Sta# 4 (15) AUG 05 1999	ENGINEERING DATA TRANSMITTAL	Page 1 of 1 1. EDT 627754
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2. To: (Receiving Organization) Distribution	3. From: (Originating Organization) KS Tollefson / 373-3035	4. Related EDT No.: N/A
5. Proj./Prog./Dept./Div.: River Protection Project (RPP)	6. Design Authority/Design Agent/Cog. Engr.: K. A. White / KS Tollefson	7. Purchase Order No.: N/A
8. Originator Remarks: This Document is the Environmental Permitting Plan for Project W-521. This Document is being issued for approval, release and use on Project W-521 for approval		9. Equip./Component No.: 10. System/Bldg./Facility: AN/AW/AZ/SY/AY Tsnk Fa
11. Receiver Remarks:		12. Major Assm. Dwg. No.: N/A
11A. Design Baseline Document? ☐ Yes ☒ No		13. Permit/Permit Application No.: NA
		14. Required Response Date: 8/15/99

15. DATA TRANSMITTED					(F)	(G)	(H)	(I)
(A) Item No.	(B) Document/Drawing No.	(C) Sheet No.	(D) Rev. No.	(E) Title or Description of Data Transmitted	Approval Designator	Reason for Transmittal	Originator Disposition	Receiver Disposition
1	HNF-4270, <i>Rev</i> ^{8/5/99}	-	0	Project W-521 Waste Feed Delivery Systems Environmental Permits And ^{KT} Permits And Approvals Plan	E	1	1	

16. KEY			
Approval Designator (F)	Reason for Transmittal (G)	Disposition (H) & (I)	
E, S, Q, D OR N/A (See WHC-CM-3-5, Sec. 12.7)	1. Approval 2. Release 3. Information 4. Review 5. Post-Review 6. Dist. (Receipt Acknow. Required)	1. Approved 2. Approved w/comment 3. Disapproved w/comment 4. Reviewed no/comment 5. Reviewed w/comment 6. Receipt acknowledged	

17. SIGNATURE/DISTRIBUTION (See Approval Designator for required signatures)											
(G) Reason	(H) Disp.	(J) Name	(K) Signature	(L) Date	(M) MSIN	(G) Reason	(H) Disp.	(J) Name	(K) Signature	(L) Date	(M) MSIN
1	2	Design Authority	KA White	<i>KA White</i>	S5-13	1		(Prog) WT Thompson	<i>WT Thompson</i>	R3-73	KT
		Design Agent	N/A	<i>KS Tollefson</i>	R1-51	1	1	(WFD) RL Treat	<i>RL Treat</i>	R3-75	7/22/99
1	1	Cog. Eng.	KS Tollefson	<i>KS Tollefson</i>	R1-51	1	1	(Proj) WT Thompson	<i>WT Thompson</i>	R3-73	7/22/99
1	1	Cog. Mgr.	Envir Mgr BG Erlanson	<i>BG Erlanson</i>	R2-89	1	1	(Proj) TJ Conrads	<i>TJ Conrads</i>	R3-73	7/22/99
3	3	QA	JF Bores	<i>JF Bores</i>	R2-89	1	1	(Proj) PJ Brackenbury	<i>PJ Brackenbury</i>	R3-73	7/22/99
3	3	Safety	WT Dixon	<i>WT Dixon</i>	R3-01						
1	1	Env.	WFD Envir) RD Potter	<i>RD Potter</i>	R3-73						

18. Signature of EDT Originator <i>Kathy S Tollefson</i> Date: <i>7/29/99</i>	19. Authorized Representative for Receiving Organization <i>TJ Conrads</i> Date: <i>7/22/99</i>	20. Design Authority/Cognizant Manager <i>KA White</i> Date: <i>8/4/99</i>	21. DOE APPROVAL (if required) Ctrl No. N/A ☐ Approved ☐ Approved w/comments ☐ Disapproved w/comments
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PROJECT W-521, Waste Feed Delivery Systems Environmental Permits And Approvals Plan

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Lockheed Martin Hanford Corporation

Richland, WA 99352

U.S. Department of Energy Contract DE-AC06-96RL13200

EDT/ECN: 627754

UC: 2030

Org Code: 7B200

Charge Code: 101785

B&R Code: EW3120071

Total Pages: ~~656~~ 64 (JICB 8/5/99)

Key Words: Environmental, permits, Project W-521, RCRA, NEPA, air emissions, notice of construction, Waste Feed Delivery Systems, plan, air, SEPA

Abstract: This document has been prepared to define the specific environmental requirements applicable to Project W-521. The document describes the permits and approvals necessary for the project to design, construct, and install planned upgrades, and provides a schedule of activities and provides cost estimates to complete the required permitting and approval activities.

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Release Approval Date 8/4/99

Release Stamp

Approved For Public Release

**PROJECT W-521, WASTE FEED DELIVERY SYSTEMS
ENVIRONMENTAL PERMITS AND
APPROVALS PLAN**

(June 1999)

Prepared for
Lockheed Martin Hanford Corporation
Richland, Washington

by

Waste Management Federal Services of Hanford, Inc.

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GLOSSARY

AJHA	automated job hazard analysis
ALARA	as low as reasonably achievable
ALARACT	as low as reasonably achievable control technology
AOP	air operating permit
BARCT	best available radionuclide control technology
BCCAA	Benton County Clean Air Authority
BCHD	Benton County Health Department
BHI	Bechtel Hanford, Inc.
BIA	Bureau of Indian Affairs
CAA	<i>Clean Air Act of 1977</i>
CAM	continuous air monitor
CDR	conceptual design report
CERR	cultural/ecological resource review
CFR	Code of Federal Regulations
CRR	Cultural Resources Review
CX	categorical exclusion
D&D	decontamination and decommissioning
DCRT	double-contained receiver tank
DNR	Washington State Department of Natural Resources
DOE	U.S. Department of Energy
DOE-ORP	U.S. Department of Energy, Office of River Protection
DOE-RL	U.S. Department of Energy, Richland Operations Office
DST	double-shell tank
EA	environmental assessment
ECO	environmental compliance officer
Ecology	Washington State Department of Ecology
EDE	effective dose equivalent
EIS	environmental impact statement
EMP	environmental monitoring plan
EPA	U.S. Environmental Protection Agency
FDH	Fluor Daniel Hanford, Inc.
FEMP	facility effluent monitoring plan
FONSI	finding of no significant impact
FY	fiscal year
gpd	gallons per day
HLW	high-level waste
HMI	human machine interface
HNF	Hanford Nuclear Facility (document identifier)
ID	identification

GLOSSARY (cont)

LAW	low-activity waste
LLMW	low-level mixed waste
LLW	low-level waste
MAP	mitigation action plan
mrem	millirem
MPS	master pump shutdown
NEPA	<i>National Environmental Policy Act of 1969</i>
NESHAPs	National Emissions Standards for Hazardous Air Pollutants
NOC	notice of construction
NOI	notice of intent
NRC	Nuclear Regulatory Commission
NSR	new source review
PC	private contractor
PHMC	Project Hanford Management Contract
PNNL	Pacific Northwest National Laboratory
PSD	prevention of significant deterioration
QA	quality assurance
RCRA	<i>Resource Conservation and Recovery Act of 1976</i>
ROD	record of decision
RPP	River Protection Project
SA	(EIS) supplement analysis
SAP	sampling and analysis plan
SC	safety class
SEPA	<i>State Environmental Policy Act of 1971</i>
SPC	special protective coating
SST	single-shell tank
TAPs	toxic air pollutants
T-BACT	best available control technology for toxics
TFRSO	tank farm restoration and safe operation
TSD	treatment, storage, and/or disposal
TWRD	Tank Waste Retrieval and Disposal
UIC	underground injection control
USC	United States Code
USFWS	U.S. Fish and Wildlife Service
UST	underground storage tank
VFD	variable frequency drive
VPI	value position indicator

GLOSSARY (cont)

WAC	Washington Administrative Code
WDOH	Washington State Department of Health
WFD	waste feed delivery
WMH	Waste Management Federal Services of Hanford, Inc.
WMNW	Waste Management Federal Services, Inc., Northwest Operations

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PROJECT W-521, WASTE FEED DELIVERY SYSTEMS ENVIRONMENTAL PERMITS AND APPROVALS PLAN

1.0 INTRODUCTION

This document describes the environmental actions including required permits and other agency approvals affecting waste feed delivery systems, Project W-521, for the Hanford Site River Protection Project (RPP). This document, referred to hereinafter as the Project W-521 environmental plan, presents a strategy and plan for meeting environmental requirements for retrieval of high-level waste (HLW) and low-activity waste (LAW) from nine double-shell tanks (DSTs).

An environmental requirements checklist and narrative titled "Environmental Requirements Checklist For Project W-521" (LMHC interoffice memorandum #7B200-99-038) was developed to identify the permitting path forward for the project (refer to Appendix A). Project W-521 will cover the procurement and installation of equipment and preparation to retrieve the waste. Actual retrieval and transfer of the waste, conditioning, and lag storage until further treatment of the waste (vitrification) will be managed by RPP operations. This Project W-521 environmental plan will follow the environmental permitting logic developed in the checklist, and addresses the waste retrieval actions as one continuous activity. Appendices provide a summary of permits/approvals, planning assumptions, cost estimates, and schedule information for implementing the selected strategies.

1.1 SCOPE OF WORK

Project W-521 personnel will be responsible for installing equipment for mixing and/or retrieval of waste from nine DSTs, AZ-101, AN-102, AW-101, AW-103, AY-101, AN-101, AN-106, SY-101, and AN-107, for delivery to a private contractor for vitrification. For this Project W-521 environmental plan, it has been assumed that project personnel will be responsible for installing a new valve pit near the northeast corner of the AP Tank Farm, along with associated piping, to provide a waste feed transfer interface with the private contractor. The scope of work for Project W-521 is detailed in Table 1-1 and in the following discussions. This scope provides the planning basis for the environmental permitting requirements, planning assumptions, and a cost estimate presented in Appendices A, B, and C. An environmental permitting schedule is presented in Appendix D.

Waste in several tanks has been designated as an early source of HLW feed for the PC and the other tanks similarly have been designated as LAW feed/dilution sources.

Essential new transfer lines to support LAW feed delivery from the 200 East Area DSTs to the vitrification facility will be installed as part of this project and presently are scheduled to be available in 2005.

Table 1-1. Project W-521 Work Scope, by Tank.

Project tasks	Impacts
AN-101 (LAW, salt slurry staging tank)	
<ul style="list-style-type: none"> • Install new mixer pump(s) in the central pump pit, with variable frequency drive (VFD) • Install a transfer pump with VFD • Install a new transfer pump pit located on the periphery of the primary tank over a convenient 12-inch or 24-inch riser • Install piping from the transfer pit via the central pit to existing AN Tank Farm transfer system • Install monitoring instrumentation to central control building. Install valve position indicator (VPI) and tie to master pump shutdown (MPS) system • Upgrade the programming performed by Project W-211 to accommodate these additions; (applies to all tanks). 	<ul style="list-style-type: none"> • Installation of in-tank pumps will require opening risers and could require special ventilation controls, radiation control monitoring, and greenhouse work • Work with open risers also could require temporary air emissions monitoring outside the tank farm boundary. • Installation of new pit and transfer piping will require excavation permit. • Installation of monitoring instrumentation and tie-in to central control building could require greenhouse and as low as reasonably achievable (ALARA) task controls. • Work in a radiation control area will require radiation control monitoring and control of all secondary solid low-level waste (LLW), before disposal. • Shutting down the pump(s) could require that the transfer line be drained quickly before excess solids settle in the transferring waste. This could require a reverse flush operation and also could return additional waste slurry under pressure into the source tank, generating excess particulates in the exhaust air stream. • Assume acquisition of suitable disposal container occurs; pump becomes part of secondary solid waste stream.
AN-102 (LAW, decant only)	
<ul style="list-style-type: none"> • Upgrade the transfer pump • Install electrical upgrades • Install a VFD • Replace all jumpers in the central pump pit • Provide for connection of VPI and MPS • Remove and dispose of an existing transfer pump, and install a new transfer pump. 	<ul style="list-style-type: none"> • General impacts are similar to those for AN-101 tank. • Assume that minimal decontamination of excess equipment will be needed; assume that any wash down of tank equipment will allow rinsate to be drained into the same tank. • Assume that all 241-AN in-farm equipment would be installed and qualified, before any transfers. • Assume acquisition of suitable disposal container occurs; pump becomes part of secondary solid waste stream.
AN-106 (LAW staging tank; receives supernate from decanting AN-107)	
<ul style="list-style-type: none"> • Install new mixer pump(s) in the central pump pit with VFD • Install a transfer pump with VFD • Install a new transfer pump pit located on the periphery of the primary tank over a convenient 12-inch or 24-inch riser • Provide piping from the transfer pit via the central pit to existing AN tank farm transfer system • Provide VPI and tie to the MPS. 	<ul style="list-style-type: none"> • General impacts and assumptions would be the same as for AN-101 tank. • Installation of in-tank pumps will require opening risers and could require special ventilation controls, radiation control monitoring, and greenhouse work. • Work with open risers also could require temporary air emissions monitoring outside the tank farm boundary. • Installation of new pit and transfer piping will require an excavation permit. Work in a radiation control area will require radiation control monitoring and control of all secondary solid LLW before disposal. • Installation of monitoring instrumentation and tie-in to central control building could require greenhouse and ALARA task controls. • Assume acquisition of suitable disposal container occurs; pump becomes part of secondary solid waste stream.
AN-107 (LAW, decant only)	
<ul style="list-style-type: none"> • Upgrade the transfer pump • Install electrical upgrades • Install a VFD. • Replace jumpers in the central pump pit • Provide for connection of VPI and MPS • Remove and dispose of an existing transfer pump • Provide VPI and tie to the MPS. 	<ul style="list-style-type: none"> • Decanting process takes only the supernate fluid and leaves the settled solids, containing the primary radioactive components. • General impacts would be similar to those for AN-101 tank. • Assume that minimal decontamination of excess equipment will be needed. Assume that any wash down of tank equipment will allow rinsate to be drained into the same tank. • Assume that all 241-AN in-farm equipment will be installed and qualified before any transfers. • Assume acquisition of suitable disposal container occurs; pump becomes part of secondary solid waste stream.

Table 1-1. Project W-521 Work Scope, by Tank.

Project tasks	Impacts
AW-103 (HAW)	
<ul style="list-style-type: none"> • Install new mixer pump(s) • Install a new caustic dilution system • Install a line from the new system to AW-A and AW-B valve pit • Install a new nozzle and jumper from L-10 to the jumper manifold • Tie-in VFD, MPS, and VPI to central control and reprogram control system • Add a new transfer pump and jumpers. 	<ul style="list-style-type: none"> • General impacts and assumptions would be similar to those for AN-101 tank. • Installation of in-tank pumps requires opening tank riser; could require greenhouse work and ALARA task controls. • Work in a radiation control area will require radiation control monitoring, and could require temporary air emissions monitoring outside the tank farm boundary. • Caustic system could require drip collection/control. • Installation of jumpers in pits could require ALARA task controls. • Tie-in of line to valve pit would require an excavation permit, and could require greenhouse and ALARA task controls. • Tie-in of instrumentation and pump controls to central building could require an excavation permit. • Removal/storage of pit covers could require decontamination and could contribute to secondary solid waste stream. • Assume acquisition of suitable disposal container occurs; pump becomes part of secondary solid waste stream.
AY-101 (HLW, salt cake and slurry)	
<ul style="list-style-type: none"> • Install new mixer pump(s) and VFDs • Install transfer piping and jumpers from the AN dilution system caisson (by Project W-211) to the applicable pump pit in AY Tank Farm • Install a new transfer pump and VFD • Install new jumpers for AY-01-A pit • Design, construct, and install new cover block for AY-01-A pit • Add VPI and tie-in to MPS system. 	<ul style="list-style-type: none"> • General impacts and assumptions would be similar to those for AN-101 tank. • Installation of pumps inside the tank would require opening riser(s). Installation would require radiation control monitoring and could require temporary air emissions monitoring outside the tank farm boundary. • Open tank and open pit tie-in work could require greenhouse and ALARA task controls. • Transfer line installation could require an excavation permit, unless line is run above ground, with berms for shielding. • Tie-in of valve indicator and other instrumentation monitoring to central control building could require an excavation permit. • Work in a radiation control area could require radiation control monitoring and could require ALARA task controls. • Assume acquisition of suitable disposal container occurs; pump becomes part of secondary solid waste stream.
SY-101 (LAW, flammable gas, very thick slurry)	
<ul style="list-style-type: none"> • Install new mixer pump(s) and VFD • Add new transfer pump and VFD • Install new jumper manifolds in SY-A and B valve pits • Install new VPI to interface with Project W-314. 	<ul style="list-style-type: none"> • This is a flammable gas tank, which has a history of uncontrolled releases of flammable gas and waste rollovers. • All activities must be done under the existing safety basis. • Permits for the air emissions potential at both the SY Tank Farm and the cross-site transfer vent station could need revisions due to specific source terms for the waste. • Work in pits could require greenhouse and ALARA controls. • Other assumptions would be similar to AN-101 tank. • Tie-in of monitoring and controls could require an excavation permit because of work in a radiation control area. • Assume acquisition of suitable disposal container occurs; pump becomes part of secondary solid waste stream.

Project tasks	Impacts
AZ-101 (HLW/HAW, aging waste)	
<ul style="list-style-type: none"> • Upgrade electrical system(s) necessary to ensure load transfer capability between AZ-101 and AZ-102 and accommodate addition of new electrical equipment to AZ-101 • Install instrumentation to monitor suspended solids during realtime mixing activities and tie-in to the W-211 monitoring and control system. • Install a new generation transfer pump and VFD • Install a new caustic dilution system connection to the transfer pump suction and line from the transfer pump to the skid located between AN Tank Farm and AZ-101 • Install a line from the transfer pump to the skid located between AN Tank Farm and the AZ-101 transfer pump, estimated to be ~500 feet of 3-inch double containment piping. • Install a jumper manifold system in 01-A pit • Install a connection on 42-inch transfer pump riser for accommodating drain from the new AZ valve pit installed by Project W-211 • Install instrumentation and controls for running the transfer pump and upgrade the existing software (programming) to support the upgrades • Upgrade the programming performed by Project W-211 to accommodate these additions • Repair the valve pit special protective coating (SPC). • Design, construct, and install new pit cover blocks in 01-A pit. • Install leak detector instrumentation supplied by W-314 • Install a VPI on all valves and provide interfacing hardware necessary to tie-in to Project W-314 MPS system and HMI system. Tie-in controls to Project W-211 monitoring system • Install ventilation upgrades to accommodate the chemical releases caused by the addition of mixer and transfer pumps. Cut and tie-in W-030 vent system to accommodate the discharge from the new system • All piping is guarded (i.e., pipe-in-pipe). Provide cathodic protection for this new guarded pipe; provide annulus system upgrades as necessary. 	<ul style="list-style-type: none"> • Excavation inside Tank Farm could require special conditions on an excavation permit, plus continuous radiation control monitoring. • Installation of monitoring equipment could require ALARA controls for task. • Installation of pump(s) inside tank could require greenhouse work. • New pit jumper installation could require ALARA controls. Opening pit covers could require special boundary monitoring. • Interconnecting instrumentation controls to central control building could require radiation control coverage, ALARA work controls, and greenhouse work. • Installation work inside radiation control areas could generate LLW, requiring special disposal effort. • Old cover blocks would require detailed decontamination and decommissioning (D&D) before disposal. • Caustic dilution/injection system would require drip collection system, in preference to reporting releases. • All new transfer lines outside the interconnection pits would require double containment. • Assume that new software programming could be suitably debugged and validated offline while current system was modified. • Some special components would require safety class (SC) (SC-1) designation to meet waste handling requirements. • Tie-in to existing waste systems could require greenhouse work controls, based on the automated job hazard analysis (AJHA) and ALARA reviews. • Ventilation system upgrade could require extensive permit revision and a second operational readiness review, similar to that for Project W-030. • Ventilation upgrades are assumed to include an adsorber and carbon bed, tall ventilation discharge stack, and monitoring for both radiation and gaseous emissions; assume the addition to be a safety grade system. • Assume acquisition of suitable disposal container occurs; pump becomes part of secondary solid waste stream

1.1.1 Design, Procurement, Installation, and Training

Project W-521 will provide the equipment necessary to ready the waste for retrieval and transport. This includes the design, installation, preparation for use, training of key personnel, and all other support actions for turnover of the equipment to tank farm operations. At this time, the equipment is intended for waste retrieval from nine DSTs; other additional waste retrieval equipment and transfer projects/system components could be added later to increase the scope of applicability. Project W-521 personnel also will have overall systems responsibility for providing the documentation and analysis necessary to secure approval of the completed systems to deliver the waste to the PC. All Project W-521 construction activities will be performed inside or near the vicinity of the 241-AN, AW, AY/AZ, and 241-SY Tank Farms. Activities planned under by Project W-521 include the following:

- **Installation of a slurry transfer pumps**--to transfer the thoroughly mixed waste to feed staging tanks after complete mobilization has been demonstrated. If it is determined that the AZ-101 mixer pumps will not meet the performance requirements for waste feed delivery, the project will implement improvements or alternatives to the installed mixer pumps). Generally, a new process jumper assembly will be required to direct the mobilized waste slurry from the transfer pump discharge to the transfer line nozzle.
- **Installation of fixed transfer pumps in AN-102 and AN-107**--to decant supernatant above the settled solid layers in these tanks for delivery to the vitrification facility. New process jumper assemblies will be required to direct the supernatant from pump discharges to transfer line nozzles in an adjacent diversion box.
- **Pump installation**--all of the designated Project W-521 tanks will have at least one new pump installed. The installation usually will require opening a riser, and also could require a greenhouse to surround the task area. This document assumes that such installations could be undertaken as a normal maintenance action and that the AJHA process suitably will include all necessary personnel protection controls, including the ALARA analysis. Installation sometimes could require retrieval of an existing pump, which would become part of the secondary solid waste stream. Disposal could require decontamination of the exiting pump and possibly special packaging requirements, which are outside the scope of this document
- **Removal and replacement of the pit cover blocks and/or modification of the pits**--to support installation of the new transfer and decant pumps and new jumpers. Support equipment for the decant pumps will include electrical power supplies and instrumentation leads to monitor/control pump operation and waste transfers. Some shallow excavation work could be required to install electrical conduit. VFDs will be installed in adjacent facilities to operate the transfer and decant pumps at different speeds.

It is assumed that existing cover blocks would be replaced when Project W-521 scope installations are complete. In the interim, removed cover blocks probably would be wrapped in plastic sheeting and set aside within the applicable tank farm. When new cover blocks are fabricated, the excessed blocks either might need to be decontaminated or have an extensive packaging analysis performed to be suitably disposed in a landfill.

- **Installation of new transfer pump pits and a new valve pit**--to support relocation of transfer pumps from the central pump pits in order for installation of mixer pumps. The new valve pit will be install outside of the 200E area immediately adjacent to the 241-AP tank farm to interface with the private contractor facility.
- **Installation of a chemical addition system**--to support caustic dilution and flushing of the transfer lines in both the 241-AW and 241-AZ Tank Farms with inhibited (NaOH) raw water (241-AZ would share the 241-AN system installed by Project W-211 and create a new system for 241-AW Tank Farm). This flushing is intended to remove deposited solids, minimize corrosion, and reduce the dose associated with waste in the transfer lines. The chemical addition system would include a chemical makeup skid located just outside the affected tank farms, with connecting piping inside to the transfer pump pits (the piping could be constructed either above or below grade). Caustic will be delivered by tank truck to the makeup area where the caustic would be combined with raw water before being transferred to the affected pump pit. Inhibited water would be routed into the transfer line via either the pump suction or pump discharge.

1.1.2 Miscellaneous Support Actions

To prevent reverse flow and water hammer provisions will be made in the new transfer systems. Instrumentation with remote readout capability would be used to monitor pump speed, motor current, system pressures, and flow rates. At least part of the retrieval/transfer operation would be automated. Programmable logic controllers or a fully equipped, standalone personal computer and appropriate software would be defined and specified for each transfer. Considering the long lead times needed for proof of operation, switching a single all-purpose personal computer from tank to tank would not be considered optimal. Tanks SY-102, AW-101, AN-104 and AN-105 were equipped with an in-tank monitoring capability (closed-circuit television) under Project W-211. This capability would be added to the tanks covered by Project W-521 activities before actual retrieval.

1.2 STRUCTURE AND CONTENT OF THE PROJECT W-521 ENVIRONMENTAL PLAN

Program-level environmental strategies for delivering waste feed in support of the tank waste retrieval and disposal (TWRD) mission are described in the *Waste Feed Delivery Environmental Permits and Approvals Plan* (HNF-2401). The information, methodologies, and strategies developed and evaluated in HNF-2401 establish a supporting basis for the more detailed, project-specific analysis provided in this Project W-521 environmental plan. This Project W-521 environmental plan focuses only on environmental actions necessary to support Project W-521, up to the point of declaring readiness to proceed with retrieval and transfer of the actual waste out of each of the nine tanks. Key objectives include the following:

- Determine the environmental requirements that could be expected to apply to Project W-521
- Develop environmental planning assumptions applicable to Project W-521
- Identify the permits, approvals, and other mandatory environmental compliance actions that must be satisfied for Project W-521
- Recommend approaches and specific actions to acquire needed permits and approvals, achieve environmental compliance, and recommend a preferred approach and/or specific action

- Estimate cost and schedule to implement the recommended environmental actions and provide support during design and construction for Project W-521, before declaring readiness to proceed with retrieval and transfer of waste.

The first of these objectives, determining environmental requirements, is satisfied partially by the broad regulatory screening provided in HNF-2401. A more detailed analysis of applicable standards is performed in the Project W-521 environmental requirements checklist (Appendix A). This checklist summarizes the results of this detailed analysis of the potentially relevant environmental standards for Project W-521. Those standards determined to be applicable are evaluated further for permit, approval, and other compliance actions in the main body of this Project W-521 environmental plan. Consequently, the rest of this plan is organized as follows.

- **Section 2.0--National and State Environmental Policy Acts.** This section addresses federal and state obligations to consider the full range of environmental, human safety, and socio-economic impacts of projects and activities.
- **Section 3.0--Air Quality Protection.** This section addresses actions that could emit hazardous (chemical and/or radiological) constituents into the air.
- **Section 4.0--Environmental Exposures.** This section addresses the need to ensure public and onsite personnel protection against radiation and hazardous material exposure routes.
- **Section 5.0--Dangerous Waste Management.** This section addresses actions associated with generating, treating, storing, and/or disposing of dangerous and mixed waste streams.
- **Section 6.0--Miscellaneous Assessments, Permits, and Approvals.** This section addresses other, more general requirements, such as preserving cultural resources and protecting endangered species habitats.
- **Section 7.0--References.**

Each of these sections (except the References) briefly summarizes the key environmental requirements, the relevancy to Project W-521, and associated permit and approval processes. In most cases, the path forward is based on needs and schedules, but alternative compliance approaches are discussed if these exist and if relative advantages and disadvantages need to be assessed. Specific actions (e.g., applying for permits, submitting approval requests, establishing monitoring programs) for implementing the relevant requirements and recommended compliance approaches are described. Each of these actions depends on the completion of separate, usually sequential tasks (e.g., assembly of application data, submittal to the agency, response to comments). Assumptions for planning these tasks, and cost and schedule estimates for implementing the tasks, are described in Appendices B and C. Appendix D provides a schedule linking the strategy for acquiring the environmental permits and approvals with the Project W-521 planning basis.

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2.0 NATIONAL AND STATE ENVIRONMENTAL POLICY ACTS

The *National Environmental Policy Act* (NEPA) of 1969 was enacted to ensure that environmental matters are considered before federal actions are initiated that might affect the quality of the human environment. The *State Environmental Policy Act* (SEPA) of 1971 (Chapter 43.21C Revised Code of Washington) is the Washington State equivalent of NEPA, and requires evaluation of environmental impacts associated with a project or an agency action before approval of the project or action is granted.

2.1 SUMMARY OF KEY REQUIREMENTS

The U.S. Department of Energy (DOE) regulation [Title 10 of the Code of Federal Regulations (CFR) Part 1021] promulgated under NEPA was developed to conform with 40 CFR Parts 1500-1508 regulations and to categorize the environmental impacts associated with various DOE proposals or actions. The NEPA standards require that environmental considerations are identified and evaluated early in the planning process for all proposed federal actions. Only DOE and/or U.S. Department of Energy, Richland Operations Office (DOE-RL) can approve the correct level of NEPA review on the Hanford Site.

The types of NEPA documentation that might be required for reviewing federal actions include the following:

- Environmental impact statement (EIS)
- Supplement analysis (SA)
- Environmental assessment (EA)
- Categorical exclusion (CX)
- Site-wide categorical exclusion (SWCX).

More detail on NEPA documentation requirements and the NEPA approval processes can be found in the NEPA Compliance procedure (HNF-PRO-452) and the NEPA Source Guide (HNF-SP-0903). Both are available on the Hanford Intranet.

The SEPA Rules, Chapter 197-11 of the Washington Administrative Code (WAC) are promulgated and managed by the Washington State Department of Ecology (Ecology). SEPA requires evaluation by a state or local agency of environmental impacts associated with an action under its jurisdiction before approval by the agency. On the Hanford Site, the SEPA process begins when approval(s) or modification(s) (e.g., license, permit) must be obtained for a proposed action to proceed. When a proposed action has been addressed under NEPA, Ecology could be asked to adopt or concur with the NEPA documentation. More detail on SEPA documentation and the SEPA approval processes is found in HNF-PRO-452.

2.2 APPLICABILITY TO PROJECT W-521 ACTIONS

Proposed actions for Project W-521 include in-tank installation of several pumps and associated valve-pit hardware. These actions also includes related support activities such as instrumentation, electrical, and infrastructure upgrades. These actions are subject to consideration under NEPA and also SEPA, because of required state permits and approvals. As discussed in HNF-2401, a substantial body

of NEPA documentation exists with respect to waste feed delivery activities and projects. Current NEPA documentation, directly and indirectly addressing Project W-521, includes the following:

- The TWRS Environmental Impact Statement (DOE/EIS-0189F) and Record of Decision (ROD) (62 FR 8693)
- The Safe Interim Storage EIS (DOE/EIS-0212) and ROD (60 FR 61687)
- The TFRSO/Project W-314 SA (DOE/EIS-0189-SA1)
- The TWRS SA (DOE/EIS-0189-SA2).

This NEPA documentation anticipated and addressed the impacts associated with Project W-521 and supporting projects and was prepared with substantial involvement by Ecology. The TWRS EIS was issued jointly by DOE and Ecology. Ecology has concurred with the Phased Implementation alternative selected by DOE in the TWRS ROD. Ecology comments were included in the Tank Farm Restoration and System Operations (TFRSO)/Project W-314 and TWRS SAs. To date, Ecology has accepted the published NEPA documentation in lieu of independent SEPA reviews.

2.3 SATISFYING APPLICABLE REQUIREMENTS

HNF-2401 discussed several alternative approaches for satisfying applicable NEPA and SEPA requirements. These ranged from relying on existing NEPA/SEPA documentation, to supplementing existing materials, and to preparing completely new documentation. The key discriminator for selecting an approach is the degree of coverage, or 'environmental bounding', addressed by the available NEPA/SEPA documentation. In general, if the types and extent of environmental impacts associated with a proposed action are described adequately in existing documentation along with the associated ROD or Finding of No Significant Impact (FONSI), NEPA and SEPA would be satisfied and no further documentation is required. If the environmental impacts are not bounded adequately, additional review and assessment are needed.

To support development of this Project W-521 environmental plan, the scope of work was evaluated relative to existing NEPA documentation and related SEPA determinations. The following sections describe the recommended approach to satisfy the applicable NEPA and SEPA requirements.

2.3.1 Recommended NEPA Approach

Under NEPA, additional NEPA documentation is not required as a project moves from conceptual design to detailed design and construction, unless there is a reasonable basis for concern that changes to the project would result in environmental or human health impacts that substantively exceed those considered in existing NEPA documentation. NEPA anticipates that EISs will be prepared based on conceptual designs and that changes will occur in the selected alternative as it moves toward implementation. In fact, NEPA should be completed early in the design process to allow decisions to be made before making irretrievable commitments of resources or using the NEPA process to support decisions that already have been made. Minor changes in design, schedule, or equipment should not trigger a NEPA requirement for any level of NEPA analysis unless there is some basis to assume a substantive change in environmental and human health impacts. A change alone does not require NEPA analysis.

The final TWRS EIS (DOE/EIS-0189F) evaluated environmental impacts associated with upgrading tank farm infrastructure, including waste transfer, instrumentation, ventilation, and electrical systems. In

addition, the TFRSO/Project W-314 SA (DOE/EIS-0189-SA1) expanded on the TWRS EIS to address environmental impacts associated with the following.

- **Ventilation System Upgrades** – Project W-314 will provide upgrades to the 241-AZ farm ventilation system that was upgraded for radioactive air emissions under Project W-030. Upgrades are planned to control chemical air emissions by Project W-521.
- **Tank Farm Instrumentation and Control Systems Upgrades** – Existing tank monitoring systems would be replaced and/or upgraded for measuring waste level, temperature, and vapor pressure. Primary ventilation instrumentation for all DSTs would be upgraded. Existing leak detection systems and the MPS system would be upgraded or replaced.
- **Electrical System Upgrades** – Existing power for the primary ventilation systems would be modified and upgraded to provide backup power capabilities for primary ventilation systems in 241-AP, 241-AN, 241-AW, and 241-AZ Tank Farms, among others.
- **Transfer System Upgrades** – The Project W-521 pump installation is of the same nature as that for Project W-211, which was determined to be suitably bounded by the existing NEPA documentation.
- **Demolition** – Minimum demolition of existing systems and equipment would take place under the proposed Project W-521 action. Critical interfacing and confinement components (e.g., existing seal pots and all underground electrical systems, process piping, and ventilation piping) would be replaced by Project W-314. These would be placed in a safe configuration before completion of Project W-521.

Based on the Project W-314 Supplement analysis (DOE/EIS-0189-SA1), the potential impacts for Project W-521 would be small, of a minor additive nature, and bounded by the impacts assessed for the TWRS EIS preferred alternative. Therefore, a determination likely would conclude that no additional NEPA analysis is required. A memo-to-file documenting this determination would conclude the review. However, until DOE and/or DOE-RL concur with and make this determination, a conservative planning assumption was used for estimating purposes. This assumption concludes preparation of a SA will be necessary.

Because deactivation, closure, and additional construction of transfer lines are outside the scope of Project W-521, a mitigation action plan should not be needed. Any other mitigation actions, if applicable, would be identified in the Cultural and Ecological Resource Reviews discussed in Section 6.1.1.

2.3.2 Recommended SEPA Approach

As documented in Appendix A, Project W-521 is considered to require appropriate SEPA documentation. As discussed, there is existing NEPA documentation addressing the Project W-521 scope (DOE/EIS-0189F, 62 FR 8693, and DOE/EIS-0189-SA1). The NEPA documentation anticipated and addressed the impacts associated with Projects W-211, W-314, and supporting projects, including Project W-521 activities. The TWRS EIS was issued jointly by DOE and Ecology. Ecology concurred with the Phased Implementation alternative selected by DOE in the TWRS ROD.

The following alternatives exist for compliance with SEPA.

1. **Submit a letter to Ecology for SEPA adoption** - and/or provide a briefing to appropriate regulatory agencies (Ecology is the lead agency) stating that DOE-RL believes existing environmental documentation provided to or prepared by Washington State agencies, and issuance of permits by those agencies, covers this action.
2. **Submit a SEPA environmental checklist** - in conjunction with an application for permit(s) needed [e.g., air, *Resource Conservation and Recovery Act (RCRA) of 1976*, facility physical modifications] and let Ecology determine if an EIS is required.

The recommended approach is to submit a letter for SEPA adoption and provide a briefing to inform Ecology that the TWRS EIS (DOE/EIS-0189F), ROD, and other NEPA documentation cover Project W-521 activities.

2.4 PRELIMINARY PLANNING ASSUMPTIONS, COST ESTIMATES, AND SCHEDULE

Refer to Appendix A for the Project W-521 environmental requirements checklist, Appendix B for planning assumptions, Appendix C for cost estimate information, and Appendix D for schedule information.

3.0 AIR QUALITY PROTECTION

The federal *Clean Air Act* (CAA) was enacted in 1970 under 42 USC 7401 et seq. and amended in 1990. In Washington State, the provisions of the CAA are implemented by U.S. Environmental Protection Agency (EPA), Ecology, Washington State Department of Health (WDOH), and local air authorities.

3.1 SUMMARY OF KEY REQUIREMENTS AND PERMITTING PROCESSES

The air permitting process is based on standards administered by regulatory agencies and contained in the following regulations:

- National Emissions Standards for Hazardous Air Pollutants (NESHAPs) (40 CFR 61 Subpart H)
- Prevention of Significant Deterioration (PSD) standards (40 CFR 52.21 and WAC 173-400)
- Operating Permit Regulation (WAC 173-401)
- Ambient Air Quality Standards for Radionuclides (WAC 173-480)
- Radiation Protection - Air Emissions (WAC 246-247)
- Controls for New Sources of Toxic Air Pollutants (TAPs) (WAC 173-460).

These regulations establish standards and rules applicable to the control and/or prevention of the emission of air contaminants. The following three main requirements are to be met:

- Use of best available control technology
- quantification of air pollutant emissions
- demonstration of human health and environmental protection.

Detailed information on the emissions abatement system, the gaseous effluent monitoring system, the process producing the emissions, and the nature of all emissions to the atmosphere are required for submissions made pursuant to the CAA. All emission control systems on the Hanford Site must comply with requirements in HNF-PRO-450, HNF-PRO-2364, and HNF-PRO-2595.

3.2 APPLICABILITY TO PROJECT W-521 ACTIONS

The proposed activities will include in-tank pump installations, valve pit upgrades, installation of a new waste transfer valve pit and transfer lines, ventilation upgrades, related ancillary support activities such as instrumentation, electrical, dilution/caustic addition system, and startup of the completed systems. Project W-521 activities will require several air-related permits and approvals before commencement of construction. These permits and approvals will be issued by several regulatory agencies, including the EPA, Ecology and the WDOH. Construction activities will require permits or other agency approvals because increased emissions could be expected while working in contaminated areas with contaminated equipment (valve pits, soil excavation, in-tank installations, ventilation upgrades). Operation of the waste retrieval systems will require permits or other agency approvals because mobilization by mixing has the potential to generate aerosols and particulates, which could remain suspended in the tank headspace and be drawn out by the active ventilation system to challenge the emissions control equipment. For most proposed actions, the approving agencies expect that both construction and subsequent operation will be addressed together under one permit/approval request.

3.3 SATISFYING APPLICABLE AIR QUALITY PROTECTION REQUIREMENTS

The following sections describe the alternatives available for obtaining appropriate air quality documentation and the recommended approach for the Project W-521 environmental planning basis.

3.3.1 Available Alternatives

Various avenues could be evaluated in an effort to support the air permitting for Project W-521 activities. The length of the permitting process depends on the quantity of emissions and the availability of necessary information. The alternatives are as follows:

1. Prepare modification to an existing notice of construction (NOC) approval (if modifying an existing air emissions system) describing planned Project W-521 upgrades and emissions
2. Prepare permit applications to include all nine tanks and associated activities in the Project W-521 scope. This would require waiting until all design information needed to prepare detailed permit applications was available.
3. Prepare permit applications on a per-tank or group-of-tanks basis, as the design information for each tank becomes available
4. Obtain WAC 246-247 and 173-460 approvals in a phased approach. This alternative is listed only for completeness. This alternative is described in the referenced regulations; however, both WDOH and Ecology verbally have expressed reluctance to use the option and have not since 1993.

3.3.2 Recommended Approach

The recommended approach is to use a combination of Alternatives 1 and 3.

Current radioactive and nonradioactive NOC approvals (permit to operate) exist for the 241-AY/AZ Tank Farm ventilation system, including the operation of mixer pumps in AZ-101 tank. The modification will describe planned Project W-521 upgrades and emissions. The existing approval documentation will be referenced for a description of the existing system.

For radioactive air emissions, it is assumed that a NOC will be prepared for each tank. Tanks could be grouped into one NOC if the required design information for each tank is available such that the NOC could be prepared and approved before commencement of the construction of the first tank in the group.

For nonradioactive air emissions, it also is assumed that NOCs will be prepared for each tank or group of tanks. The applicability evaluations for new source review (WAC 173-400-110), prevention of significant deterioration (WAC 173-400-141), and toxic air pollutants (WAC 173-460-030 and -040) could be performed in parallel before preparation of the NOCs. The applicability evaluation will be submitted to FDH and Ecology for concurrence, as applicable, and all required information for each tank (or group of tanks) could be submitted in one NOC.

For air operating permit modifications, it is assumed that the modification package will be prepared in parallel with the NOCs and submitted to the agencies at the same time. The ventilation upgrades for the

AZ-101 tank are assumed to require a significant air operating permit (AOP) modification. Upgrades/changes at the other tanks will be considered minor AOP modifications.

3.4 PRELIMINARY PLANNING ASSUMPTIONS, COST ESTIMATES, AND SCHEDULE

Refer to Appendix A for the Project W-521 environmental requirements checklist, Appendix B for planning assumptions, Appendix C for cost estimate information, and Appendix D for schedule information.

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4.0 RADIATION AND HAZARDOUS MATERIALS PROTECTION

DOE Orders 5400.1, "General Environmental Protection Program", and 5400.5, "Radiation Protection of the Public and the Environment", establish standards and requirements that must be followed to protect members of the public and the environment against undue risk from radiation. Additional requirements for radioactive and mixed waste management are found in DOE Order 5820.2A.

4.1 SUMMARY OF KEY REQUIREMENTS AND APPROVAL PROCESS

DOE Order 5400.1 requires a written environmental monitoring plan (EMP) for each site, facility, or process that uses, generates, releases, or manages significant pollutants or hazardous materials. The EMP must include the rationale and design criteria for the monitoring program, as well as describe the extent and frequency of the monitoring. The EMP also must contain quality assurance (QA) requirements, program implementation procedures, directions for preparation and implementation of reports, and directions for identification and discussion of effluent monitoring and environmental surveillance. An EMP is prepared for all DOE activities on the Hanford Site and is updated every 3 years to include new or modified facilities and projects (DOE/RL-91-50).

The effluent monitoring portion of the plan must verify compliance with applicable regulations and DOE Orders. For major facilities on the Hanford Site, this is documented in the form of specific facility effluent monitoring plans (FEMP). Preparation of a FEMP assesses effluent monitoring systems and evaluates whether these systems are adequate to ensure the public health and safety as specified in applicable federal, state, and local requirements. The FEMP ensures long-range integrity of the effluent monitoring systems by requiring an update whenever a new process or operation introduces new hazardous materials or significant radioactive materials. This document is reviewed annually and must be updated, at a minimum, every 3 years.

DOE Order 5400.1 requires that baseline data be obtained before the start of a project (pre-operational monitoring) and that periodic (near-facility monitoring) be performed to determine if the environment is being affected. The specific monitoring required by DOE Order 5820.2A includes the following:

- Radionuclide concentrations in the ambient air
- Background radiation levels at the project site and in surrounding areas
- Radionuclides present in flora, fauna, soil, wildlife, and water.

Subpart H, "National Emission Standards for Emissions of Radionuclides Other Than Radon from Department of Energy Facilities" (40 CFR 61), establishes exposure limits and monitoring requirements. The exposure limits for members of the public from radionuclide emissions is an effective dose equivalent (EDE) not to exceed 10 mrem per year. Compliance with this standard is measured by calculating the highest EDE where a person resides or abides using an EPA-approved method.

Radioactive waste (e.g., mixed, high-level, transuranic, etc.) generated by DOE operations must be safely treated, stored, and disposed of according to the requirements set forth in DOE Order 5820.2A. Radiation doses received by members of the public as a result of the management and storage of spent nuclear fuel, high-level, or transuranic waste at any DOE disposal facility must not exceed the limits given in 40 CFR 191, Subpart A(b).

4.2 APPLICABILITY TO PROJECT W-521 ACTIONS

A FEMP determination would be made to assess the need to prepare a FEMP. The radioactive and chemical source terms must be reviewed, and if the potential exists to exceed either of the two thresholds, a FEMP must be prepared. If not, a one-page form is sufficient to document the determination. The sitewide EMP (DOE/RL-91-50) will be updated automatically; no project-specific effort is required. The existing RPP FEMP (HNF-EP-0479-2) could require updating and Project W-521 input will be requested on an as-needed basis.

Most of the Fluor Daniel Hanford, Inc. (FDH) team environmental monitoring activities are performed by Waste Management Federal Services of Hanford (WMH) and Waste Management Northwest (WMNW). Policy and integration activities are the responsibility of FDH. The Hanford Site "Integrated Plan for Environmental Monitoring" (HNF-MR-0535) was developed and agreed to by all Hanford Site contractors [Pacific Northwest National Laboratory (PNNL), Bechtel Hanford, Inc. (BHI), and the FDH team]. The monitoring of effluents and the environment is documented formally each year, and all RPP activities need to be included as appropriate.

A pre-operational environmental study must be conducted before startup of a site, facility, or process that has the potential for significant adverse environmental impact (DOE Order 5400.1). It is assumed a pre-operational environmental study will not be required for Project W-521.

For more detail, refer to the environmental compliance procedures, HNF-PRO-453, HNF-PRO-456, and HNF-PRO-457. It is assumed that each individual supporting project would request a pre-operational survey, if applicable, of the proposed usage location as soon as the site evaluation review was complete.

The monitoring, reporting, and routine communication among contractors is described in HNF-MR-0535. Although the reports typically are published annually, the monitoring and collection of meaningful data, without duplication of effort, requires regular interaction with the other onsite contractors. The following effluent or environmental reports require data from Hanford Site facilities and projects: (1) the environmental releases report, which reports data for radioactive and nonradioactive substances released into the environment during each calendar-year; (2) the radionuclide air emissions report for the Hanford Site, due to the EPA by June 30 each year; (3) the nonradioactive emissions report to Ecology; and (4) the Hanford Site environmental report issued annually.

4.3 SATISFYING APPLICABLE RADIATION PROTECTION REQUIREMENTS

The following sections describe the alternatives available for satisfying appropriate radiation protection requirements and the recommended approach for the Project W-521 environmental planning basis.

4.3.1 Available Alternatives

The three alternatives available for this project are as follows:

1. Gather the required information specifically for this project
2. Use information gathered by RPP and routine monitoring
3. Use existing data and supplement data with sampling data.

Alternative 1 is judged to be the most expensive in that it would be difficult to separate the acquired project data from the RPP data in the case of overlapping projects, potentially resulting in duplicating efforts. Alternative 2 would use existing data for the baseline, and would limit efforts to ongoing monitoring. The ongoing monitoring could be accomplished by use of onsite programs and the specific monitoring established for RPP. Alternative 3 would use existing data and supplement the data with additional sample collection, analytical testing, and data evaluation as needed.

4.3.2 Recommended Approach

The recommended approach is to use Alternative 2. It is assumed no additional pre-operational monitoring will be required. Project W-521 work will occur inside tank farm boundaries and no disturbances will occur anywhere that are not baselined and monitored. No project-specific action should be required.

4.4 PRELIMINARY PLANNING ASSUMPTIONS, COST ESTIMATES, AND SCHEDULE

Refer to Appendix A for the Project W-521 environmental requirements checklist, Appendix B for planning assumptions, Appendix C for cost estimate information, and Appendix D for schedule information.

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5.0 DANGEROUS WASTE MANAGEMENT

A comprehensive national program was enacted under RCRA to mandate that hazardous (dangerous) waste will be treated, stored, and disposed so as to minimize the present and future threat to human health and the environment. Ecology implements WAC 173-303, *Dangerous Waste Regulations*.

5.1 SUMMARY OF KEY REQUIREMENTS AND PERMITTING

WAC 173-303 regulations apply to all facilities within Washington State that treat, store, and/or dispose of dangerous waste. These regulations are equivalent to, or more stringent than, the federal hazardous waste regulations. Under WAC 173-303, all treatment, storage, and/or disposal (TSD) units must obtain a state-issued permit. Units that were in existence on November 19, 1980, were granted an interim status permit with the submittal of a Part A, Form 3, identifying the intent to treat, store, and/or dispose of dangerous waste. A final status permit is granted after final administrative disposition of the Part B permit application (Part B) documentation.

The process for obtaining a RCRA permit consists of three collective submittals. Each submittal consists of various levels of detailed information concerning the TSD unit. The three submittals are the notice of intent (NOI); the Part A, Form 3, permit application (Part A); and the Part B. A detailed description of RCRA permit submittals is provided in the HNF-2401.

5.2 APPLICABILITY TO PROJECT W-521 ACTIONS

The Hanford Site has been issued a sitewide final status permit that is modified periodically to include unit-specific requirements for TSD units on the Hanford Site. Many of the anticipated Project W-521 activities involve new/replacement pumps within the DST System. The DST System currently is covered under interim status. A unit-specific final status permit application is being prepared for submittal to Ecology. It will be necessary to ensure that the DST System final status permit application is consistent with and adequately covers the planned Project W-521 activities. If the DST System final status permit must be modified to incorporate Project W-521 scope, delays of between 6 to 18 months could occur between completion of design and approval to construct.

5.3 SATISFYING APPLICABLE DANGEROUS WASTE MANAGEMENT REQUIREMENTS

The following sections describe the alternatives available for obtaining appropriate RCRA documentation and permits and the recommended approach for the Project W-521 environmental planning basis.

5.3.1 Available Alternatives

Currently, the scope of work identified for Project W-521 does not impact the current permitting documents and could be performed under interim status for the DST System. As design proceeds, review by environmentally knowledgeable personnel should be made to ensure that compliant systems are being proposed, which can be permitted in the future. It is appropriate to seek opinions or direction

from Ecology on issues of ventilation and filtration control, regulatory interpretation, or where early agency involvement might expedite the final permit approval.

Relevant design media and system descriptions must be provided to the RPP ESH&Q organization for incorporation into the DST System Part B permit application documentation. If design and descriptions cannot be provided in time for final submittal of the Part B, a permit modification will need to be processed and approved by Ecology before implementing any design changes in the field.

The following three basic alternatives have been identified for consideration.

1. Incorporate general Project W-521 description (e.g., transfer pump pit installation for two tanks, etc.) into Chapter 4.0 of the DST Part B permit application. Assuming Ecology approves the scope of Project W-521 in the final status permit, prepare modifications to the final status permit as design nears completion (e.g., 60 to 90 %) on a tank or group of tanks basis. Assume minimal delay between design completion and approval to commence construction.
2. Do not address the scope of Project W-521 in the permit application currently being prepared if information is unavailable. Prepare a major modification to the final status permit on completion of design of a tank or group of tanks. Assume 6 to 18 months once the modification has been submitted to Ecology before approval.
3. Continue under interim status if final status is not approved.

5.3.2 Recommended Approach

The recommended approach is Alternative 1. Sufficient information currently is available to include a general project description in the DST Chapter 4.0 draft. If the permit is not finalized at project start, then Alternative 3 will be the recommended approach.

5.4 PRELIMINARY PLANNING ASSUMPTIONS, COST ESTIMATES, AND SCHEDULE

Refer to Appendix A for the Project W-521 environmental requirements checklist, Appendix B for planning assumptions, Appendix C for cost estimate information, and Appendix D for schedule information.

6.0 MISCELLANEOUS ASSESSMENTS, PERMITS, AND APPROVALS

In addition to the major regulatory programs, several miscellaneous assessments, permits, certifications and approvals are required for Project W-521. These are addressed in the following sections.

6.1 SUMMARY OF KEY REQUIREMENTS AND PROCESSES

The following reviews and approvals are required before construction or excavation activities begin.

6.1.1 Cultural/Ecological Resource Review

A cultural review is performed for any project involving demolition, modification, or deactivation of a potentially historic facility or structure (36 CFR Part 800). The review must be made before initiating any external surface disturbing activities onsite, or if any modifications are planned for any facility with the potential for inclusion on the National Register of Historic Places.

A site survey should be performed to identify the following:

- Any plant or animal species protected under the *Endangered Species Act*
- Candidates for such protection
- Species listed as threatened, endangered, candidate, sensitive, or monitored by Washington State
- Species protected under the *Migratory Bird Treaty Act*.

Also assessed is whether the planned activities have the potential to disturb any priority habitats and/or species identified in the survey. Identification of potential mitigation actions would be required during the review.

The above reviews typically are performed jointly as a Cultural/Ecological Resource Review (CERR). The CERR fulfills the NEPA ecological/biological review requirement. It also applies to taking, possession, transportation, sale, purchase/barter, export, and import of special status plants and animals (both living and dead), and includes removal, remediation, corrective actions, D&D activities, and project construction. The request form to perform the CERR is located on the HLAN, under Site Form RL-665.

6.1.2 Site Location

Any new facility must receive a landlord site location review, coordinated by the DynCorp Tri-Cities Services, Inc., Real Estate and Site Planning Department. This review is a best management practice and offers an opportunity during the early planning stages to identify unusual or uncertain compliance, safety, or operations issues. This review covers similar aspects as the alternatives review under NEPA (EIS or EA).

A siting evaluation should be made of the proposed routing for all underground and/or aboveground piping, pits, pads, and support structures covered by Project W-521. An ALARA review for intrusion into radiation control areas, underground contamination areas, and buried tanks also should be made to

avoid any unanticipated exposures. Data from the site location review should be maintained as reference material by the excavation permit authority.

6.1.3 Excavation Permit

An excavation permit is required before initiating any potential surface-disturbing onsite activities (36 CFR Part 800). The request form to obtain this permit is located on the HLAN, under Site Forms, [A-7400-373, "Hanford Excavation Permit"]. The facility environmental compliance officer, or designee must review and approve excavation permits before excavation begins to ensure that all CERR issues are met.

Detailed information necessary for the Project W-521 excavation permits will be the responsibility of the project. The RPP ESH&Q organization is responsible for review and approval of each excavation permit required.

6.1.4 American Indian Tribal Government Agreements

American Indian Tribal Governments have a special and unique legal relationship with the U.S. Federal Government and its agencies (DOE 1230.2). These relationships are defined in numerous treaties, statutes, historical precedents, and the US Constitution. In addition, Washington State has agreements respecting current and future use of the lands surrounding the Hanford Site. All actions on the Hanford Site that impact these agreements must be approved by the DOE-RL office for Native American interests. The CERR will be the mechanism for identifying any such potential impacts.

6.1.5 Endangered Species Act Compliance

A site assessment should be made to determine whether any planned activities have the potential to disturb any habitat used by wildlife before construction or habitat modification (50 CFR 402.6). The regulatory agency is the State or Federal Fish and Wildlife Service. For onsite construction, a biological survey will need to be performed. This review is performed annually. The RPP ESH&Q organization will ensure an annual upgrade to this assessment is performed.

6.2 APPLICABILITY TO PROJECT W-521 ACTIONS

It is assumed that all Project W-521 actions will occur inside or within 150 meters of tank farm boundaries. The Tank Farms areas have an existing cultural resources review exemption [approved 08/16/94 (PNNL 1994)]. Because Project W-521 scope does not include removal of existing tanks or modifying or demolishing permanent structures, and will not occur outside the limitations as previously specified, no further review is anticipated.

Numerous excavation permits are expected during Project W-521 construction. RPP ESH&Q will prepare and approve all excavation permits. No further cultural resource review is expected. RPP ESH&Q will ensure the annual endangered species act assessment is performed. Any other biological reviews, if necessary, will be limited to supplementing the blanket biological review completed in 1997 to address work within the Tank Farms (PNNL 1997).

6.3 PRELIMINARY PLANNING ASSUMPTIONS, COST ESTIMATES, AND SCHEDULE

Refer to Appendix A for the Project W-521 environmental requirements checklist, Appendix B for planning assumptions, Appendix C for cost estimate information, and Appendix D for schedule information.

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7.0 REFERENCES

- DOE/EIS-0189F, *Final Environmental Impact Statement for the Tank Waste Remediation System*, U.S. Department of Energy, Richland Operations Office, Washington.
- DOE/EIS-0189-SA1, *Supplement Analysis for the Proposed Upgrades to the Tank Farm Ventilation, Instrumentation, and Electrical Systems under Project W-314 in Support of Tank Farm Restoration and Safe Operations*, U.S. Department of Energy, Richland Operations Office, Washington.
- DOE/EIS-0189-SA2, *Supplement Analysis for the Tank Waste Remediation System*, U.S. Department of Energy, Richland Operations Office, Washington.
- DOE/EIS-0212, *Safe Interim Storage of Hanford Tank Wastes Environmental Impact Statement*, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- DOE Order 451.1A, *National Environmental Policy Act Compliance Program*.
- DOE Order 1230.2, *American Indian Tribal Government Policy*.
- DOE Order 5400.1, *General Environmental Protection Program*.
- DOE Order 5400.5, *Radiation Protection of the Public and the Environment*.
- DOE Order 5820.2A, *Radioactive Waste Management*.
- DOE Order 6430.1A, *General Design Criteria*.
- DOE/RL-91-28, *Hanford Facility Dangerous Waste Permit Application, General Information Portion*, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- DOE/RL-91-50, *Environmental Monitoring Plan United States Department of Energy Richland Operations Office*, Rev. 2, 1997, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- HNF-2401, *Waste Feed Delivery Environmental Permits and Approvals Plan*, Lockheed Martin Hanford Corp., Richland, Washington, 1998.
- HNF-4401, *Pre-operational Environmental Survey of the Project W-314 Pipeline*, Waste Management Federal Services Northwest, Richland, Washington.
- HNF-MR-0535, *Integration Plan for Environmental Monitoring*, Rev. 0, 1997, Fluor Daniel Hanford, Inc., Richland, Washington.
- HNF-PRO-450, *Air Quality Program - Radioactive Emissions*, Fluor Daniel Hanford, Inc., Richland, Washington.
- HNF-EP-0479-2, *Tank Waste Remediation System Facility Effluent Monitoring Plan*, Fluor Daniel Hanford, Inc., Richland, Washington.

HNF-PRO-452, *NEPA, SEPA, Cultural and Natural Resources*, Fluor Daniel Hanford, Inc., Richland, Washington.

HNF-PRO-453, *Spill Release and Reporting*, Fluor Daniel Hanford, Inc., Richland, Washington.

HNF-PRO-455, *Solid Waste Management*, Fluor Daniel Hanford, Inc., Richland, Washington.

HNF-PRO-456, *Water Quality*, Fluor Daniel Hanford, Inc., Richland, Washington.

HNF-PRO-457, *Environmental Requirements Evaluation*, Fluor Daniel Hanford, Inc., Richland, Washington.

HNF-PRO-2364, *Radioactive Effluent Airborne Sampling*, Fluor Daniel Hanford, Inc., Richland, Washington.

HNF-PRO-2595, *Air Quality Program-Non-radioactive Emissions*, Fluor Daniel Hanford, Inc., Richland, Washington.

HNF-SP-0903, *National Environmental Protection Act Source Guide*, Fluor Daniel Hanford, Inc., Richland, Washington.

LMHC, 1999, letter from B. G. Erlandson, LMHC to A.F. Choho, Numatec, "Project W-521 Waste Feed Delivery Systems Environmental Permits and Approvals, Strategy, Cost Estimate and Permitting Schedule".

PNL, 1994, letter from M.E. Crist, Pacific Northwest Laboratories, to W.B. Bancroft, Westinghouse Hanford Company, "Cultural Resources Exemption of the Tank Farm Areas", August 16, 1994.

PNNL, 1997, letter from C.A. Brandt, Pacific Northwest National Laboratory, to Randy K. P'Pool, Lockheed Martin Hanford Corp., "Blanket Biological Review for the Tank Farm Facilities, 200 E and 200 W Areas, #97-200-047", April 15, 1997.

60 FR 61687, *Record of Decision for Safe Interim Storage of Hanford Tank Wastes*, Hanford Site, Richland, Washington.

62 FR 8693, *Record of Decision for Tank Waste Remediation System*, Hanford Site, Richland, Washington.

APPENDIX A

PROJECT W-521 ENVIRONMENTAL REQUIREMENTS CHECKLIST

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**Appendix A. Summary of Potential Project W-521
Environmental Permits, Approvals, or Requirements**

Affected environment	Permit, approval, Or requirement	Regulation Or standard	Responsible Agency	Applicability (yes or no and assumed action)
NEPA	NEPA Documentation	40 CFR 1500-1508 10 CFR 1021 DOE Order 451.1A	DOE	Yes Prepare SA to ensure bounding of project scope by existing NEPA documentation (e.g., DOE/EIS-0189F)
SEPA	SEPA Documentation	WAC 197-11	Ecology	Yes Ecology will review and adopt existing NEPA documentation. No separate SEPA Environmental Checklist will be required.
All Media	Cultural Resource Review	10 CFR 1021 36 CFR 63 36 CFR 800 43 CFR 7	DOE State Historic Preservation Office	Yes CERR has been approved for work inside tank farms. Any work 150 meters outside the existing fence, removal of existing tanks, modification or demolishing existing structures will require a separate CRR.
	Ecological Compliance Review	10 CFR 1021 DOE Order 5484.1 50 CFR 17 50 CFR 402.6 WAC 232-12	DOE USFWS Ecology	Yes Annual update to the RPP blanket tank farms CERR will be required before start of construction. If outside the boundaries specified in the tank farm ECR, a separate CERR would be required. The annual update to the tank farms ECR will be reviewed for restrictions and/or other impacts before obtaining excavation permit
All Media	American Indian Policies Review	DOE 1230.2 42 USC 1966	DOE BIA	No
	Excavation Permit	36 CFR 800	DOE	Yes Includes review of NOC conditions, and review of CERR.
	Pre-operational Monitoring of Facility, Site, and Operations	DOE Order 5400.1	DOE	Yes Document in memo-to-file the conclusion that existing tank farms monitoring will be sufficient.
	General Public & Environmental Protection; Radiation Protection Standards	DOE Order 5400.1 DOE Order 5400.5	DOE	Yes Covered by compliance with radiological/ALARA requirements in work packages during construction.
All Air Emissions	Air Operating Permit	WAC 173-401	Ecology WDOH EPA	Yes AOP will require revision for both radionuclide and nonradionuclide air emissions. Prepare AOP modification requests in parallel with NOC development.

**Appendix A. Summary of Potential Project W-521
Environmental Permits, Approvals, or Requirements**

Affected environment	Permit, approval, Or requirement	Regulation Or standard	Responsible Agency	Applicability (yes or no and assumed action)
Nonradioactive Air Emissions	New Source Review; Source Registration	WAC 173-400-110 WAC 173-400-101	Ecology	Yes Perform review in parallel with the WAC 173-460 applicability evaluation.
	Substantial Alteration of Emission Control Technology	WAC 173-400-114	Ecology	Yes Review performed in parallel with the WAC 173-460 applicability evaluation. Obtain FDH/Ecology concurrence as applicable.
	Prevention of Significant Deterioration	WAC 173-400-141	Ecology	Yes Criteria Pollutant evaluation (e.g., particulate) performed in parallel with the WAC 173-460 applicability evaluation. Obtain FDH/Ecology concurrence as applicable.
	Toxic Air Pollutants (TAP) /NOC; New Source Review	WAC 173-460-030 WAC 173-460-040	Ecology	Yes Perform WAC 173-460 applicability evaluation. Prepare an application for approval to construct, and operate, all upgrades necessary to retrieve and deliver waste from each tank [assume eight new applications and one modification to an existing approval (AZ Farm Upgrades)].
Radioactive Air Emissions	Source Review/NOC; Radiation Protection -- Air Emissions	WAC 246-247-060 WAC 246-247	WDOH	Yes Prepare an application for approval to construct, and operate all upgrades necessary to retrieve and deliver waste feed from each tank [assume eight new applications and one modification to an existing approval (AZ Farm/W-030)].
Radioactive Air Emissions	NESHAP	40 CFR 61 Subpart H	EPA	Yes Prepare transmittal letter to EPA. Attach radioactive air emissions NOC application (same as WDOH application). [Assume eight new applications and one modification to an existing approval (AZ Farm/W-030 Project)].

**Appendix A. Summary of Potential Project W-521
Environmental Permits, Approvals, or Requirements**

Affected environment	Permit, approval, Or requirement	Regulation Or standard	Responsible Agency	Applicability (yes or no and assumed action)
Domestic Waste Water Disposal	Septic Systems <14,500 gpd capacity	WAC 246-272	WDOH	No
	Septic Systems >14,500 gpd capacity	WAC 173-216 WAC 173-240 WAC 173-221, -221A	Ecology	No
Storm Water Disposal	Storm Water Discharge Under General Permit	40 CFR 122 WAC 173-226	EPA Ecology	No
	Storm Water Discharge Under Underground Injection Control Permit	WAC 173-218	Ecology	No
	Engineering Approval; System ID. Number	WAC 246-290	WDOH	No
	Operator Certification	WAC 246-292	WDOH	No
Radioactive Waste Management	Reprocessing, Management, or Disposal of Spent Nuclear Fuel	DOE Order 5820.2A DOE Order 6430.1A 10 CFR 962 40 CFR 191	DOE EPA NRC	Yes Covered by RPP procedures and requirements in work packages.
Solid Waste	Solid Waste Management	WAC 173-304 DOE 5400.1	Ecology DOE Benton County Health Department	No
Dangerous Waste	Dangerous Waste Management	WAC 173-303 40 CFR 260 through 268	Ecology EPA	Yes It is assumed the DST System RCRA Part B Permit will be issued. Modifications could cause a delay from 6 to 18 months between completion of design and obtaining approval to construct if project information is not included in the final draft DST Part B. Permit negotiations will be monitored closely to determine alternative strategies to avoid delays.
	NOI	WAC 173-303-281	Ecology	No
USTs	Underground Storage Tank Permit	WAC 173-360 40 CFR 280	Ecology EPA	No

**Appendix A. Summary of Potential Project W-521
Environmental Permits, Approvals, or Requirements**

Affected environment	Permit, approval, Or requirement	Regulation Or standard	Responsible Agency	Applicability (yes or no and assumed action)
Special Substances	Polychlorinated biphenyls	40 CFR 761 WAC 173-303	EPA Ecology	Yes This is covered by the DST waste acceptance criteria review before any waste transfer.
	Used oils	WAC 173-303 40 CFR 279	Ecology EPA	No
	Asbestos	BCCAA Reg. 1, Article 8 40 CFR 61	BCCAA EPA	No
	Chlorofluoro-carbons ozone depleting substances	40 CFR 82	EPA	No
	Pollution prevention plans for hazardous substances and wastes	WAC 173-307	Ecology	Yes This is covered by TWRS internal procedures.
	Notification/ reporting of hazardous materials spills/releases	40 CFR 302 40 CFR 372 WAC 173-340	EPA Ecology	Yes This is covered by sitewide and RPP internal procedures.

APPENDIX B

ENVIRONMENTAL PLANNING ASSUMPTIONS FOR PROJECT W-521

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Appendix B. Planning Assumptions for Preparing Project W-521
Summary of Required Permits/Regulatory Tasks

Permit, Approval, or Requirement	Planning Assumptions
NEPA	It is expected that DOE will decide existing NEPA documentation is sufficient for NEPA compliance. To ensure sufficient cost and schedule planning, a more conservative assumption has been made that assumes preparation of a SA. The expected outcome is the existing NEPA documentation and SA (if needed) together will bound the potential range of environmental impacts.
SEPA	Planning assumption is that Ecology will review and concur with the adequacy of NEPA documentation. The expected outcome is that independent SEPA documentation will not be necessary.
CERR	A Cultural Resources exemption (PNNL 1994) has been approved by DOE-RL for the 18 tank farm areas on the Hanford Site. The exemption does not include removal of tanks, or modifying and/or demolishing any permanent structure(s) within 150 meters outside of the tank farms. Planning assumption is that Project W-521 adequately is covered by this existing exemption. No level of effort is planned.
	A blanket Biological Review (#98-200-047) is performed annually by PNNL for the tank farm facilities in the 200 East and 200 West Areas. Planning assumption is that the requirements specified in the biological review letter will apply to the project and that other already planned RPP reviews (e.g., endangered species surveys) sufficiently cover the project activities. No level of effort is planned.
Excavation Permit	Planning basis is three excavation permits required for construction activities associated with each of the nine tanks included within the scope of this project. Typical environmental review activities assumed to support each excavation permit include CERR, permit condition implementation, and general technical compliance review.
Preoperational Monitoring of Facility, Site, and Operations	It is assumed that existing tank farms monitoring will be sufficient for this project. Document with memo to file. No other level of effort is planned.
General Public & Environmental Protection, Radiation Protection Standards	These requirements are captured in individual work packages, internal procedures, and in implementation of applicable permit conditions. Planning basis is that environmental staff will be asked to review work packages and to provide general support for periodic design, construction, and implementation assistance.
Air Operating Permit (AOP)	It is assumed the AOP will be final. The planned approach will be to submit a request for modification of the AOP at the same time as both the radioactive and nonradioactive NOC applications are submitted to the regulatory agencies for approval. Ventilation system upgrades, or upgrades to ventilation system monitoring systems, are assumed to be classified as "significant modifications." It is assumed that significant modifications will require an additional 6 months beyond approval of the radioactive/nonradioactive NOCs before commencement of construction. Assume AZ-101 is a major modification. The remaining tanks are assumed to be minor modifications.

**Appendix B. Planning Assumptions for Preparing Project W-521
Summary of Required Permits/Regulatory Tasks**

Permit, Approval, or Requirement	Planning Assumptions
New Source Review; Source registration	Planning assumption is that the review will be performed in parallel with the WAC 173-460 (TAP) evaluation. The assumed outcome is no new source requiring source registration. Submit evaluation to FDH and Ecology for concurrence as applicable.
PSD	Planning assumption is that the PSD review will be performed in parallel with the WAC 173-460 (TAP) evaluation. Planning basis assumes that no PSD permit will be required. Submit evaluation to FDH and Ecology for concurrence as applicable.
NOC-TAP	Planning basis is each of the NOCs will encompass both construction (e.g., mixer pump installation) and operation (e.g., mixer pump operation to retrieve and deliver the waste). For planning purposes, it is assumed that eight new NOCs and one modification to an existing approval, which currently allows operation of the existing ventilation system in AZ Farm (W-030) will be required. Approval must be obtained before start of construction.
NOC – Radioactive Air Emissions	It is assumed that NOC approval will be required for radioactive air emissions. The planning basis assumes NOC content will address both construction activities (e.g., equipment upgrades/installation) and operation (e.g., operation of the mixer pump to retrieve and transfer the waste). Approval must be obtained before start of construction. The planning basis is eight new NOCs and one modification to an existing approval to operate the ventilation system in AZ Farm (W-030).
RCRA	Planning basis is that the DST System final status permit will be issued and in force. The planning assumption is that general project information will be incorporated into the draft DST System Part B permit application, specifically Chapter 4.0, in time to support transmittal of the final draft of this chapter to Ecology. Also assumes an annual modification to the DST System Permit. Planning basis is a total of nine assessments at \$16,000 each for resources and materials. Compliance with WAC 173-303 technical standards (e.g., secondary containment) and other conditions of the Permit will be mandatory, unless modified by separate regulatory agreement.
Hazardous Waste Reduction	It is assumed that existing sitewide programs and RPP internal procedures will satisfy applicable requirements. No level of effort is planned.
PCBs	It is assumed that existing RPP procedures (e.g., waste acceptance criteria) will satisfy applicable requirements. No level of effort is planned.
Notification and Reporting of Hazardous Materials Spills/Releases	It is assumed that existing sitewide programs and RPP internal procedures will satisfy applicable requirements. No additional project scope is planned.

APPENDIX C

COST ESTIMATE FOR PROJECT W-521 PERMITS AND REGULATORY SUPPORT

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Appendix C. Estimated Cost and Schedules to Obtain Permits and Provide Support for Design and Construction.

OBTAIN PERMITS AND APPROVALS					
Area/location of task	Type of Environmental Permit/regulatory task	Labor type	Effort (hours)	Estimated Cost (\$)	Task duration/assumptions /schedule Complete
200 EAST (241-AZ-101, 241-AW-101 and 103, 241-AY-101, 241-AN-101, 102, 106 and 107) and 200 WEST (241-SY-101)	Environmental Planning Summary and Permit Plan (FY 1999)	Exempt	200	14,000	8 Weeks
		Non-Exempt	30	1,050	Complete by September 30, 1999
	Environmental Permit Plan Update (FY 2000)	Exempt	150	10,500	6 Weeks
		Non-Exempt	15	525	Complete by September 30, 2000
	Environmental Permit Plan Update (FY 2001)	Exempt	150	10,500	6 Weeks
		Non-Exempt	15	525	Complete by September 30, 2001
	Environmental Permit Plan Update (FY 2002)	Exempt	150	10,500	6 Weeks
		Non-Exempt	15	525	Complete by September 30, 2002
	Environmental Permit Plan Update (FY 2003)	Exempt	100	7,000	6 Weeks
		Non-Exempt	10	350	Complete by September 30, 2003
	Environmental Permit Plan Update (FY 2004)	Exempt	100	7,000	6 Weeks
		Non-Exempt	10	350	Complete by September 30, 2004
	Environmental Permit Plan Update (FY 2005)	Exempt	100	7,000	6 Weeks
		Non-Exempt	10	350	Complete by September 30, 2005
	Environmental Permit Plan Update (FY 2006)	Exempt	100	7,000	6 Weeks
		Non-Exempt	10	350	Complete by September 30, 2006

Appendix C. Estimated Cost and Schedules to Obtain Permits and Provide Support for Design and Construction.

OBTAIN PERMITS AND APPROVALS					
Area/location of task	Type of Environmental Permit/regulatory task	Labor type	Effort (hours)	Estimated Cost (\$)	Task duration/assumptions /schedule Complete
	NEPA	Exempt non-exempt	300 30	21,000 1,050	6 months for SA preparation 1 month for each NEPA documentation Request review (1 per tank at beginning of Definitive Design to confirm adequate coverage by existing NEPA documentation)
	NOC - Radioactive Air Emissions: one new moderately complex NOC for eight tanks (650 exempt hours each/ 65 hours each non-exempt) and one modification of an existing NOC covering operation of the existing AZ Farm ventilation system (600 exempt hours each/60 hours each non-exempt)	Exempt non- exempt	5800 580	406,000 20,300	7 Months per NOC Assumes one new NOC for each of eight tanks and modification of an existing approval for AZ Farm (W-030). The approval includes both construction activities and operation of the system (e.g. mixer pump operation to support retrieval operations)
	NOC - NESHAP one new moderately complex NOC for eight tanks (80 exempt hours each/8 non-exempt hours each) and one modification to an existing NOC covering operation of the existing AZ Farm ventilation system (60 exempt hours/6 non-exempt hours)	Exempt non-exempt	700 70	49,000 2,450	1 Month Assumes one new NOC for eight tanks and one modification to an existing NOC for AZ Farm (W-030). The NOC encompasses both construction activities and operation of the system (e.g., mixer pump operation to support retrieval operations). The NOCs to EPA are submitted at the same time as the NOC (or modification) for radioactive air emissions to WDOH. This work effort includes only preparation of transmittal letter and discussions with EPA. The WDOH application is transmitted to EPA for concurrent approval.

Appendix C. Estimated Cost and Schedules to Obtain Permits and Provide Support for Design and Construction.

OBTAIN PERMITS AND APPROVALS					
Area/location of task	Type of Environmental Permit/regulatory task	Labor type	Effort (hours)	Estimated Cost (\$)	Task duration/assumptions /schedule Complete
	AOP: Incorporate NOC approval conditions from NOC submittal.	Exempt non-exempt	200 20	14,000 900	1 month over and above approval of NOCs for a minor modification. 6 months over and above approval of NOCs for a significant modification (AZ-101 is a significant modification because of emissions equipment and/or monitoring modifications). The AOP modification request is submitted simultaneously with radioactive and nonradioactive NOC applications to the regulatory agencies. One AOP modification is assumed per tank. Assume significant modification for AZ-101. Assume remaining are minor modifications.
	NOC - Nonradioactive air emissions. Assume one new moderately complex NOC for eight tanks (650 exempt hours each/65 hours each non-exempt) and one modification of an existing NOC covering operation of the existing AZ Tank Farm Ventilation System (exempt hours 600 each/60 hours each non-exempt)	Exempt non-exempt	5800 580	406,000 20,300	8 months per NOC Assumes one new NOC for each of eight tanks and modification of an existing approval for AZ Tank Farm (W-030). The approval includes both construction activities and operation of the system (e.g. mixer pump operation to support retrieval operations)
	New Source Review - Source Registration: Part of TAP evaluation. Hours included in TAP estimate.	Exempt non-exempt	Included in TAP estimate	Included in TAP estimate	Refer to TAP NOC. Hours for New Source Review evaluation are included with preparation of the NOC for TAPs. Evaluation is submitted to FDH and Ecology for concurrence when applicable.
	PSD: Memo-to-file that PSD will not be required	Exempt non-exempt	Included with TAPs estimate	Included with TAPs estimate	Refer to NOC-TAPs. Hours for PSD evaluation are included with preparation of the NOC for TAPs. Evaluation is submitted to FDH and Ecology for concurrence when applicable.

Appendix C. Estimated Cost and Schedules to Obtain Permits and Provide Support for Design and Construction.

OBTAIN PERMITS AND APPROVALS					
Area/location of task	Type of Environmental Permit/regulatory task	Labor type	Effort (hours)	Estimated Cost (\$)	Task duration/assumptions /schedule Complete
	RCRA DST System Part B	Exempt non-exempt materials and supplies	900 128 8500.00 Annually (For 9 years)	63,000.00 4,515.00 76,500.00	Assume annual modification of DST System Part B for duration of the project. An annual assessment of \$16,000 is assumed for resource hours and materials and supplies to support Project W-521 related DST System Part B Permit modifications. (\$7,500 resource hours/\$8,500 materials annually.)

Appendix C. Estimated Cost and Schedules to Obtain Permits and Provide Support for Design and Construction.

DESIGN REVIEW AND CONSTRUCTION SUPPORT					
Area/location of task	Type of Environmental Permit/regulatory task	Labor type	Effort (hours)	Estimated Cost (\$)	Task duration/assumptions /schedule Complete
200 EAST (241-AZ-101, 241-AW-101 and 103, 241-AY-101, 241-AN-101, 102, 106 and 107, and 200 WEST (241-SY-101)	Design Review Support: Review PDC, 30%, 60%, 90%, final design, and design changes during construction	Exempt non-exempt	1,800 180	126,000 6,300	Average 32 months
	NOC/air emission issue resolution	Exempt Non-Exempt	1,350 13	94,500 455	Support for negotiation and implementation of NOC conditions.
	Dangerous Waste: Technical issue resolution, regulatory interface, and compliance inspection during construction.	Exempt Non-Exempt	2,700 27	189,000 945	
	Field technical support (including excavation permits, CERR support, weekly construction meetings, and miscellaneous field inspections/support	Exempt non-exempt	3,600 0	252,000 0	
	Operational Readiness Review	Exempt non-exempt	1,692 169	118,440 5,915	12 months each tank
TOTAL HOURS AND COST TO OBTAIN PERMITS AND PROVIDE DESIGN/ CONSTRUCTION SUPPORT		Exempt non-exempt	14,850 1,661	1,039,500 58,135	
		Exempt non-exempt	11,142 389	779,940 13,615	
TOTAL ENVIRONMENTAL PERMITTING, DESIGN REVIEW AND FIELD SUPPORT		Exempt non-exempt	25,992 2,050	1,819,440 71,750	

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APPENDIX D

PROJECT W-521 ENVIRONMENTAL PERMITTING SCHEDULE

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