicinity. The nearest major airport is Buffalo Niagara

Table 9. Waste Shipped Under the Proposed Action

Waste Type	Container Type[a]	Waste Shipped (ft^3)[b]	Number of Containers	Number of Shipments
LLW, Class A	B-25 boxes	91,954	1,021	73 (Truck) 37 (Rail)
MLLW, Class A	B-25 boxes	2,755	31	3 (Truck) 2 (Rail)
Asbestos	20 cubic yard intermodal container	304	1	1 (Truck) 1 (Rail)
Hazardous waste	55-gallon drums	70,400	9,576	114 (Truck) 57 (Rail)
Industrial waste	B-25 boxes	727,712	8,079	578 (Truck) 289 (Rail)
Concrete/ Debris	10 cubic yard dump truck or intermodal container	4,600	18	18 (Truck) 9 (Rail)

a. These packages were assumed for purposes of analysis. Actual packaging may vary.
b. To convert cubic feet to cubic meters, multiply by 0.028.

The transportation impacts of shipping the Class A LLW, mixed LLW, asbestos waste, hazardous waste, industrial waste, and building debris waste would be from two sources: incident-free transportation and transportation accidents. Both radiological impacts and nonradiological impacts are included in the analysis. The total impacts from transportation would be the sum of the impacts from incident-free transportation and transportation accidents.

Table 10 lists the total transportation impacts by waste type and destination under the Proposed Action. If either trucks or trains were used to ship the waste, essentially no additional fatalities are anticipated. When the transportation impacts of the Proposed Action are combined with the transportation impacts of continued operations at West Valley, after adding the impacts of the Proposed Action to those anticipated from continued operations, about 1 fatality might occur. For perspective, during the 4-year period of the Proposed Action, there would be about 160,000 traffic fatalities in the United States (U.S. Bureau of the Census 1997).

As shown in Table 10, the estimated fatalities associated with the Proposed Action are 0.02 for truck transport and 0.03 for rail transport. Table 10 also shows that these estimated fatalities are a small fraction of the fatalities associated with continued operations. Whether the estimated number of fatalities when using the rail alternative is greater or less than the estimated fatalities from truck transport is a function of several factors. The fatal nonradiological accident rate per kilometer traveled is state-specific and overall tends to be higher for rail. However, the greater capacity of the railcars [redacted]

Table 10. Transportation Impacts Under the Proposed Action

Waste Type	Destination	Incident-Free (LCFs)		Radiological Accident Risk (LCFs)	Pollution Health Effects (Fatalities)	Traffic Fatalities	Total Fatalities
		Public	Worker				
Proposed Action Truck							
LLW, Class A	Envirocare	4.0×10^{-3}	5.0×10^{-3}	6.4×10^{-6}	9.2×10^{-4}	4.8×10^{-3}	1.5×10^{-2}
	Hanford[a]	4.8×10^{-3}	5.9×10^{-3}	6.9×10^{-6}	1.0×10^{-3}	6.0×10^{-3}	1.8×10^{-2}
	NTS	4.6×10^{-3}	5.9×10^{-3}	6.5×10^{-6}	9.3×10^{-4}	5.6×10^{-3}	1.7×10^{-2}
MLLW, Class A	Envirocare	1.6×10^{-4}	2.0×10^{-4}	2.3×10^{-8}	3.8×10^{-5}	2.0×10^{-4}	6.0×10^{-4}
	Hanford[a]	2.0×10^{-4}	2.4×10^{-4}	2.6×10^{-8}	4.1×10^{-5}	2.5×10^{-4}	7.3×10^{-4}
	NTS	1.9×10^{-4}	2.4×10^{-4}	2.4×10^{-8}	3.8×10^{-5}	2.3×10^{-4}	7.0×10^{-4}
Asbestos	Model City, NY	0.0	0.0	0.0	2.5×10^{-6}	3.0×10^{-6}	5.5×10^{-6}
Hazardous Waste	Indianapolis, IN	0.0	0.0	0.0	6.4×10^{-4}	1.3×10^{-3}	1.9×10^{-3}
Industrial Waste	Model City, NY	0.0	0.0	0.0	1.4×10^{-3}	1.7×10^{-3}	3.2×10^{-3}
	Olean, NY	0.0	0.0	0.0	2.1×10^{-4}	1.9×10^{-3}	2.1×10^{-3}
Building Debris	Model City, NY	0.0	0.0	0.0	4.5×10^{-5}	5.4×10^{-5}	9.9×10^{-5}
	Olean, NY	0.0	0.0	0.0	6.4×10^{-6}	5.9×10^{-5}	6.5×10^{-5}
							Total Truck Fatalities: 0.019-0.024
Continued Operations Truck							Total Truck Fatalities: 1.0-1.1
Total Truck (Proposed Action + Continued Operations)							Total Truck Fatalities: 1.0-1.1
Proposed Action Rail							
LLW, Class A	Envirocare	6.7×10^{-3}	5.3×10^{-3}	2.5×10^{-5}	1.3×10^{-3}	4.1×10^{-3}	1.7×10^{-2}
	Hanford[a]	6.9×10^{-3}	5.7×10^{-3}	2.8×10^{-5}	1.3×10^{-3}	5.4×10^{-3}	1.9×10^{-2}
	NTS	7.2×10^{-3}	7.8×10^{-3}	2.5×10^{-5}	1.3×10^{-3}	5.4×10^{-3}	2.2×10^{-2}
MLLW, Class A	Envirocare	3.6×10^{-4}	2.8×10^{-4}	1.3×10^{-7}	7.0×10^{-5}	2.2×10^{-4}	9.4×10^{-4}
	Hanford[a]	3.7×10^{-4}	3.1×10^{-4}	1.5×10^{-7}	7.2×10^{-5}	2.9×10^{-4}	1.0×10^{-3}
	NTS	3.9×10^{-4}	4.0×10^{-4}	1.4×10^{-7}	7.1×10^{-5}	2.8×10^{-4}	1.1×10^{-3}
Asbestos	Model City, NY	0.0	0.0	0.0	4.9×10^{-6}	1.8×10^{-5}	2.3×10^{-5}
Hazardous Waste	Indianapolis, IN	0.0	0.0	0.0	1.0×10^{-3}	3.1×10^{-3}	4.1×10^{-3}
Industrial Waste	Model City, NY	0.0	0.0	0.0	1.5×10^{-3}	5.3×10^{-3}	6.8×10^{-3}
	Olean, NY	0.0	0.0	0.0	2.7×10^{-4}	3.9×10^{-3}	4.2×10^{-3}
Building Debris	Model City, NY	0.0	0.0	0.0	4.8×10^{-5}	1.6×10^{-4}	2.1×10^{-4}
	Olean, NY	0.0	0.0	0.0	8.5×10^{-6}	1.2×10^{-4}	1.3×10^{-4}
							Total Rail Fatalities: 0.027-0.034
Continued Operations Rail							Total Rail Fatalities: 0.75-0.89
Total Rail (Proposed Action + Continued Operations)							Total Rail Fatalities: 0.78-0.93

Note: LCFs = latent cancer fatalities.

a. In accordance with the settlement agreement between DOE and the State of Washington of January 6, 2006, regarding the case *Washington v. Bodman*, DOE will not ship LLW and mixed LLW from WVDP to Hanford until DOE has satisfied the requirements of the settlement agreement.

Public Impacts. For truck shipments, the maximally exposed member of the public would be a person working at a service station who would receive a radiation dose of about 0.047 mrem per year. This is equivalent to a probability of a latent cancer fatality of about 2.8×10^{-8}.

If shipments were made by rail, the maximally exposed member of the public would be a rail yard worker who was not directly involved with handling the railcars. This person would receive a radiation dose of about 0.16 mrem per year. This is equivalent to a probability of a latent cancer fatality of about 9.6×10^{-8}.

3.11.2.2 Reasonably Foreseeable Transportation Accident Impacts

The maximally exposed individual would receive a radiation dose of 1.0 rem from the maximum

effect throughout the Proposed Action to ensure that the short-term increases in released contaminants would be minimized and kept in compliance with regulatory guidelines. The cumulative long-term impacts of the Proposed Action would be beneficial due to the demolition and removal of 42 unused and unneeded facilities and the removal, consolidation, and appropriate disposal of hazardous and radioactive wastes.

3.14 Irreversible and Irretrievable Commitment of Resources

The Proposed Action would require the use of natural resources such as vehicle fuel and electric power; the quantities involved would be small. The land involved in the action is already dedicated to use by the

CHAPTER 4 PERSONS AND AGENCIES CONSULTED

The following agencies were consulted in the preparation of this EA:

New York State Energy Research and Development Authority (NYSERDA)
West Valley Site Management Program

The Seneca Nation of Indians

CHAPTER 5 REFERENCES

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APPENDIX A DESCRIPTION OF FACILITIES PROPOSED FOR DECONTAMINATION, DEMOLITION, AND REMOVAL

This appendix describes each of the West Valley Demonstration Project facilities that are proposed for decontamination (if needed), demolition, and removal for off-site disposal. Table 1 in Chapter 1 of the environmental assessment (EA) contains a list of these facilities, including information regarding size, expected waste volume, and construction type.

The ***Administration Building*** is a single-story structure. The concrete base is 9 inches thick. Construction materials include a concrete foundation, wood frame, metal siding, and metal roofing. This facility is not radiologically contaminated. The Administration Building was used as office space. Personnel from DOE and NYSERDA have relocated off the project premises. DOE would dismantle the buildings and dispose

of the rubble in a sanitary landfill.

The ***Bulk Storage Warehouse*** (BSW) is approximately 2.5 miles southeast of the Process Building. It was built in 1969 as the Plutonium Storage Facility. An inspection was conducted by the NRC during January 1975 to verify that radiation levels did not exceed background, then it was released for

or plasma arc cutting. In addition, the CSRF may be used for staging, sampling, sorting, consolidating, and repackaging mixed waste and LLW containers. These activities will not include size-reduction processes which would be comparable to containment building activities. Typically, wastes are stored less than 2 weeks; however, the CSRF could be used for longer-term container storage if necessary. Before the CSRF was set up and the floors lined, floor drains in the MSM Repair Shop (including the section in the CSRF) were plugged. The floors, walls, and ceilings of the cutting room and large item decontamination room are lined with stainless steel. The remaining rooms do not have any liners or coatings for secondary-containment purposes. During operational activities, the walls and floors are lined with herculite. The slope of the pavement surrounding the CSRF directs water away from the area and controls run-on from precipitation.

This facility is radiologically contaminated. It has a relatively small footprint compared with other facilities, but because concrete was used in its construction, it is conservatively assumed that the concrete has been contaminated and that decontamination, demolition, and removal activities would therefore generate a higher volume of LLW than larger facilities constructed of metal and steel.

The ***Diesel Fuel Oil Building*** is a metal building used for diesel fuel oil storage for the Vitrification Facility diesel generator and houses a 7,450-gallon tank located in a below-grade concrete vault. This facility is not radiologically contaminated. DOE proposes to remove this building and the concrete vault. During decommissioning activities, power would be provided by the generators in the Utility Room Extension.

The ***Emergency Vehicle Shelter*** is a steel-framed structure with corrugated metal siding and a metal roof used for the emergency vehicle. This facility has never been radiologically contaminated, and DOE plans to use off-site agencies for emergency response functions once this structure is removed. DOE plans to use off-site agencies for emergency response functions once this structure was removed.

story high. This facility contained a sanitary wastewater storage tank and a satellite accumulation area for the storage of Resource Conservation and Recovery Act (RCRA) hazardous wastes. Minor chemical spills in this shop were cleaned up in accordance with site procedures. This facility is not radiologically contaminated.

The ***Hazardous Waste Storage Lockers*** are located east of the Remote-Handled Waste Facility (RHWF). The four lockers are used for short-term storage of hazardous waste. This facility is not radiologically contaminated.

The ***Hydrofracture Test Well Area*** consists of four observation wells and one injection well. During

1969, the Oak Ridge National Laboratory (ORNL) installed these wells northwest of the BSW. The wells were installed to perform hydraulic fracturing experiments as part of a pilot study to assess the suitability of this method for the underground disposal of LLW. The wells were drilled to depths of 1,500 feet and were cased with steel risers along their entire length. The injection well was centrally located and the four observation wells were located approximately 150 feet north, south, east, and west of the injection well.

Six hydraulic fracturing tests were performed from 1969 through 1971 at depths of 500 to 1,450 feet. Each of the injections consisted of water mixed with clay. Four of the injections used zirconium-95 as a

This facility is not radiologically contaminated, nor is there known hazardous waste contamination. However, soils beneath the foundation may be contaminated, given the facility is located on the NDA. Once the metal shell is removed, DOE would place the foundation in a safe condition, pending completion of the Decommissioning EIS, in which disposition of the foundation and any related soil contamination will be evaluated. Based on the type of foundation and extent of any removable contamination, DOE would determine the need for decontaminating the foundation and whether to paint, apply fixative, or cover in order to prevent migration of any non-removable contamination from the foundation surface.

The ***Lag Storage Addition (LSA) 1*** is a pre-engineered steel frame and fabric structure built in 1987 to store containerized LLW and protect it from wind and precipitation. The frame consists of 15 tons of galvanized steel and aluminum, including the doors. The fabric consists of approximately 13,800 square feet (ft^2) of fire-retardant and self-extinguishing vinyl. The floor is compacted gravel. LSA 1 has never been used to store mixed waste; it currently stores LLW.

This facility is radiologically clean at grade. Once the waste boxes were removed, the hardstand would be surveyed and RCRA sampled to ensure that no contamination had resulted due to potential, but undetected, container integrity issues. If spot contamination was found, the affected gravel would be removed and disposed of as LLW, or mixed LLW, if appropriate.

The ***Lag Storage Addition (LSA) 2 Hardstand*** was a tent structure that was dismantled after it was damaged by high winds. The foundation of LSA 2 is 8 inches of crushed stone covering an area 65 feet by 200 feet. Ten concrete footings reach a total depth of 4 feet. Six footings have cross-sections of 5 ft^2 and four have cross-sections of 3 ft^2.

An area of the old foundation, measuring 40 feet by 65 feet, is radiologically contaminated. The estimated volume of the contaminated soil is 2,600 ft^3. No hazardous chemical contamination has been identified. The LSA 2 Hardstand is used to store LLW and mixed waste.

This facility is radiologically clean at grade. Once the waste boxes are removed, the hardstand will be surveyed and RCRA sampled to ensure that no contamination has resulted due to potential, but undetected, container integrity issues. If spot contamination is found, the affected gravel would be removed and disposed of as LLW, or mixed LLW, if appropriate.

The ***Lag Storage Addition (LSA) 3*** is a clear-span structure with a pre-engineered frame and steel sheathing on a 7-inch concrete slab with curbs 6 inches high around the inside perimeter. The floor consists of approximately 20,000 ft^3 of concrete. LSA 3 is used to store LLW and mixed waste.

This facility is not radiologically contaminated, nor are there known hazardous constituents in the facility. The structure (including the floor) would be surveyed and RCRA sampled (swipe samples) to ensure that no contamination had resulted due to potential, but undetected, container integrity issues. If spot

The LSA 4 structure (including the floor) would be RCRA sampled and surveyed to ensure that no contamination had resulted due to potential, but undetected, container integrity issues. If spot

and disposed of as LLW or mixed LLW. Spot contamination found on the structure would be cleaned, and the waste handled appropriately.

The ***Lag Storage Building*** (LSB) is an engineered metal structure that was built in 1984 to store radioactive and mixed waste; it is currently empty. It is supported by a clear-span frame and anchored to a concrete slab foundation. The slab is 10 inches thick at its highest point, and it slopes downward on all sides to a thickness of 8 inches. A 6-inch-high concrete curb encloses the inner perimeter. The slab surface was coated with an acid-resistant, two-coat application of epoxy sealer.

The roof is sloped. Seven continuous ventilators with chain-operated dampers are located on top of the

building was used to simulate hostage rescue operations. It has a light wood frame, waferboard siding and roofing, and crushed stone flooring. Neither building has furniture, plumbing, or electrical facilities.

The ***Lube Storage Locker*** is a metal locker used to store lubrication materials and located on a gravel pad area referred to as the Industrial Waste Storage Area. This structure was never radiologically contaminated.

The ***Maintenance Shop*** is a metal building with steel supports. It houses locker rooms, lavatories, instrument shops, work areas, and a finished office area. Metal-working activities in the Maintenance Shop generated wastes containing metal constituents. The concrete floor is supported by a concrete foundation wall and concrete piers. This building is potentially radiologically contaminated in the concrete and in the overheads.

The ***Maintenance Storage Area*** is a sheet-metal storage area used to store raw materials for use in the Maintenance Shop. This facility was never radiologically contaminated.

The ***Master Slave Manipulator (MSM) Repair Shop*** was constructed around 1971 to allow repair of contaminated MSMs close to their point of use, particularly those in the Process Mechanical Cell, General Purpose Cell, Scrap Removal Room, and laboratories. It is concrete block with structural steel framing, a concrete slab floor, and metal roof deck with sloped built-up roofing. The facility has controlled ventilation, utilities, lighting, an overhead monorail, and decontamination facilities. The floors and tanks were designed to drain to a buried 1,500-gallon tank (15D-6) east of the MSM Shop. The ventilation has been upgraded, a new floor poured, and a stainless steel pan added. Temporary shielding was installed in the southeast corner for additional protection from the HEV filter plenum. The facility contains one lead glass shield window in the north wall that looks in on the Contact Size Reduction Facility. The MSM Repair Shop has low levels of radiological contamination not thought to be significant and a requirement for decontamination would be minimal.

The ***NDA Hardstand***, located near the southeast corner of the NDA, was an interim storage area where radioactive waste was staged before being disposed. The hardstand contains a three-sided structure with cinder-block walls that is located on a sloped pad of crushed rock. The hardstand is radiologically contaminated in the soils from material that was staged for burial.

The ***New Cooling Tower*** provides cooling water to selected systems and equipment. It stands on a concrete basin. The floor of the basin is an 8-inch-thick concrete slab. The basin floor is supported by a retaining wall 4 feet deep. The concrete basin is radiologically contaminated and chemically contaminated with water treatment chemicals, such as corrosion inhibitors and biocides, which have been used as part of normal operations in the cooling tower. Only the above-grade uncontaminated structure would be removed. The basin would be covered to prevent water accumulation. The contaminated basin, including the slab, will be evaluated in the Decommissioning EIS.

The ***New Warehouse*** was built during the 1980s and is located east of the Administration Building and Annex Trailer Complex. It is a pre-engineered steel building resting on about 40 concrete piers and a poured concrete foundation wall. The concrete piers rest on concrete footings. The concrete floor is underlain with a gravel base. The average thickness of the concrete floor is 6 inches. A concrete block firewall divides the warehouse into two sections. Historically, this facility was used to store spare parts, equipment, and chemicals associated with the HLW treatment activities. It is currently empty and is not radiologically contaminated.

The ***O2 Building*** is a steel-framed concrete building with a concrete slab located outside the building. The LLW Treatment Facility in the O2 Building was replaced by an LLW Treatment Facility in the

LLW2. All equipment has been removed from the building and slab. The O2 Building has been significantly decontaminated. Remaining radiological contamination is in both fixed and removable form. Only the above-grade structure would be removed. The removal of the contaminated slab will be evaluated in the Decommissioning EIS. The O2 Building has a relatively small footprint compared with other facilities, but because concrete was used in its construction, it is conservatively assumed that the concrete has been contaminated and that decontamination, demolition, and removal activities would therefore generate a higher volume of LLW than larger facilities constructed of metal and steel.

The ***Old Warehouse*** is a pre-engineered steel building with three sections. The facility supports the storage of spare parts, equipment, and chemicals associated with conduct of the WVDP; in the past, NFS

The ***Road Salt and Sand Shed*** consists of a storage bin and a sand stall on 5-inch-thick blacktop. The blacktop is underlain with 10 inches of stone. This structure was used to store road salt and sand and is not radiologically contaminated. DOE proposes to remove the storage bin and sand stall within the next 4 years. During decommissioning of the site, DOE would contract with a commercial firm for road maintenance as needed.

The ***Schoolhouse***, located south of the WVDP on Rock Springs Road, is a two-room, one-story wood building with clapboard siding. It has asphalt shingles over the original wood shingles and a brick chimney. It has a fieldstone foundation. It was previously used as an environmental laboratory and as a training center, but it is currently being used as a deer check facility during restricted deer hunting at the Western New York Nuclear Service Center (WNYNSC). The schoolhouse was never radiologically contaminated.

The ***Sewage Treatment Plant*** is a wood frame structure with metal siding and roofing. The base of the facility is concrete and crushed stone. Eight tanks are associated with the plant: six in-ground concrete tanks, one aboveground polyethylene tank, and one aboveground stainless steel tank.

Only sanitary waste is treated at the plant. Water treatment chemicals, such as sulfuric acid, sodium hypochlorite, sodium bisulfite, and sodium bicarbonate, have been used at the plant. No hazardous or radiological contamination is known to exist there. Treated wastewater from the Sewage Treatment Plant is discharged to Erdman Brook through a SPDES-permitted discharge.

During decommissioning, of the site, DOE would arrange for portable sanitary facilities for workers involved in decommissioning activities.

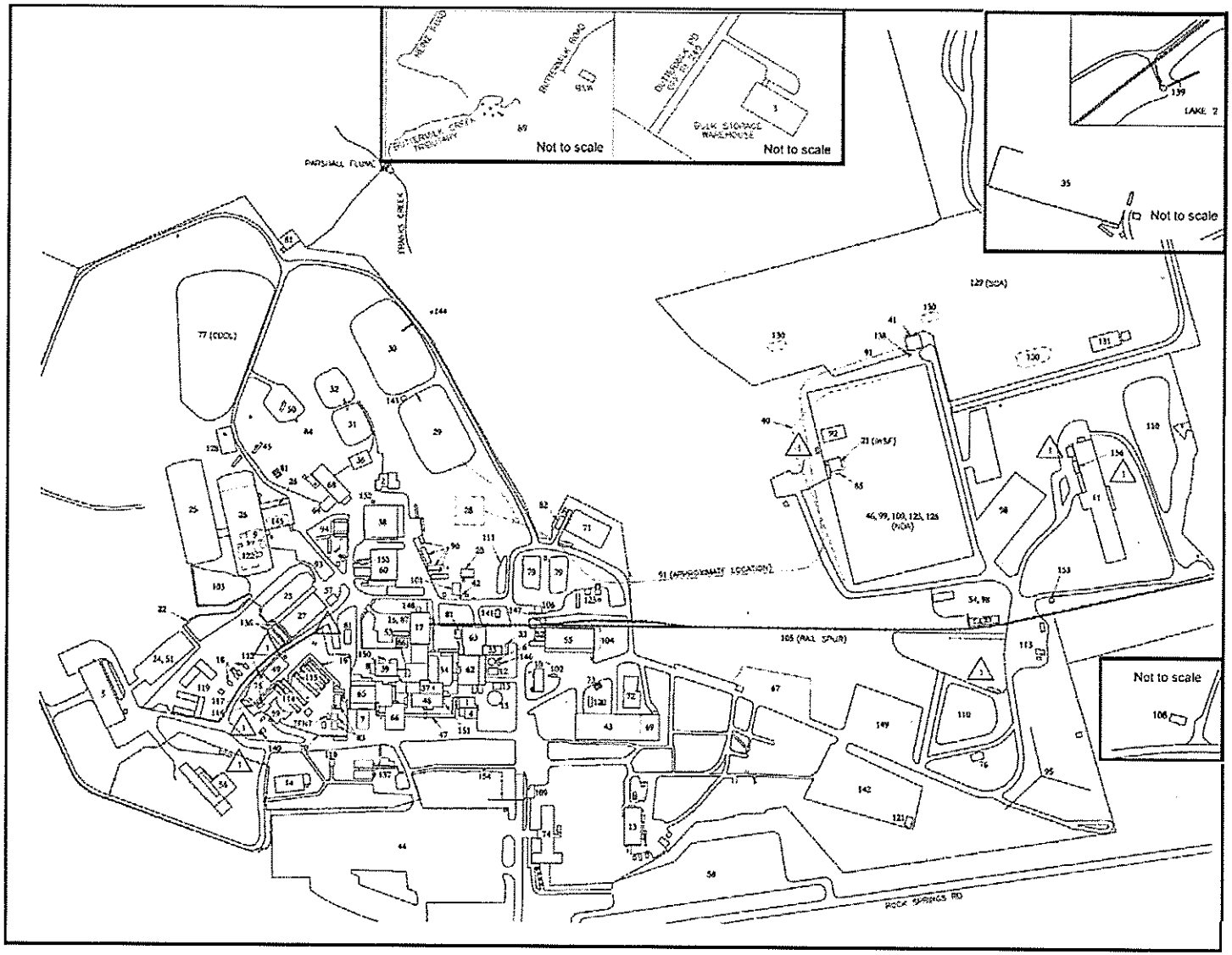
The ***Test and Storage Building*** (TSB), located northeast of the Process Building, has a timber frame, metal siding, and steel beams. The building was initially used to test glass recipes and store glass samples. It currently has office space, the tool crib, and garage space. A concrete block addition houses Radiation

Within the next 4 years, the need for combustible materials storage will have been eliminated or substantially reduced. When the facility function is replaced or is no longer needed by the WVDP, the facility would be removed.

The ***Waste Tank Farm (WTF) Training Platforms*** consist of two training platforms. WTF Training Platform 1, the decant pump and heat exchanger platform, is a pre-engineered structure erected as a stack of six modules including ladders, handrails, and grating. Structural shapes and plates are carbon steel. The grating is galvanized. The modules, ladders, and handrails are bolted together. The exterior "skin" is fabric.

WTF Training Platform 2, the mobilization pump repair platform, is a pre-engineered structure similar to Training Platform 1, but it includes only four modules. These platforms are not radiologically or chemically contaminated. These platforms were constructed as mock-ups to support the replacement of pumps in the Waste Tank Farm. The platforms were above-ground training and practice areas designed to facilitate full-scale mockup of pump replacement activities.

APPENDIX B WVDP FACILITY MAP AND FACILITY NAME CROSSWALK



WVDP Facility Name Crosswalk							
Facility/ System #	GOAT/EIS	WVDP-227/SAR	Site Map	RCRA	ORPS	RFP	SUMP
1	01-14 Building Including Cement Solidification System	01-14 Building Off-Gas				01-14 Building	
2	Low Level Waste Treatment Facility (02 Building)	02 Building				Low-Level Waste Treatment Facility (02 Building)	
3	Bulk Storage Warehouse (BSW)	Bulk Storage Warehouse	Bulk Storage Warehouse			Bulk Storage Warehouse	

WVDP Facility Name Crosswalk

Facility/ System #	GOAT/EIS	WVDP-227/SAR	Site Map	RCRA	ORPS	RFP	SUMP
38	Maintenance Shop	Maintenance Shop				Maintenance Shop	
39	Master Slave Manipulator (MSM) Shop	Master Slave Manipulator (MSM) Shop				MSM Repair Shop	
40	NDA Interceptor Trench	NDA Interceptor Trench Liquid Pretreatment System				Interceptor Trench	
41	NDA Hardstand/ Staging Area						
42	Neutralization Pit	Neutralization Pit				Neutralization Pit	
43	New Warehouse (Main 2)	New Warehouse				New Warehouse (Main-2)	
44	North Parking Lot	North Parking Lot					
45	North Plateau Groundwater Recovery System Pump & Treat	North Plateau Pump System (NPPS)	Includes Wells			North Plateau Groundwater Recovery System Pump & Treat	

WVDP Facility Name Crosswalk							
Facility/ System #	GOAT/BIS	WVDP 227/SAR	Site Map	RCRA	ORPS	RFP	SUMP
79	Demineralizer Sludge Ponds					Demineralizer Sludge Ponds	Sludge Ponds
80	Designated Roadways		Shown but not labled			Designated Roadways	
81	Electrical Substations					Electrical Substation	
82	Equalization (EQ) Tank					Equalization (EQ) Tank	
83	Waste Tank Farm Equipment Shelter and Condenser					Equipment Shelter and Condenser	
84	Fire Brigade Training Area					Fire Brigade Training Area	
85	Former NDA Lagoon (also called "Pete's Pond")					Former NDA Lagoon (also called "Pete's Pond")	
86	FRS Ventilation Building (Recirculation Ventilation System Building)					FRS Ventilation Building	
87	Fuel Receiving & Storage Area's High Integrity Container (HIC) & SUREPAK Staging Area			High Integrity Container Storage Area		Fuel Receiving & Storage Area's High Integrity Container (HIC) & SUREPAK Staging Area	
88	HLW Tanks Pumps		Not shown, Installed in Tank 8D-1 and Tank 8D-2				
89	Hydrofracture Test Well Area					Hydrofracture Test Well Area	
90	Industrial Waste Storage Area Lobe Storage Lockers and 2 Metal Lockers					Industrial Waste Storage Area	
91	SDA Leachate Transfer Line					Leachate Transfer Line	
92	Liquid Pretreatment System		NDA Liquid Pretreatment System			Liquid Pretreatment System (LPS) for NDA Leachate Pretreatment System or Trench Interceptor Project Groundwater Treatment System	
93	Maintenance Shop Leach Field					Maintenance Shop Leach Field	
94	Maintenance Storage Area					Maintenance Storage Area	
95	Meteorological Tower					Meteorological Tower	
96	Miscellaneous Facilities and Storage Areas		Approximately 30 Storage Sheds and Cargo Containers Shown but not labled			Miscellaneous Facilities and Storage Areas	
97	Monitoring Wells/Stations		Not shown			Monitoring Wells/Stations	
98	NDA Trench Soil Container Area		NDA Rolloff Area Hardstand			NDA Trench Soil Container Area	
99	NFS Deep Holes		NDA			NFS Deep Holes	
100	NFS Special Holes		NDA			NFS Special Holes	
101	Old Interceptor					Old Interceptor	
102	Old Sewage Treatment Facility					Old Sewage Treatment Plant Facility	
103	Old/New Hardstand Storage Area					Old/New Hardstand Storage Area	
104	Product Storage Area					Product Storage Area	
105	Rail Spur					Rail Spur	
106	Road-Salt & Sand Storage Shed					Road-Salt & Sand Storage Shed	
107	Satellite Accumulation and 90-Day Storage Areas		Not shown			Satellite Accumulation and 90-Day Storage Areas	
108	Schoolhouse					Schoolhouse	
109	Security Gatehouse and Fences		Fences shown but not labled			Security Gatehouse and Fences	
110	Soil Piles					Soil Piles	
111	Solvent Dike					Solvent Dike	
112	STS Bulk Underground Fuel Oil Tank (50D-09)					STS Bulk Underground Fuel Oil Tank (50D-09)	
113	Subcontractor Maintenance Area					Subcontractor Maintenance Area	
114	Tank 8D-1 (including in-tank STS Components)			Waste Tanks 8D-1 and 8D-2		Tank 8D-1 (including in-tank STS Components)	
115	Tank 8D-2			Waste Tanks 8D-1 and 8D-2		Tank 8D-2	HLW Tanks
116	Tank 8D-3			Waste Tanks 8D-3 and 8D-4		Tank 8D-3	HLW Tanks
117	Tank 8D-4			Waste Tanks 8D-3 and 8D-4		Tank 8D-4	HLW Tanks

WVDP Facility Name Crosswalk							
Facility/ System #	GOAT/EIS	WVDP-227/SAR	Site Map	RCRA	ORPS	RFP	SUMP
118	Vitrification Diesel Fuel Oil Storage Tank & Building (or Diesel Fuel Oil Building)(FOD-11)					Vitrification Diesel Fuel Oil Storage Tank & Building (or Diesel Fuel Oil Building)(FOD-11)	
119	Vitrification Vault and Empty Container Hardstand					Vitrification Vault and Empty Container Hardstand	
120	Warehouse Bulk Oil Storage Unit					Warehouse Bulk Oil Storage Unit	
121 *	Warehouse Hardstand Tents					Warehouse Hardstand Tents	
122	Waste Packaging Area					Waste Packaging Area (WPA)	
123	Waste Tank Farm Test Towers					Waste Tank Farm (WTF) Training/ Test Platforms	
124	Well purge water storage locations		Not shown			Well purge water storage locations	
125	WVDP Caissons		Not shown in NDA			WVDP Caissons	
126	WVDP Trenches		Not shown in NDA			WVDP Trenches	
127	Sealed Rooms		Not shown				
128	Cold Hardstand Near CDDL						
129	SDA-Disposal Trenches		SDA				
130	SDA-Former Lagoons		SDA				
131	SDA-Mixed Waste Storage Facility						
132	North Plateu Groundwater Plume		Not shown				
133	Stream Sediments		Not shown				
134	Cesium Prong		Not shown				
135	Contaminated Soils on Project Premises		Not shown				
136	High Level Waste Tank Pump Storage Vaults						
137	VH Series Trailers						
138	SDA Leachate Pumphouse						
139	Lakes Pumps						
140	Nitrogen Storage Tank						
141	Above-ground Diesel Fuel Tank 31D-01						
142	AA Hardstand						
143	Lagoon 2 Pumphouse						
144	Lagoon 3 Weir Shed						
145	Shipping Depot Containment						
146	Demineralized Water Tank						
147	Waste Paper						