2.0 Compliance Summary

SA Thompson

To ensure the protection of human health and the environment through safe operations, the Hanford Site implements compliance programs designed to fulfill requirements of applicable federal, state, and local environmental laws and regulations; and with DOE orders, notices, directives, policies, and guidance. This includes specific requirements, actions, plans, and schedules identified in the TPA and other compliance or consent agreements. RL and ORP recognize the importance of maintaining a proactive program of self-assessment and regulatory reporting to ensure environmental compliance is achieved and maintained at the Hanford Site. This report fulfills the requirements for reporting annual compliance status with environmental standards provided in *Environmental, Safety and Health Reporting* (DOE O 231.1B).

This section summarizes the laws and regulations that govern Hanford Site activities with regard to federal environmental protection statutes and associated state and local environmental regulations. It also discusses the permits required under specific environmental protection regulations, as well as notices of violations and notices of noncompliance issued by EPA or Ecology. Notices of violation are the regulatory means of informing organizations that their work activities are not meeting requirements. Notices of noncompliance are informal notifications of regulatory violations.

2.1 Hazardous Materials and Waste Management Statutes and Regulations

This section provides compliance information regarding federal environmental statutes and regulations related to hazardous materials and waste management at the Hanford Site.

2.1.1 Federal Facility Compliance Act of 1992

RE Piippo and CP Noonan

The *Federal Facility Compliance Act of 1992* (Public Law 102-386), enacted by Congress on October 6, 1992, amends Section 6001 of RCRA to specify that the U.S. waives sovereign immunity from civil and administrative fines and penalties for RCRA violations. In addition, RCRA requires EPA to conduct annual inspections of all federal facilities. Authorized states are given authority to conduct inspections of federal facilities to enforce compliance with state hazardous waste programs. A portion of Public Law 102-386 also requires DOE to provide mixed waste information to EPA and the states. DOE provides this information annually as part of the Hanford Site Mixed Waste Land Disposal Restrictions Summary Reports pursuant to TPA Milestone M-26. In 2014, *Calendar Year 2013 Hanford Site Mixed Waste Land Disposal Restrictions Summary Report* (DOE/RL-2014-17) met the reporting requirement.

2.1.2 Resource Conservation and Recovery Act of 1976

DI Weyns

Congress enacted RCRA in 1976 to protect human health and the environment. In 1984, the *Hazardous and Solid Waste Amendments of 1984* (Public Law 98-616) reauthorized RCRA, imposing new requirements on hazardous waste management. RCRA's central principle is to establish cradle-to-grave management to track hazardous waste from its generation to TSD. The Hanford Site dangerous waste

activities are subject to applicable provisions of WAC 173-303, "Dangerous Waste Regulations," (including provisions of the Chapter as applied in the TPA).

2.1.2.1 Hanford Facility RCRA Permit

JK Perry

EPA assigned the Hanford Site a single EPA identification number for permitting purposes (WA7890008967); as such, the Hanford Site is a single RCRA facility, although there are numerous TSD units spread over large geographic areas. Currently, there are 14 TSD units incorporated in the existing permit (WA7890008967, Rev. 8C). The permit is issued to eight permittees: RL and ORP as the owners/operators, and six of their contractors: BNI, CHPRC, MSA[a], PNNL, WCH; and WRPS. WAC 173-303 requires Ecology to reissue a permit after a term of up to 10 years. The initial *Hanford Facility RCRA Permit* (WA7890008967, 1994) was issued on September 27, 1994, for a 10-year term. DOE submitted a permit renewal application on March 30, 2004. The permit (WA7890008967) expired on September 27, 2004; since that time, Ecology has been endeavoring to prepare and issue a new permit. Until a new permit is issued, DOE continues to operate under the expired permit, *Hanford Facility Resource Conservation and Recovery Act Permit, Dangerous Waste Portion, Revision 8C, for the Treatment, Storage, and Disposal of Dangerous Waste* (WA7890008967, Rev. 8C).

In May 2012, Ecology issued a draft *Hanford Facility Dangerous Waste Permit* (WA7890008967, Rev. 9), incorporating the remaining TSD units not previously clean closed. Ecology received more than 4,000 comments on the draft *Hanford Facility Dangerous Waste Permit* during the comment period held from May 1 to October 22, 2012. Ecology received approximately 1,800 comments from the public and 3,000 comments from DOE. Issues raised during the comment period identified substantial new questions; as a result, Ecology plans to modify the draft *Hanford Facility Dangerous Waste Permit*, Rev. 9, to address the substantial new questions and reopen the comment period for the draft permit. Ecology expects this effort to take several years and will include performing the following activities:

- Review and evaluate the comments received from the first comment period
- Revise the permit based on significant information and issues raised
- Re-issue the permit with revisions and responses to the original comments
- Reopen the comment period for sections that were changed
- Prepare responses to the next round of public comments
- Issue the final permit.

No TSD unit additions or deletions occurred during 2014; however, modifications were submitted for unit-specific permit conditions for the following TSD units during 2014 pursuant to WAC 173-303-830, *Permit Changes*:

- Liquid Effluent Retention Facility (LERF) and 200 Area Effluent Treatment Facility (ETF) (Operating Unit 3)
- 242-A Evaporator (Operating Unit 4)

[a] MSA is a permittee, but not a "co-operator."

- 325 Hazardous Waste Treatment Unit (Operating Unit 5)
- WTP (Operating Unit 10)
- Integrated Disposal Facility (IDF) (Operating Unit 11).

2.1.2.2 Regulatory Agency Inspections

JW Cammann

The Regulatory Agency Inspection Database includes documentation for regulatory agency inspections of DOE facilities on the Hanford Site. Regulatory agency inspections can result in noncompliance or enforcement actions for alleged violations of applicable federal, state, and local laws and regulations. As such, the Regulatory Agency Inspection Database links to the Environmental Action Tracking System. The Environmental Action Tracking System documents alleged regulatory noncompliance and enforcement actions and their status for the Hanford Site (see Section 2.9).

During CY 2014, 76 regulatory agency inspections were conducted at DOE facilities on the Hanford Site. Ecology conducted 37, WDOH conducted 25, EPA (Region 10) conducted 6, the city of Richland conducted 2, the Department of Transportation conducted 1, and DOE conducted 5. Of these inspections, regulators issued 9 enforcement actions (9 concerns and 26 compliance actions). The fines and penalties assessed and paid (see Section 2.9) totaled $190,594.

2.1.2.2.1 RCRA Inspections

The Ecology inspections focused on TSD unit compliance with the *Hanford Facility Dangerous Waste Permit* (WA7890008967, 1994). The TSD units inspected during 2014 included the following facilities:

- 200 Area ETF
- 222-S Laboratory
- 242-A Evaporator
- 300/400 Area facilities
- 325 Building
- 331 Building
- 350 Complex
- B Plant
- IDF
- LERF
- Central Waste Complex (CWC)
- Low-Level Burial Grounds (LLBG) Trenches 31 and 34
- LLBG Trench 94
- Tank Farms
- T-Plant
- Waste Receiving and Processing (WRAP) Facility
- Waste Sampling and Characterization Facility (WSCF)
- 90-day accumulation areas
- Satellite accumulation areas
- Universal waste management operations.

Section II.O of the RCRA permit addresses general inspection requirements. General inspections are conducted in addition to the TSD unit inspections specified in Parts III, V, and/or VI of the RCRA permit. The RCRA permit requires general inspections of the 100, 200-East, 200-West, 300, and 400 Areas and the Columbia River shoreline. Inspections are performed annually in these areas to identify and correct potential malfunctions, deterioration, operator errors, and discharges, which may cause or lead to the release of dangerous waste constituents to the environment, or that threaten human health. RCRA permit general inspection summary reports are maintained in the Hanford Facility Operating Record.

2.1.2.2.2 Clean Air Act Inspections

In 2014, the WDOH inspections focused on compliance of major and minor stack air emission units with the Air Operating Permit and Radioactive Air Emissions License (FF-01) (WDOH 2012). The EPA inspections focused on asbestos management under the *Clean Air Act of 1986* and the "National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Asbestos" (40 CFR 61, Subpart M). The city of Richland inspections are limited to the 300 Area of the Hanford Site and involved implementation of the terms and conditions of the Industrial Wastewater Permit (CR-IU-010) and discharges to the publicly owned treatment works.

The WSCF laboratory was shutdown in September 2014, and all analytical equipment in the laboratory rooms was removed. All satellite and 90-day hazardous waste accumulation areas inside and outside the laboratory have been shut down and removed. The power to the exhaust fans for the laboratory area ventilation system was removed, and the fan inlets were isolated by 'blanking off' fan inlets. Because the laboratory area ventilation system still contains high-efficiency particulate air (HEPA) filters and has a 'potential to emit' radioactive materials, the emission unit was reassigned as a diffuse and fugitive emission unit in the Hanford Radioactive Air Emissions License (FF-01), Table 2-1. The laboratory area ventilation system will remain in the FF-01 license as a diffuse and fugitive emission unit until such time funding becomes available to dispose of the HEPA filters.

2.1.2.3 RCRA Groundwater Monitoring

LA Brouillard

The Soil and Groundwater Remediation Project (see Section 8) conducts the RCRA groundwater monitoring for the Hanford Site. To determine if contaminated groundwater with dangerous constituents was present, 14 RCRA TSD units were monitored in 2014, 7 sites were monitored to assess the extent of known contaminants, and 2 sites were monitored under corrective action programs.

LERF (Section 5.3.4.2) and IDF (Section 5.3.3.7) are two of the 14 TSD units operating under Part III of the RCRA permit (WA7890008967). Since June 2006, IDF was operated under a unit-specific groundwater monitoring plan. Because the unit has not yet received waste, monitoring is performed under a Pre-Active Life Program (standby mode).

The other 12 TSD units monitored under RCRA are scheduled to be closed under Part V of the RCRA permit (WA7890008967). A summary of groundwater monitoring activities for these sites during 2014 is provided in Section 8. The detailed groundwater monitoring information for 2014 will be available in September 2015 with the release of *Hanford Site Groundwater Monitoring Report for 2014*.

Groundwater monitoring is required for three regulated, non-RCRA waste facilities. The 200 Area Treated Effluent Disposal Facility ([TEDF], Section 5.3.4.3) and the State-Approved Land Disposal Site (Section 5.3.4.1) are monitored under WAC 173-216, "State Waste Discharge Permit Program." The Solid Waste Landfill is monitored for compliance with requirements in WAC 173-350, "Solid Waste Handling Standards." Wells near these facilities were monitored in 2014 for waste constituents specified in the facility permits.

2.1.3 *Comprehensive Environmental Response, Compensation, and Liability Act of 1980* (CERCLA)

JW Cammann

In 1980, Congress passed CERCLA to address response, compensation, and liability for past releases or potential releases of hazardous substances, pollutants, and contaminants to the environment. Because nuclear production and disposal facilities at the Hanford Site resulted in past releases of hazardous substances, pollutants, or contaminants, the facility is subject to CERCLA provisions.

For waste sites where hazardous substances, pollutants, or contaminants remain at the site above levels that allow for unlimited use and unrestricted exposure, CERCLA requires a review every 5 years to evaluate the implementation and performance of a remedy to determine if the remedy is or will be protective of human health and the environment. The 5-year review requirement applies to all remedial actions selected under CERCLA §121. The CERCLA Five-Year Review Report documents the methods, findings, and conclusions of the 5-year reviews, which can require institutional controls and/or National Resource Damage Assessment and Restoration (NRDAR) Program mitigation. The results of the three 5-year reviews conducted since 2000 are documented in the *USDOE Hanford Site First Five-Year Review Report* (EPA 2001); the *Second CERCLA Five-Year Review Report for the Hanford Site* (DOE/RL-2006-20); and the *Third CERCLA Five-Year Review Report* (DOE/RL-2011-56).

During CY 2014, work was initiated on the *Fourth CERCLA Five-Year Review Report.* A draft of the report is planned to be completed by September 30, 2015. The final report is planned for issuance by November 30, 2016.

2.1.3.1 Superfund Amendments and Reauthorization Act of 1986

The *Superfund Amendments and Reauthorization Act* (SARA) amended CERCLA on October 17, 1986. SARA reflected EPA's experience in administering the complex Superfund program during its first 6 years and made several important changes and additions to the program. SARA:

- Stressed the importance of permanent remedies and innovative treatment technologies in cleaning up hazardous waste sites
- Required Superfund actions to consider the standards and requirements found in other state and federal environmental laws and regulations
- Provided new enforcement authorities and settlement tool
- Increased state involvement in every phase of the Superfund program
- Increased the focus on human health problems posed by hazardous waste sites
- Encouraged greater citizen participation in making decisions on how sites should be cleaned up
- Increased the size of the trust fund to $8.5 billion.

SARA also required EPA to revise the Hazard Ranking System (HRS) to ensure that it accurately assessed the relative degree of risk to human health and the environment posed by uncontrolled hazardous waste sites that may be placed on the National Priorities List (NPL).

2.1.4 Emergency Planning and Community Right-to-Know Act of 1986

GM Fritz

Title III of SARA, also known as the *Emergency Planning and Community Right-to-Know Act of 1986* (EPCRA), requires owners and operators of facilities that handle certain hazardous chemicals onsite to provide information on the release, storage, and use of these chemicals to organizations responsible for emergency response planning. EPCRA has four major provisions: emergency planning, emergency release notification, hazardous chemical inventory reporting, and toxic chemical release inventory reporting. Table 2.1 summarizes sections of EPCRA and its requirements, including two annual reports: the *Tier Two Emergency and Hazardous Chemical Inventory*, which provides information about hazardous chemicals stored at each facility in amounts exceeding minimum threshold levels, and the *Toxic Chemical Release Inventory*, which describes total annual releases of certain toxic chemicals and associated waste management activities. Table 2.2 provides an overview of reporting under the EPRCA during 2014.

The *2014 Hanford Site Tier Two Emergency and Hazardous Chemical Inventory* (DOE/RL-2015-09) was submitted to Ecology's Community Right-To-Know Unit; local emergency planning committees for Benton, Franklin, and Grant counties; and the city of Richland and Hanford Site Fire Department before the annual March 1 deadline. The Hanford Site had 41 hazardous chemicals that exceeded the reporting thresholds. One chemical category (lead acid batteries, which contain sulfuric acid, an extremely hazardous substance) exceeded the reporting threshold for offsite locations (700 Area, 1100 Area, and the Federal Building). Table 2.3 lists the average quantities of the 10 hazardous chemicals stored in greatest quantity on the Hanford Site in 2014.

The *2014 Hanford Site Toxic Chemical Release Inventory* report (DOE/RL-2015-43) was submitted to EPA and Ecology before the annual July 1 deadline. During CY 2014, the Hanford Site exceeded activity thresholds for lead, naphthalene, propylene, and xylene. Information concerning these chemicals is described in Table 2.4.

Table 2.1. Emergency Planning and Community Right-to-Know Act Requirements Summary

Section	CFR Section	Reporting Criteria	Due Date	Agencies Receiving Report
302	40 CFR 355: Emergency Planning Notifications	The presence of an extremely hazardous substance in quantity equal to or greater than threshold planning quantity at any one time.	Within 60 days of threshold planning quantity exceedance.	Local Emergency Planning Committee; State Emergency Response Commission
302	40 CFR 355: Emergency Planning Notifications	Change occurring at a facility that is relevant to emergency planning.	Within 30 days after the change has occurred.	Local Emergency Planning Committee
304	40 CFR 355: Emergency Release Notifications	Release of an extremely hazardous substance or a CERCLA hazardous substance in quantity equal to or greater than reportable quantity.	Initial notification: immediate (within 15 minutes of knowledge of reportable release). Written follow-up: within 14 days of the release.	Local Emergency Planning Committee; State Emergency Response Commission

Table 2.1. Emergency Planning and Community Right-to-Know Act Requirements Summary

Section	CFR Section	Reporting Criteria	Due Date	Agencies Receiving Report
311	40 CFR 370: Material Safety Data Sheet Reporting	The presence at any one time at a facility an Occupational Safety and Health Administration (OSHA) hazardous chemical in quantity equal to or greater than 10,000 pounds (4,500 kilograms), or an extremely hazardous substance in quantity equal to or greater than threshold planning quantity or 500 pounds (230 kilograms), whichever is less.	Revised list of chemicals due within 3 months of a chemical exceeding a threshold.	Local Emergency Planning Committee; State Emergency Response Commission; Local Fire Departments
312	40 CFR 370: Tier Two Report	The presence at any one time at a facility an OSHA hazardous chemical in quantity equal to or greater than 10,000 pounds (4,500 kilograms), or an extremely hazardous substance in quantity equal to or greater than threshold planning quantity or 500 pounds (230 kilograms), whichever is less.	Annually by March 1	Local Emergency Planning Committee; State Emergency Response Commission; Local Fire Departments
313	40 CFR 372: Toxic Release Inventory Report	Manufacture, process, or use at a facility, any listed Toxic Release Inventory chemical in excess of its threshold amount during the course of a CY. Thresholds are 25,000 pounds (11,300 kilograms) for manufactured or processed or 10,000 pounds (4,500 kilograms) for otherwise used except for persistent, bio-accumulative, toxic chemicals, which have thresholds of 100 pounds (45 kilograms) or less.	Annually by July 1	EPA; State Emergency Response Commission

Table 2.2. Emergency Planning and Community Right-to-Know Compliance Reporting

Section	Description of Reporting	Status	Notes
302	Emergency planning notifications	Yes	
304	Extremely hazardous substance release notification	Not required	No releases occurred.
311	Material safety data sheet	Yes	
312	Chemical inventory	Yes	
313	Toxic release inventory	Yes	

Table 2.3. Average Quantity of the 10 Hazardous Chemicals Stored in Greatest Quantities

CAS#	Chemical	TPQ	Average Amount, lb
7440 23-5	Sodium	10,000	4,624,378

Table 2.3. Average Quantity of the 10 Hazardous Chemicals Stored in Greatest Quantities

CAS#	Chemical	TPQ	Average Amount, lb
7647-14-5	Sodium chloride	10,000	3,273,385
8012-95-1	Mineral oil	10,000	1,393,680
7664-93-9	Sulfuric acid	500	350,349
00-00-0	Lead acid batteries	500	297,040
00-00-0	Diesel fuel (Grades 1 and/or 2)	10,000	277,145
00-00-0	Petroleum distillates (unspecified/trade secret)	10,000	271,749
1305-78-8	Calcium oxide	10,000	247,677
00-00-0	Gasoline	10,000	178,979
74-98-6	Propane	10,000	159,707

Table 2.4. Toxic Chemicals Exceeding Reporting Thresholds

Chemical	CAS No.	Non-Exempt Use Description
Lead	7439-92-1	Ammunition fired during range practice by Hanford Safeguards and Security
Naphthalene	91-20-3	Diesel used for stationary equipment
Propylene	115-07-1	Propane gas used site-wide
Xylene	1330-20-7	Gasoline used for stationary equipment

2.1.5 Reportable Releases

TH Pysto

Federal regulations establish reporting requirements for certain environmental releases, which are reported to the National Response Center, the federal central point of contact for reporting hazardous substances and oil spills. Reportable releases include spills or discharges of hazardous substances to the environment, other than releases permitted under state or federal law. CERCLA, Section 103, requires reporting for releases of hazardous substances that equal or exceed specified reportable quantities, including releases that are continuous and stable in quantity and rate but exceed specified limits. Washington State regulations (WAC 173-303-145, "Spills to the Environment") also require that spills or non-permitted discharges of dangerous waste or hazardous substances to the environment be reported. The requirement applies to spills or discharges onto the ground, into groundwater or surface water (Columbia River), or in the air such that human health or the environment are threatened, regardless of the quantity of dangerous waste or hazardous substance.

During the reporting period, hazardous substance releases were conservatively assessed under WAC 173-303-145, and notifications were provided to Ecology for various spills and releases. These spills were cleaned up, and materials were disposed in accordance with applicable requirements.

2.1.6 Toxic Substances Control Act

DI Weyns

The Hanford Site has a well-structured program that complies with the *Toxic Substances Control Act* (TSCA) requirements that primarily involve regulation of polychlorinated biphenyls (PCB). Federal regulations for PCB use, storage, and disposal are provided in 40 CFR 761, "Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions." Background information regarding Hanford Site PCB management activities are as follows:

- PCB wastes on the Hanford Site are stored and/or disposed of in accordance with 40 CFR 761
- Some radioactive PCB waste remains in extended storage onsite pending the development of adequate treatment and disposal technologies and capacities
- Electrical equipment that might contain PCBs is maintained and serviced in accordance with 40 CFR 761.
- The *Framework Agreement for Management of Polychlorinated Biphenyls (PBCs) in Hanford Tank Waste* (EPA et al. 2000), signed on August 31, 2000, resulted in the Tri-Party Agencies and DOE contractors working together to resolve the regulatory issues associated with managing PCB waste at the WTP, tank farms, and affected waste management units adjacent to the tank farms.
- RL submitted the *2014 Hanford Site Polychlorinated Biphenyl Annual Document Log* (DOE/RL-2015-25) and the *2014 Hanford Site Polychlorinated Biphenyl Annual Report* (DOE/RL-2015-24) to EPA on June 26, 2015, as required by 40 CFR 761.180, "Records and Monitoring." These documents describe the PCB waste management and disposal activities occurring on the Hanford Site.
- Work performed under risk-based disposal approvals (RBDA) continued in 2014, including but not limited to single-shell tank (SST) waste retrieval activities in accordance with EPA Phase I and II RDBAs for the use of double-shell tank (DST) PCB remediation waste in accordance with 40 CFR 761.61(c), "PCB Remediation Waste." **Note:** Phase I identifies general conditions that apply to the overall strategy and retrieval process, and Phase II identifies tank-specific conditions.
- The EPA's 2005 RBDA letter allowed for the solidification of the K-Basins North Load-Out Pit (NLOP) sludge, which was a multi-phasic (mixture of liquid and non-liquid phases) PCB remediation waste. The waste was solidified at the Hanford Site T Plant facility to meet radiological treatment standards in preparation for disposal.
- Condition 5 of the NLOP RBDA, requires DOE to submit to EPA plans and schedules for final decontamination and/or disposal of the NLOP treatment system. As of 2015, DOE is developing plans to place additional K-Basins sludge containers in T Plant, which will require removal of the NLOP treatment equipment. When the K-Basins Sludge Project is finalized, EPA will be notified of plans to decontaminate or dispose of the NLOP treatment equipment.

2.1.7 National Environmental Policy Act of 1969 (NEPA)

ES Pennala

NEPA was enacted to ensure that potential impacts as well as technical factors and costs are considered during federal decision making. NEPA requires that an environmental impact statement (EIS) be prepared

for major federal agency actions that have the potential to significantly affect human health or the environment. A record of decision (ROD) documents decisions concerning EIS proposed actions. An environmental assessment (EA) is prepared when it is uncertain if a proposed action would require preparation of an EIS. A finding of no significant impact (FONSI) may be issued to present the reasons why an action will not have a significant effect on human health or the environment and, therefore, not require preparation of an EIS. A supplement analysis is prepared to consider significant new information or changed circumstances relevant to environmental concerns and bearing on the proposed action or its impacts.

Certain proposed actions may be categorized into classes that have been analyzed and determined to individually or cumulatively have no significant environmental impact (10 CFR 1021, Subpart D, Appendices A and B). Known as categorical exclusions, these actions are exempt from NEPA EA or EIS requirements if certain eligibility criteria found at 10 CFR 1021.410 (proposed action fits classes of actions, proposed action has no extraordinary circumstances, and proposed action is not segmented into smaller actions to avoid significance or connected to other actions with potentially significant impacts) and conditions that are integral elements (found at 10 CFR 1021, Subpart D, Appendix B) are met. Some categorical exclusions are applicable to general DOE actions and do not require written documentation for application.

2.1.7.1 Hanford Site Environmental Impact Statements

The following subsections summarize the status of NEPA documentation planned or underway at the Hanford Site during CY 2014. The NEPA documentation for the Hanford Site is available online at http://www.hanford.gov/page.cfm/officialdocuments .Ongoing environmental impact statements related to the Hanford Site are described in the following sections.

2.1.7.1.1 Natural Gas Pipeline EIS (DOE/EIS-0467)

On January 23, 2012, DOE published a Notice of Intent to Prepare DOE/EIS-0467 for the Acquisition of a Natural Gas Pipeline and Natural Gas Utility Service at the Hanford Site, Richland, Washington; and Notice of Floodplains and Wetlands Involvement (77 FR 3255). The EIS will evaluate the environmental impacts of a proposal to enter into a contract with Cascade Natural Gas Corporation (Cascade) a natural gas supplier in Washington State to construct, operate, and maintain a natural gas pipeline. The pipeline would deliver natural gas to support the WTP (Section 5.6) and the 242-A Evaporator (Section 5.4.4.4) operations in the 200-East Area. The proposed pipeline would begin from a new interconnect tap on the existing Williams Northwest Pipe transmission line in Franklin County, north of the Pasco, Washington, airport, and then run westerly across non-DOE lands and under the Columbia River, crossing near the Hanford Site 300 Area, before turning northwest and paralleling Route 4S. The pipeline would terminate at the WTP and 242-A Evaporator.

Preparation of the draft Natural Gas Pipeline EIS continued during CY 2014. Activities included evaluating the Proposed Action and No Action Alternative, as well as pipeline route alternatives and 200-East Area interface options (direct piping of natural gas to the WTP and 242-A Evaporator steam boilers or direct piping of natural gas to a new steam plant to be constructed with steam piped to the boilers). The Final Natural Gas Pipeline EIS will contain comments made to the draft EIS and responses to the comments, and will identify a preferred main pipeline route alternative and a preferred 200-East Area

interface option. The schedules for the issuance and publication of the draft (for public comment), Final EIS, and ROD are to be determined.

2.1.7.1.2 Final Long-Term Management and Storage of Elemental Mercury Supplemental Environmental Impact Statement (DOE/EIS-0423-S1)

Pursuant to the *Mercury Export Ban Act of 2008* (Public Law 110-414), DOE was directed to designate a facility or facilities for the long-term management and storage of elemental mercury generated within the United States. As a result, the DOE issued the *Final Long-Term Management and Storage of Elemental Mercury Environmental Impact Statement (Mercury Storage EIS)* (DOE/EIS-0423) in January 2011. The EIS evaluated the environmental impacts associated with the reasonable alternatives for managing and storing elemental mercury at seven candidate locations (Colorado, Idaho, Missouri, Nevada, South Carolina, Texas, and Washington); and identified the Waste Control Specialists, LLC, site near Andrews, Texas, as the Preferred Alternative for the long-term management and storage of elemental mercury. On June 5, 2012, DOE announced an intent to prepare a supplement (DOE/EIS-0423-S1) to the January 2011 EIS to evaluate alternatives for a facility at and near the Waste Isolation Pilot Plant (WIPP) near Carlsbad, New Mexico.

Based on analysis in this SEIS and public comment, DOE has not changed its Preferred Alternative, the Waste Control Specialists, LLC, site near Andrews, Texas. DOE will issue a Record of Decision no sooner than 30 days after publication of the EPA Notice of Availability for the *Final Mercury Storage SEIS* in the *Federal Register*. The selection of a site will be based on the January 2011 *Mercury Storage EIS*, this *Mercury Storage SEIS*, and other appropriate factors and will be announced in a Record of Decision in the *Federal Register*.

2.1.7.2 Hanford Site Environmental Assessments

Ongoing environmental assessments related to the Hanford Site are described in the following sections.

2.1.7.2.1 Draft Environmental Assessment for Closure of the Solid Waste Landfill and the Nonradioactive Dangerous Waste Landfill (DOE/EA-1707)

This draft environmental assessment (DOE/EA-1707) provides information and analyses of proposed DOE activities associated with closure of the DOE Hanford Site's Nonradioactive Dangerous Waste Landfill (NRDWL) and the Solid Waste Landfill (SWL), located southeast of the Central Plateau off Army Loop Road (refer to Section 5.2.2.2.2). Work on DOE/EA-1707 has been temporarily suspended. The final EA and FONSI are on hold pending program priority decisions.

2.1.7.2.2 Draft Environmental Assessment for Hanford Land Conveyance and Notice of Potential Floodplain and Wetland Involvement at the Hanford Site, Richland, Washington (DOE/EA-1915)

On September 19, 2012, DOE published a *Notice of Intent to Prepare an Environmental Assessment and Notice of Potential Floodplain and Wetland Involvement for the Proposed Conveyance of Land at the Hanford Site, Richland, Washington* (DOE/EA-1915) in the Federal Register (77 FR 58112). DOE announced its intent to prepare an EA to assess the potential environmental effects of conveying approximately 1,641 acres of Hanford Site land to a local economic development organization. Conveyance of the land could include title transfer, lease, easement, license, or a combination of these realty actions. The Tri-City Development Council (TRIDEC), a DOE designated Community Reuse

Organization and 501(c)(6) nonprofit corporation, submitted a proposal to DOE in May 2011 (amended October 2011) requesting the transfer of the approximately 1,641 acres of land located in the southeastern corner of the Hanford Site near the city of Richland in Benton County, Washington, for economic development purposes. Due to continuing mission needs on some of the requested lands, DOE began assessing a 4,413-acre area to identify sufficient land that would be suitable for conveyance to TRIDEC for economic development.

On December 19, 2014, Congress passed the *Howard P. "Buck" McKeon National Defense Authorization Act for Fiscal Year 2015*, which contains language directing DOE to transfer 1,641 acres of land to the west of Hanford's 300 Area (the land conveyance area) to TRIDEC by September 30, 2015. Conveyance of land out of DOE ownership will necessitate modification of the *Hanford Facility Resource Conservation and Recovery Act Permit* (see Section 2.1.2.1).

2.1.7.2.3 Final Environmental Assessment for Expansion of Borrow Areas on the Hanford Site (DOE/EA-1934)

The *Final Environmental Assessment for Expansion of Borrow Areas on the Hanford Site* (DOE/EA-1934, August 15, 2013), evaluated the potential environmental impacts of expansion or continued use of existing sand and gravel pits located on the Hanford Site (Pits F, H, N, 6, 9, 18, 21, 23, 24, 30, and 34) and establishing one new borrow area source in the 100 Area for ongoing construction activities and fill material following remediation activities. The scope of this EA did not include borrow sources for silt-loam material. On October 15, 2013, the *Expansion of Borrow Areas on the Hanford Site Mitigation Action Plan for DOE/EA-1934* (WCH-561) was issued. The purpose of the proposed action in this EA is to meet DOE's need to secure raw aggregate sand and gravel material (approximately 10,714,000 bank cubic meters) to support ongoing environmental cleanup restoration projects (backfill of remediated waste sites), as well as construction and maintenance activities across the Hanford Site. Although final remedial action decisions have yet to be made for some cleanup work, the proposed action would support the projected needs for sand and gravel for a period of approximately 10 years.

Section 4.g of DOE Order 451.1B, Change 3, NEPA Compliance Program, requires "Tracking and annually reporting progress in implementing a commitment for environmental impact mitigation that is essential to render the impacts of a proposed action not significant, or that is made in a record of decision." The *DOE/EA-1934 Mitigation Action Plan Annual Report Calendar Year 2014* required by DOE Order 451.1B was issued in February 2015. This annual report provides a summary of *DOE/EA-1934 Mitigation Action Plan implementation in CY 2014*.

2.1.7.2.4 Draft Programmatic Environmental Assessment for Recycle of Scrap Metals Originating from Radiological Areas (DOE/EA-1919)

During CY 2014, work continued on completing the *Programmatic Environmental Assessment for the Recycle of Scrap Metals Originating from Radiological Areas* (DOE/EA-1919). DOE senior managers are reviewing the EA and comment response document. This EA evaluates alternatives for the management of scrap metal originating from DOE radiological control areas, including the proposed action to allow for the recycle of uncontaminated scrap metal that meets the requirements of *Radiation Protection of the Public and the Environment* (DOE O 458.1). Metals with volumetric radioactive contamination are not included in the scope of this Programmatic EA. DOE plans to complete the Programmatic EA; issue a

FONSI or prepare a Programmatic EIS prior to deciding whether to implement a change to the policy established by the Secretary of Energy in a July 13, 2000, memorandum (Richardson 2000). The memorandum imposed an agency-wide suspension on the unrestricted release of scrap metal originating from radiological areas at DOE facilities for recycling; in response to public concerns about the potential effects of radioactivity in or on metal recycled from DOE facilities.

2.1.7.3 Hanford Site Categorical Exclusions

Categorical exclusions encompass classes of actions that DOE has analyzed and determined do not individually or cumulatively have a significant effect on human health or the environment, and for which neither an EA nor an EIS is required (76 FR 63764, "National Environmental Policy Act Implementing Procedures").

On August 9, 2012, the DOE NEPA Compliance Officer directed the elimination of 16 sitewide categorical exclusions, effective December 31, 2012, and requested Hanford Site contractors to submit for approval annual categorical exclusions for routine and recurring work activities in accordance with the provisions of the newly modified NEPA implementing procedures. Activity-specific categorical exclusions continue to be submitted to the DOE NEPA compliance officer for non-routine, non-recurring, project-specific work activities. A standard format was developed for use by the DOE NEPA compliance officer to perform and document the results of NEPA review screening activities.

Copies of annual and activity specific categorical exclusions approved by the DOE NEPA Compliance Officer for CY 2014 are posted on the DOE NEPA web page at http://www.hanford.gov/page.cfm/categoricalexclusions.

2.1.8 Institutional Controls Plan

DR Ranade

The *Sitewide Institutional Controls Plan for Hanford CERCLA Response Actions and RCRA Corrective Actions* (DOE/RL-2001-41) describes the institutional controls for the Hanford Site, in addition to implementation and maintenance in accordance with CERCLA and/or RCRA decision documents. The CERCLA decision documents present the selected remedial actions chosen in accordance with CERCLA, as amended by the SARA and implemented under 40 CFR 300. CERCLA decision documents are developed as part of the cleanup mission at the Hanford Site, which began in 1989 following the end of the national defense mission. The selected remedies chosen may include institutional controls and the CERCLA decision documents identify specific requirements for these controls.

Institutional controls are primarily administrative in nature and typically are used to augment the engineered components of a selected remedy to minimize the potential for human exposure to contaminants. Active institutional controls, such as controlling access to the Hanford Site or activities that may affect remedial action, generally are employed during remediation. After remediation is completed, passive institutional controls are employed such as permanent markers, retaining public records and archives, or sustaining regulations regarding land or resource use. Some active institutional controls, such as monitoring and controlling access to the area, also may be employed after remediation is completed.

Hanford Site institutional controls assessments are generally conducted in conjunction with the Hanford Site CERCLA five-year review. DOE will continue to conduct institutional controls assessments as

required by the CERCLA and/or RCRA decision documents. The ongoing review of the institutional controls by individual projects also will continue. The Hanford Site institutional controls assessment, in conjunction with the CERCLA Five-year review, will be a 'roll up' of these reviews and will serve as a means to evaluate effectiveness of the institutional controls. Based on the ongoing review, contractors will provide an annual update on the effectiveness of the institutional controls to EPA and Ecology at the area unit managers meetings conducted every September. Minutes from the unit manager's meeting are available in the TPA Administrative Record and can be accessed online at http://www5.hanford.gov/arpir.

The Long-Term Stewardship organization is responsible for managing institutional controls related to Hanford Site access control and the wastes sites in the 100-F Area. In CY 2014, one excavation permit was issued in the 100-F Area for anchoring a trailer to support surveillance and maintenance activities at the 105-F Interim Safe Storage (ISS) building. The excavation was within the institutional controls limit of 15 feet (4.6 meters). In addition, remote-monitored video cameras were installed in the 100-F Area along the Columbia River to monitor warning signs installed as an institutional control. The remote camera system detected a warning sign along the Columbia River that was knocked down by a windstorm in fall 2014; the remote monitoring system allowed the Long-Term Stewardship organization to quickly reinstall the sign. The warning signs along Hanford Site boundary are in place, and no broken fences were observed.

The River Corridor Project has a number of institutional controls in both interim action and final ROD documents. In CY 2014, access controls were in place and active for the River Corridor Project, and no public trespass events at waste sites were reported. In addition, approved excavation permits were in place for all active remediation activities assessed. Warning signs were in place at access road entrances to active remediation areas in the 100 and 300 Areas. Vegetation partially obscuring portions of some of the signs was removed. Required shoreline signage checked during the 2014 institutional controls assessment was present at the 300 Area and at the reactor areas in the 100 Area, with the exception of the Spanish-language shoreline sign at 100-H. The missing 100-H sign was subsequently replaced.

The Central Plateau Project also has a number of institutional controls in both interim and final ROD documents. In 2014 an assessment of institutional controls at 200-UP-1 Operable Unit, 221-U Facility, and 200-ZP-1 Operable Unit did not identify deficiencies with land-use management, entry restrictions, groundwater management, or warning signs.

2.1.9 Federal Insecticide, Fungicide, and Rodenticide Act

JM Rodriguez

EPA administers the *Federal Insecticide, Fungicide, and Rodenticide Act*. The Washington State Department of Agriculture administers standards to regulate implementation of the Act in the state, including the "Washington Pesticide Control Act*'*(RCW 15.58), the "Washington Pesticide Application Act" (RCW 17.21), and rules relating to general pesticide use codified in WAC 16-228, "General Pesticide Rules." Commercial pesticides are applied on the Hanford Site by commercial pesticide operators that are listed on one of two commercial pesticide applicator licenses, and by a licensed private commercial applicator.

2.2 Radiation Protection Statutes and Regulations

JW DeMers

The Hanford Site is subject to radiation protection statutes and regulations designed to protect the health and safety of the public, workforce, and the environment. Relevant laws and regulations are described in the following sections.

2.2.1 Atomic Energy Act of 1954

The *Atomic Energy Act of 1954* (AEA), promulgated to ensure proper management of radioactive materials, and its amendments include provisions to delegate roles and responsibilities to control radioactive materials and nuclear energy primarily to DOE, the U.S. Nuclear Regulatory Commission (NRC), and EPA. Through the AEA, DOE regulates the control of radioactive materials under its authority, including the TSD of low-level radioactive waste from its operations. Sections of the AEA authorize DOE to establish radiation protection standards for itself and its contractors. Accordingly, DOE promulgated a series of regulations (e.g., 10 CFR 820, "Procedural Rules for DOE Nuclear Activities;" 10 CFR 830; "Nuclear Safety Management;" and 10 CFR 835, "Occupational Radiation Protection"). Additional DOE directives to protect public health and the environment from potential risks associated with radioactive materials include DOE O 435.1, Chg. 1, *Radioactive Waste Management*, and DOE O 458.1, Chg. 2, *Radiation Protection of the Public and Environment*. Hanford Site operations are subject to these regulations and directives.

DOE directives may be accessed via the Departmental Directives Program website at: https://www.directives.doe.gov/. DOE standards may be accessed via the DOE Office of Health, Safety, and Security website at: http://energy.gov/ehss/services/nuclear-safety/department-energy-technical-standards-program.

2.2.2 DOE O 458.1, Radiation Protection of the Public and the Environment

The purpose of DOE O 458.1 is to establish standards and requirements for conduct of DOE and DOE contractor operations with respect to radiological protection of the public and the environment. This order was developed and issued consistent with DOE's policy to implement legally applicable radiation protection requirements; consider and adopt, as appropriate, recommendations by authoritative organizations (e.g., the National Council on Radiation Protection and Measurements [NCRP] and the International Commission on Radiological Protection [ICRP]); and adopt and implement standards generally consistent with those of the NRC for DOE facilities and activities not subject to NRC authority. Specifically, relative to guidance, standards, and regulatory requirements existing at the time of its issuance, this order adopted applicable standards issued by the ICRP and the NCRP, incorporated regulatory requirements applicable to DOE operations, and consolidated and upgraded DOE guidance for contaminated property.

DOE O 458.1 applies to all DOE elements and contractors performing work for DOE, as provided by law and/or contract, and as implemented by the appropriate contracting officer. This order was developed and issued under the authority of the AEA as amended, which authorizes DOE to provide for the radiological health and safety of the public for operations conducted under DOE direction.

Relative to the radiological health and safety of the public, the objectives of DOE O 458.1 are to ensure that DOE operations achieve the following:

- Maintain radiation exposures to the public within established limits
- Control radioactive contamination through the management of real and personal property
- Ensure potential exposures to the public are as far below established limits as is reasonably achievable
- Ensure DOE facilities have the capabilities, consistent with the types of operations conducted, to monitor routine and non-routine releases and to assess doses to the public.

In addition to providing radiological protection to the public, the objective of DOE O 458.1 is to provide radiological protection of the environment to the extent practical.

DOE O 458.1 also provides derived concentration guide values as reference values for conducting radiological environmental protection programs at operational DOE facilities and sites. Table 2.5 provides the radiation standards (dose limits) for protection of the public from all routine DOE concentrations. These DOE-derived concentration guide values are based on a committed dose standard of 100 millirem (1 millisievert) due to ingestion, inhalation, or direct exposure during a given year, and are provided for three exposure pathways: ingestion of water, inhalation of air, and immersion in a gaseous cloud. This order also provides radiological protection requirements and guidelines for cleanup of residual radioactive material, management of the resulting wastes and residues, and clearance of property. These requirements and guidelines are applicable at the time the property is released.

2.2.3 DOE O 435.1, Radioactive Waste Management

MS Collins

The purpose of DOE O 435.1, Chg. 1 is to establish requirements to manage of all high-level waste (HLW), transuranic waste, and low-level waste (LLW), including the radioactive component of mixed waste (HLW, transuranic waste, and LLW containing chemically hazardous constituents) in a safe manner that is protective of the worker, public health, and the environment. The order takes a cradle-to-grave approach to managing waste and includes requirements for waste generation, storage, treatment, disposal, and post-closure monitoring of facilities.

Radioactive waste shall be managed such that the requirements of other DOE orders, standards, and regulations are met, including the following:

- 10 CFR 835, "Nuclear Safety Management"
- DOE O 440.1A, *Worker Protection Management for DOE Federal and Contractor Employees*
- DOE O 458.1, *Radiation Protection of the Public and the Environment*.

Table 2.5 Radiation Standards for Protection of the Public from all Routine DOE Concentrations (Dose Limits) [a]

All Pathways (DOE O 458.1)		
Effective dose equivalent for any member of the public from all routine DOE operations[b] shall not exceed the values below.		
	Effective Dose Equivalent[c]	
	mrem/year	**mSv/year**
Routine public dose	100	1
Potential authorized temporary public dose[d]	500	5
Dose to Native Aquatic Animal Organisms from Liquid Discharges (DOE O 458.1)		
Radioactive material in liquid waste discharged to natural waterways shall not cause an absorbed dose[e] to native aquatic animal organisms that exceed 1 rad (10 milligray) per day.		
Drinking Water Pathway Only (40 CFR Parts 9, 141, and 142 (65 FR 76708, *National Primary Drinking Water Regulations; Radionuclides; Final Rule*); WAC 246-290, *Group A Public Water Supplies*; and DOE O 458.1)		
Radionuclide concentrations in DOE-operated public drinking water supplies shall not cause persons consuming the water to receive an effective dose equivalent greater than 4 millirem (0.04 millisievert) per year. DOE operations shall not cause private or public drinking water systems downstream of the facility discharge to exceed the radiological drinking water limits in 40 CFR Parts 9, *OMB Approvals Under the Paperwork Reduction Act*; 141, *National Primary Drinking Water Regulations*; and 142, *National Primary Drinking Water Regulations Implementation*.		
Air Pathways Only (40 CFR 61, *National Emission Standards for Hazardous Air Pollutants[NESHAPs]*)		
Public dose limit at location of maximum annual air concentration as a consequence of routine DOE operations[2]	**Effective Dose Equivalent[3]**	
	mrem/year	**mSv/year**
	10	0.1

[a] Radiation doses received from natural background, residual weapons testing and nuclear accident fallout, medical exposure, and consumer products are excluded from the implementation of these dose limits.
[b] Routine DOE operations imply normal, planned activities and do not include actual or potential accidental or unplanned releases.
[b] Effective dose equivalent is expressed in rem (or millirem) and Sv (or millisievert).
[d] Authorized temporary annual dose limits may be greater than 100 mrem (1 mSv) per year (but cannot exceed 500 mrem [5 mSv]) per year if unusual circumstances exist that make avoidance of doses greater than 100 mrem (1 mSv) per year to the public impracticable. The DOE Richland Operations Office is required to request and receive specific authorization from DOE HQ for an increase from the routine public dose limit to a temporary annual dose limit.
[e] Absorbed dose is expressed in rad (or millirad) with the corresponding value in gray (or milligray) in parentheses.

mrem = millirem
rem = roentgen equivalent in man
mSv = millisievert

2.3 Air Quality Statutes and Regulations

RA Kaldor

This section provides information on federal, state, and local statutes applicable to the Hanford Site air quality program.

2.3.1 Air Quality Regulatory Authority

The federal *Clean Air Act* was enacted to protect and enhance air quality and is the legal basis for federal, state, and local air quality regulations. The law, originally passed in 1967, has been revised extensively on numerous occasions. The *Clean Air Act Amendments of 1990*, the most recent revision of the Act, provides the framework for a significant portion of current federal air quality regulations. The "Washington Clean Air Act" (RCW 70.94), which parallels and supplements federal law, has been revised periodically to keep pace with changes at the federal level.

EPA provides high-level programmatic oversight of the air quality program on the Hanford Site but has delegated authority for implementing applicable *Clean Air Act* regulations to designated state and local regulatory agencies.

The WDOH regulates radioactive air emissions on the Hanford Site by enforcing applicable federal requirements in 40 CFR 61, NESHAPs, Subparts A and H, as well as the state requirements in WAC 173-480, "Ambient Air Quality Standards and Emission Limits for Radionuclides," and WAC 246-247, "Radiation Protection-Air Emissions." Federal regulations for radioactive air emissions are contained in 40 CFR 61, Subpart H.

Ecology regulates criteria and toxic air pollutant emissions at the Hanford Site by enforcing applicable federal requirements in 40 CFR 52, "Approval and Promulgation of Implementation Plans;" 40 CFR 60, "Standards of Performance for New Stationary Sources;" 40 CFR 61; 40 CFR 63, "NESHAPs for Source Categories;" 40 CFR 68, "Chemical Accident Prevention Provisions;" and 40 CFR 82, "Protection of Stratospheric Zone;" as well as the state requirements in WAC 173-400, "General Regulations for Air Pollution Sources;" WAC 173-460, "Controls for New Sources of Toxic Air Pollutants;" WAC 173-480; and WAC 173-491, "Emission Standards and Controls for Sources Emitting Gasoline Vapors." Criteria and toxic air pollutant emissions are often referred to as nonradioactive air emissions at the Hanford Site. Criteria pollutants are particulate matter, nitrogen oxides, sulfur oxides, carbon monoxide, lead, and volatile organic compounds. Toxic pollutants are other chemical contaminants as regulated by Washington State.

The Benton Clean Air Agency regulates demolition and asbestos renovation activities at the Hanford Site in accordance with federal requirements in 40 CFR 61, Subpart M, "National Emission Standard for Asbestos." The Benton Clean Air Agency also regulates outdoor burning activities at the Hanford Site in accordance with state requirements in WAC 173-425, "Outdoor Burning."

2.3.2 Air Permits

Hanford Site contractors evaluate each proposed new or modified emission unit using the new source review requirements of radioactive air emissions WAC 246-247, *Radiation Protection – Air Emissions*, and criteria and toxic air pollutants (WAC 173-400-110, *New Source Review (NSR) for Sources and Portable Sources*; and WAC 173-460-040, *New Source Review*) to determine whether a notice of construction application must be submitted to the WDOH and/or Ecology (as applicable) for approval before construction or operation of the proposed source.

Hanford Site radioactive air emission sources are operated in accordance with the Radioactive Air Emissions License for the Department of Energy Richland Operations Office Hanford Site, License Number FF-01 (WDOH 2012) issued by the WDOH in February 2012. The FF-01 license is a compilation

of all applicable radioactive air emission requirements (ALARACT) and is renewed every 5 years. For each emission unit, the FF-01 license includes either 1) an approval to modify/construct, or 2) an operating license. Overall, Hanford Site radioactive air emissions are controlled to sufficiently low levels to ensure the resultant exposure to any offsite individual remains well below the 10 millirem (100 microsievert) per year standard specified in 40 CFR 61.92, "Standard." Hanford Site radioactive air emissions data are published annually in the radionuclide air emissions report for the Hanford Site (DOE/RL-2015-12, *Radionuclide Air Emissions Report for the Hanford Site, Calendar Year 2014*).

As a major source of air pollutants, the Hanford Site is subject to the air operating permit requirements in 40 CFR 70, "State Operating Permit Programs;" and WAC 173-401, "Operating Permit Regulation." In coordination with WDOH and the Benton Clean Air Agency, Ecology issued Renewal 2 of the Air Operating Permit for a period of 5 years, effective April 1, 2013. Renewal 2 was issued to incorporate new WDOH and Ecology air emission licenses, approval orders, and updated regulatory requirements. The Air Operating Permit is a compilation of applicable *Clean Air Act* requirements for both radioactive and criteria/toxic air pollutant emissions, including the radioactive air emissions license FF-01 (WDOH 2012) issued by WDOH and notice of construction approval orders issued by Ecology. The Air Operating Permit requires the submittal of semiannual reports to the regulatory agencies documenting the status of required monitoring and permit deviations. In addition, an annual report documenting the compliance status of Hanford Site emission sources against applicable *Clean Air Act* requirements, and an annual report that documents total emissions of criteria and toxic pollutants is also required.

The WDOH, Ecology, and the Benton Clean Air Agency conduct regular inspections of Hanford Site emission sources to verify compliance with applicable *Clean Air Act* requirements. Hanford Site contractors and DOE actively work to resolve any potential compliance issues identified during these inspections. During 2014, regulatory agencies conducted over 30 *Clean Air Act* inspections on the Hanford Site, and no violations were issued.

2.4 Water Quality Statutes and Regulations

CJ Clement

This section provides information on federal, state, and local requirements and permit, related to protection of water quality.

2.4.1 Federal Permit – Discharges to Columbia River

The *Clean Water Act of 1977*, as amended, applies to discharges to surface waters in the United States. At the Hanford Site, regulations are applied through the *EPA Administered Permit Programs: The National Pollutant Discharge Elimination System* ([NPDES] 40 CFR 122). DOE does not currently have any discharges to the Columbia River requiring permits.

2.4.2 State Waste Discharge Permit – Discharges to the Soil Column/Groundwater

Ecology's Wastewater Discharge Permit program regulates discharges to state waters, including groundwater. Four Ecology state waste discharge permits were in effect during 2014 (ST-4500, ST0004502, ST0004511, and ST0045514). DOE is the holder of all state waste discharge permits. Ecology's waste water discharge permits webpage is located at http://www.ecy.wa.gov/programs/nwp/permitting/wwd/index.html.

Two Ecology general permits for sand and gravel were in effect during 2014: WAG-50-5180 and WAG-50-5181. They were issued to BNI.

WDOH issues annual permits to DOE to operate Hanford Site onsite sewage systems, which include some holding-tank sewage systems. Most onsite sewage systems (septic systems) operate under permits issued by the WDOH.

2.4.3 Local Discharge Permit – Discharges to the City of Richland Sewer

The city of Richland regulates industrial wastewater discharges to its sewer collection system in accordance with city of Richland Code, *Richland Pretreatment Act* – Chapter 17.30. DOE is the holder of Permit No. CR-IU010, which allows discharges from the 300 Area facilities.

2.4.4 Safe Drinking Water Act of 1974 (SDWA)

LM Kelly

The *Safe Drinking Water Act of 1974* (SDWA) established a cooperative program among local, state, and federal agencies to institute drinking water regulations applicable to all public water systems in the United States. States were granted primary responsibility—known as primacy—for administering and enforcing the SDWA. To obtain primacy, states were required to meet certain criteria, including adoption of regulations equal to or more stringent than EPA regulations.

Washington State was awarded primacy in 1978. The State Board of Health and WDOH became partners in developing and enforcing state drinking water regulations. Hanford Site water systems were designated as public water systems in 1986 and became formally registered as public systems under the jurisdiction of the WDOH in 1987.

The SDWA was amended in 1986 and 1996 (*Safe Drinking Water Act Amendments*). Although the 1986 amendments included provisions that emphasized treatment to ensure safe drinking water, the 1996 amendments focused on source water protection, funding for water system improvements, operator training, providing public information, and strengthening EPA's scientific work, including the use of risk and cost benefit analysis in establishing drinking water standards (DWS). Between 1975 and 2006, these amendments resulted in the development of 18 new drinking water regulations. Post-1996 regulations have included more complex compliance determinations and more advanced treatment technologies. Based on site-specific conditions, many public water systems are either using or investigating the use of new treatment technologies to comply with the increasingly complex requirements.

The Microbial and Disinfection Byproduct Rules include nine drinking water regulations, address acute threats from microbial contamination and chronic threats from disinfectant residuals and disinfection byproducts. These rules limit disinfectant residuals and disinfection byproducts in the distribution systems while improving particle removal in the drinking water treatment plants. In 2014, affected Hanford Site water systems demonstrated compliance with the filtration and disinfection treatment technique requirements and limits for disinfectant residuals and disinfection byproducts.

To protect the health of workers using public water supplies on the Hanford Site, water systems were monitored during 2014 for microbiological, chemical, physical, and radiological constituents. There were no microbiological detections during the 2014 monitoring cycle, and all chemical concentrations in drinking water were well below the maximum contaminant levels established by EPA. Table 2.6 provides selected drinking water standards. System-specific information and analytical results for 2014 radiological monitoring are summarized in Section 7.1.3. Table 2.7 provides the selected surface freshwater quality criteria for toxic pollutants, and Table 2.8 provides the Washington State water quality criteria for the Hanford Reach of the Columbia River.

Table 2.6. Selected Drinking Water Standards

Constituent	DWS[a]		Agency[b]
Antimony	6 µg/L	0.006 ppm	EPA, WDOH
Arsenic	10 µg/L	0.01 ppm	EPA, WDOH
Barium	2,000 µg/L	2 ppm	EPA, WDOH
Cadmium	5 µg/L	0.005 ppm	EPA
Carbon tetrachloride	5 µg/L	0.005 ppm	EPA, WDOH
trihalomethanes[c]	80 µg/L	0.08 ppm	EPA
Chromium	100 µg/L	0.1 ppm	EPA, WDOH
cis-1,2-Dichloroethene	70 µg/L	0.07 ppm	EPA, WDOH
Copper	1,300 µg/L	1.3 ppm	EPA
Cyanide	200 µg/L	0.2 ppm	EPA, WDOH
Fluoride	4 mg/L	4 ppm	EPA, WDOH
Lead	15 µg/L	0.015 ppm	EPA
Mercury (inorganic)	2 µg/L	0.002 ppm	EPA, WDOH
Methylene chloride	5 µg/L	0.005 ppm	EPA, WDOH
Nitrate, as NO_3^-	10 mg/L	10 ppm	EPA, WDOH
Nitrite, as NO_2^-	1.0	1.0 ppm	EPA, WDOH
Selenium	50 µg/L	0.05 ppm	EPA, WDOH
Tetrachloroethene	5 µg/L	0.005 ppm	EPA, WDOH
Thallium	2 µg/L	0.002 ppm	EPA, WDOH
Trichloroethene	5 µg/L	0.005 ppm	EPA, WDOH
Antimony-125	300 pi/L[d]	11.1 Bq/L	EPA
Beta particle and photon activity	4 mrem/yr[e]	40 µSv/yr	EPA, WDOH
Carbon-14	2,000 pCi/L[d]	74.1 Bq/L	EPA
Cesium-137	200 pCi/L[d]	7.4 Bq/L	EPA
Cobalt-60	100 pCi/L[d]	3.7 Bq/L	EPA
Iodine-129	1 pCi/L[d]	0.037 Bq/L	EPA
Ruthenium-106	30 pCi/L[d]	1.11 Bq/L	EPA
Strontium-90	8 pCi/L[d]	0.296 Bq/L	EPA, WDOH
Technetium-99	900 pCi/L[d]	33.3 Bq/L	EPA
Total alpha (excluding uranium)	15 pCi/L[d]	0.56 Bq/L	EPA, WDOH
Tritium	20,000 pCi/L[d]	740 Bq/L	EPA, WDOH
Uranium	30 µg/L	0.03 ppm)	EPA, WDOH

[a] Maximum contaminant level for drinking water supplies.

[b] WDOH = Washington State Department of Health at WAC 246-290.
EPA at 40 CFR 141, *National Primary Drinking Water Regulations*; 40 CFR 143, *National Secondary Drinking Water Regulations*; and EPA 822-R-96-001, *Drinking Water Regulations Health Advisories*.
[c] Standard is for total trihalomethanes.
[d] EPA DWSs for radionuclides were derived based on a 4-mrem/yr dose standard using maximum permissible concentrations in water specified in *National Bureau of Standards Handbook 69* (U.S. Department of Commerce, August 1963, as amended).
[d] Beta and gamma radioactivity from anthropogenic radionuclides. Annual average concentration shall not produce an annual dose from anthropogenic radionuclides equivalent to the total body or any internal organ dose >4 mrem/yr. If two or more radionuclides are present, the sum of their annual dose equivalents shall not exceed 4 mrem/yr. Compliance may be assumed if annual average concentrations of total beta, tritium, and strontium-90 are <50, 20,000, and 8 pCi/L, respectively.

Bq = Becquerel
L = liter
yr = year
pCi/L = picocuries per liter
ppm = parts per million
µg/L = micrograms per liter

Table 2.7. Selected Surface Freshwater Quality Criteria for Toxic Pollutants

Compound	Level that Yields Acute Toxicity[a]		Level that Yields Chronic Toxicity [a]		Protective Level for Human Health Consumption of Water and Organisms[b]	
	µg/L	ppm	µg/L	ppm	µg/L	ppm
Dissolved Metals						
Antimony	–	–	–	–	14	0.014
Arsenic	360.0	0.360	190.0	0.19	0.018	0.000018
Cadmium	1.6	0.0016[c]	0.59	0.00059[d]	- -	–
Chromium (VI)	15	0.015	10	0.01	–	–
Copper	8.4	0.0084[e]	6.0	0.006[f]	–	–
Lead	28	0.028[g]	1.1	0.0011[h]	- -	–
Mercury	2.1	0.0021	–	–	0.14	0.00014
Nickel	750	0.75[i]	83	0.083[j]	610	0.61
Silver	0.94	0.00094 [k]	–	–	–	–
Thallium	–	–	–	–	1.7	0.0017
Zinc	60	0.060[l]	55	0.055[m]	–	–
Total Recoverable Metals						
Chromium(III)[n]	300	0.30[0]	96	0.096[p]	–	–
Mercury	–	–	0.012	0.000012	–	–
Selenium	20	0.02	5.0	0.005	–	–
Anions						
Cyanide [q]	22.0	0.022	5.2	0.0052	700	0.70
Chloride[r]	860,000	860	230,000	230	–	–
Organic Compounds						
Benzene	–	–	–	–	1.2	0.0012
Carbon tetrachloride	–	–	–	–	0.25	0.00025
Chloroform	–	–	–	–	5.7	0.0057
1,2-Dichloroethane	–	–	–	–	0.38	0.00038
Methylene chloride	–	–	–	–	4.7	0.0047
Toluene	–	–	–	–	6,800	6.80
Tetrachloroethene	–	–	–	–	0.8	0.0008
1,1,2-Trichloroethane	–	–	–	–	0.60	0.0006
Trichloroethene	–	–	–	–	2.7	0.0027
Vinyl chloride	–	–	–	–	2	0.002
1,4-Dichlorobenzene	–	–	–	–	400	0.40

[a] WAC 173-201A-240, *Toxic Substances*. For hardness-dependent criteria, the minimum value of 47 mg $CaCO_3$/L for 1992-2010 water samples collected near the Vernita Bridge by the U.S. Geological Survey is used. Parts per million (ppm) values are
[h] (1.4620 - [ln (hardness)] 0.1457) exp (1.273[ln (hardness)]-4.705).
[i] (0.998) exp (0.8460 [ln (hardness)]+3.3612).
[j] (0.997) exp (0.8460 [ln (hardness)]+1.1645).
[k] (0.85) exp (1.72[ln (hardness)]-6.52).

equivalent to the reported micrograms per liter (µg/L) concentrations shown.
[b] 40 CFR 131.36, *Toxics Criteria for those States not Complying with Clean Water Act Section 303(c)(2)(B)*.
[c] (1.1367 - [ln(hardness)] 0.04184) exp (1.128[ln(hardness)]-3.828). Hardness expressed as mg $CaCO_3$/L.
[d] (1.1017 - [ln(hardness)] 0.04184) exp (0.7852[ln(hardness)]-3.490).
[e] (0.960) exp (0.9422[ln(hardness)]-1.464).
[f] (0.960) exp (0.8545[ln (hardness)]-1.465).
[g] (1.4620 - [ln (hardness)] 0.1457) exp (1.273[ln (hardness)]-1.460).
[l] (0.978) exp (0.8473 [ln (hardness)]+0.8604).
[m] (0.986) exp (0.8473 [ln (hardness)]+0.7614).
[n] Where methods to measure trivalent chromium are unavailable, these criteria are to be represented by total recoverable chromium.
[o] (0.316) exp (0.8190 [ln(hardness)]+3.688).
[p] (0.860) exp (0.8190 [ln(hardness)]+1.561).
[q] Criteria based on weak and dissociable method.
[r] Dissolved in association with sodium.

Table 2.8. Washington State Water Quality Criteria for the Columbia River, Hanford Reach[a]

Parameter	Permissible Levels
Fecal coliform	Geometric mean value less than or equal to 100 colonies/100 milliliters (0.026 gallon) Not more than or equal to 10 percent of samples may exceed the geometric mean value of 200 colonies/100 milliliters (0.026 gallon)
Dissolved oxygen	Greater than 8 mg/L (8 ppm)
Temperature	Less than or equal to 18°C (64°F) as a result of human activities When natural conditions exceed 18°C (64°F), no temperature increases will be allowed that will raise the temperature of the receiving water by more than 0.3°C (0.54°F) Incremental temperature increases resulting from point sources shall not at any time exceed t = 28 / (T + 7), where t = maximum permissible temperature increase measured at a mixing zone boundary and T = background temperature. Incremental temperature increases resulting from non-point sources shall not exceed 2.8°C (5.04°F).
pH	6.5 to 8.5 range Less than 0.5-unit induced variation
Turbidity	Turbidity shall be less than or equal to 5 nephelometric turbidity units over background turbidity when the background turbidity is 50 nephelometric units or less, and shall not increase more than 10 percent when the background turbidity is >50 nephelometric units
Aesthetic value	Shall not be impaired by the presence of materials or their effects, excluding those of natural origin, which offend the senses of sight, smell, touch, or taste
Radioactive substances	Deleterious concentrations of radioactive materials for all classes shall be as determined by the lowest practicable level attainable and in no case shall exceed 1/12.5 of the values listed in WAC 246-221-290 or exceed EPA drinking water regulations for radionuclides, as published in EPA-570/9-76-003 or subsequent revisions thereto (Table 2.1)
Toxic substances	Shall not be introduced above natural background levels in waters of the state that have the potential either singularly or cumulatively to adversely affect characteristic water uses, cause acute or chronic toxicity to the most sensitive biota dependent on those waters, or adversely affect public health, as determined by the department (Table 2.8)

[a] WAC 173-201A, *Water Quality Standards for Surface Waters of the State of Washington*.

2.5 Natural and Cultural Resources

This section provides information on federal statutes and assessments related to ecological and cultural resource compliance at the Hanford Site.

2.5.1 Ecological Compliance

JA Pottmeyer

DOE policies require that all Hanford Site projects with the potential to adversely affect biological resources conduct an ecological compliance review before the project starts. DOE uses the review to determine if the project will comply with the *Endangered Species Act of 1973* (16 USC 1531), the *Migratory Bird Treaty Act of 1918* (16 USC 703), and the *Bald and Golden Eagle Protection Act* (16 USC 668-668c), as well as Executive Order 11988, *Floodplain Management* (32 CFR 644.320), and Executive Order 11990, *Protection of Wetlands* (32 CFR 644.319). The review also addresses whether other significant resources such as Washington State-listed species of concern, wetlands, and native shrub-steppe habitats are adequately considered during the project planning process. When adverse effects are identified, mitigation actions are prescribed. Mitigation actions may include avoidance of significant resources, minimization of effects, and rectification or compensation if resources are affected.

There were 212 ecological compliance reviews performed during 2014, including 125 reviews to support general Hanford Site activities and 87 reviews for River Corridor environmental restoration activities. In comparison, 191 ecological compliance reviews were performed during 2013, including 97 reviews to support general Hanford Site activities, and 94 reviews for River Corridor environmental restoration activities.

2.5.1.1 *Endangered Species Act of 1973* (16 USC 1531)

Several protected species of plants and animals exist on the Hanford Site and along the Hanford Reach of the Columbia River. Upper Columbia River Steelhead trout (*Oncorhynchus mykiss*) and spring-run Chinook salmon (*Oncorhynchus tshawytscha*) are listed under the *Endangered Species Act of 1973* (16 USC 1531) as either threatened or endangered (50 CFR 17, Subpart B, Lists) and occur onsite. Critical habitat for these species has been designated within the Hanford Reach. The *Threatened and Endangered Species Management Plan: Salmon and Steelhead* (DOE/RL-2000-27) is in place for these species. The bull trout (*Salvelinus confluentus*) is also listed under 16 USC 1531 and may occasionally occur in the Hanford Reach; critical habitat for bull trout was designated in the Hanford Reach in 2010 (USFWS 2010a, *Final Bull Trout Critical Habitat Designation*). Two plant species, the Umtanum desert buckwheat (*Eriogonum codium*) and White Bluffs bladderpod (*Physaria douglasii* ssp. *tuplesheensis*) are now listed under 16 USC 1531. Other species on the Hanford Site are listed by the WDFW as endangered, threatened, or sensitive (refer to Section 11.2).

2.5.1.2 *Migratory Bird Treaty Act* (16 USC 703)

16 USC 703 prohibits taking or disturbing listed migratory birds or their feathers, eggs, or nests. Over 100 species of birds that regularly occur on the Hanford Site are protected by 16 USC 703. All Hanford Site projects with a potential to affect federal or state-listed species of concern complied with the requirements of this Act by using the ecological compliance review process as described in the *Hanford Site Biological Resource Management Plan*, DOE/RL-96-32 When applicable, ecological reviews produce recommendations to minimize adverse impacts to migratory birds, such as performing work outside of the nesting season and minimizing the loss of habitat. MSA maintains migratory bird permits issued by the USFWS (MB14155A-2 & MB81249A-1) that allow for certain *Migratory Bird Treaty Act*-related actions. A report of all activities conducted under this permit is provided to USFWS annually.

2.5.1.3 *Bald and Golden Eagle Protection Act* (16 USC 668)

16 USC 668 provides for the protection of the bald eagle and golden eagle by prohibiting, except under certain specified conditions, the taking, possession, or commerce of such birds. A revised *Bald Eagle Management Plan for the Hanford Site, South Central Washington* (DOE/RL-94-150) was published in 2013 to direct Hanford Site activities in accordance with current federal and state regulations and guidelines. This management plan outlines seasonal access restrictions around documented nesting and communal roosting sites at the Hanford Site between November 15 and March 15, and establishes guidelines for the protection of perches, roosts, and alternative nest sites. When applicable, ecological reviews have produced recommendations to minimize adverse impacts to bald eagles, including performing work outside of the winter season; staying out of established buffer areas; or entering buffer areas at mid-day, minimizing impacts by avoiding eagle roosting periods.

DOE continued to maintain a bald eagle take permit from the USFWS (MB30480-A-1) to cover potential disturbance to eagles using the night roosts in the vicinity of the 100 HX pump-and-treat system between 100-H and 100-D Areas.

2.5.1.4 Executive Orders 11988 and 11990

Executive Orders 11990 and 11988 require federal agencies to minimize the loss or degradation of wetlands on federal lands, and account for floodplain management when developing water- and land-use plans, respectively. DOE implements the requirements of these two executive orders through 10 CFR 1022, "Compliance with Floodplain and Wetlands Environmental Review Requirements." It is DOE policy to 1) restore and preserve natural and beneficial values served by floodplains; 2) minimize the destruction, loss, or degradation of wetlands; and 3) preserve and enhance the natural and beneficial value of wetlands. Compliance with these executive orders, as well as the wetland provisions of the *Clean Water Act of 1977* (Public Law 107-303), are implemented at the Hanford Site through the ecological compliance review process in conjunction with the appropriate site environmental compliance officers. The compliance process includes the identification, protection, and when necessary, mitigation of wetlands and floodplains on the Hanford Site.

2.5.2 Cultural Resource Compliance

TE Marceau

The *Department of Energy Management of Cultural Resources* (DOE P 141.1) requires compliance with cultural resource-related laws and regulations. The laws include the *Antiquities Act of 1906* (16 USC 433), *Historic Sites Act of 1935* (16 USC 461), *National Historic Preservation Act of 1966* (16 USC 470), NEPA, *Archaeological and Historic Preservation Act of 1974* (16 USC 469), *American Indian Religious Freedom Act of 1978* (42 USC 1996), *Archaeological Resources Protection Act of 1979* (16 USC 470), and *Native American Graves Protection and Repatriation Act*.

Regulations applicable to cultural resources include the *National Register of Historic Places* (36 CFR 60); *Determinations of Eligibility for Inclusion in the National Register of Historic Places* (36 CFR 63); *National Historic Landmarks Program* (36 CFR 65); *Curation of Federally Owned and Administered Archaeological Collections* (36 CFR 79); *Protection of Historic Properties* (36 CFR 800); *Protection of Archaeological Resources* (43 CFR 7); and *Native American Graves Protection and Repatriation and Regulations* (43 CFR 10).

Executive orders applicable to cultural resources include Executive Order 11593, *Protection and Enhancement of the Cultural Environment* (36 FR 8921); Executive Order 13007, *Indian Sacred Sites* (61 FR 26771); Executive Order 13175, *Consultation and Coordination with Indian Tribal Governments* (65 FR 67249); Executive Order 13287, *Preserve America* (68 FR 10635); and Presidential Proclamation 7319, *Establishment of the Hanford Reach National Monument* (65 FR 37253). Refer to Section 11.3 for details regarding Hanford Site Cultural Resource programs.

2.6 Sustainability Statutes

Information regarding additional statutes is presented in the following sections.

2.6.1 Chemical Management Systems

Hanford Site contractors have developed and documented formal systems to manage chemicals. Chemical management systems apply to the acquisition, use, storage, transportation, and final disposition of chemicals, including hazardous chemicals as defined in 29 CFR 1910, Subpart Z, "Occupational Safety and Health Standards." Chemical management systems are reviewed periodically and improvements are made as needed.

2.6.2 Pollution Prevention Program (42 USC 133)

SW Davis

The *Pollution Prevention Act of 1990* (42 USC 133) requires that pollution be prevented or reduced at the source whenever possible, and pollution that cannot be prevented be recycled or treated in an environmentally safe manner. The Hanford Site Pollution Prevention Program was created to address these requirements. RL is responsible for the Hanford Site Pollution Prevention Program and provides program implementation guidance to Hanford Site contractors. The Pollution Prevention Program reflects federal and DOE policies to reduce, reuse, and/or recycle wastes, as established by 42 USC 133.

Executive Order 13423, *Strengthening Federal Environmental, Energy, and Transportation Management* (72 FR 3919); Executive Order 13514, *Federal Leadership in Environmental, Energy, and Economic Performance* (74 FR 52117); and DOE O 436.1, *Departmental Sustainability*, establish pollution prevention and environmental stewardship requirements. In accordance with these requirements, pollution prevention and waste minimization activities are documented, tracked, and reported. Table 2.9 summarizes Hanford Site pollution prevention and waste minimization quantities recycled in FY 2014.

Table 2.9. Recycle Quantities

FY 2014 Recycled Material	Quantity (Metric Tons)
Non-Hazardous Material	
Cardboard	45.18
CI shredded paper	690.67
Furniture	137.82
Plastic bottles	23.62
Tires	43.61
Wood pallets	36.49
Software/media	6.70
CHPRC zero waste picnic	0.9072
WCH scrap metal	1,009.85
Brass metals	0.00
Ferrous metals	488.04

Non-ferrous metals		39.26
WRPS zero waste picnic		0.935
	Subtotal	**2,515.9**
Regulated Solid Wastes		
Aerosol cans		0.00
Antifreeze		7.23
Antifreeze – fleet		3.46
Ballasts		3.20
Batteries		4.83
Fluorescent bulbs		4.68
Lamps		1.41
Lead acid batteries		37.22
Lead acid batteries (fleet)		10.45
Polychlorinated biphenyl (PCB) waste oil <50 ppm		12.10
Toner cartridges		11.82
Used engine oils (fleet)		25.09
Used oil		22.57
	Subtotal	**144.06**
	Total	**2,659.9**

2.6.2.1 Pollution Prevention and Waste Minimization Accomplishments and Awards

The Hanford Site did not receive any DOE, federal agency, state agency, or industry-sponsored awards for pollution prevention and waste minimization accomplishments in CY 2014.

2.6.2.2 Accomplishments

The Hanford Site has recycled 80 percent of non-hazardous solid waste and certain hazardous waste, excluding construction and demolition (C&D) debris. The Hanford Site recycled 2,659.9 metric tons of regulated (hazardous and universal waste) and non-hazardous solid wastes. During 2014, the Hanford Site contractors continued to divert C&D from landfill disposal. The Hanford Site diverted approximately 93 percent (3,346.3 metric tons) of C&D debris from the inert landfill, disposing 253.3 metric tons of debris to the landfill. Hanford continues to implement additional power management initiatives. There were several ongoing power management and other environmentally preferable initiatives throughout 2014 including the following:

- Thin Client (Zero Clients) implementation (replacing desktop computers with energy efficient Thin Clients) continued, and 1,052 Zero Clients were deployed. Implementation of the Thin Client (Zero Clients) and this category of products are not covered by ENERGY STAR™ or EPEAT, but have superior energy efficiency.
- Increased use of "Convenience Copiers" allowed for removal of standalone and network printers.
- 100 percent of the equipment on the Hanford Site is set to automatic duplexing, including printers, copiers, and multifunction devices.
- Further tested the "Network in a Box" initiative, which allows Wi-Fi connection for workers away from their computers in the 100 Area.
- Over 328 computers, monitors, printer, televisions, and servers were recycled through a certified recycler.

2.6.3 Environmental Orders

CJ Clement

One DOE order and two Presidential Executive Orders addressing sustainability are complied with at the Hanford Site.

Executive Order 13423 (72 FR 3919) established a policy for federal agencies to conduct legally, environmentally, economically, and fiscally sound environmental, transportation, and energy-related activities in an integrated, efficient, continuously improving, and sustainable manner. The order established goals for the following areas: improved energy efficiency; reduced greenhouse gas emissions; use of renewable energy sources; renewable energy generation; reduced water consumption; acquisition of bio based, environmentally preferable, energy-efficient, water-efficient, and recycled products; reduced use of toxic and hazardous chemicals and materials; increased waste minimization, prevention, and recycling; use of sustainable building practices; reduced use of petroleum products for vehicles; and electronics stewardship. In addition, Executive Order 13423 requires that an Environmental Management System (EMS) be established as the mechanism for managing environmental goals, as well as other impacts to the environment from Hanford Site operations, and establishing environmental objectives and targets. The order also requires establishing environmental management training, environmental compliance review and auditing, and leadership awards to recognize outstanding environmental, energy, or transportation management performance.

Executive Order 13514 (74 FR 52117), states that federal agencies shall increase energy efficiency; measure, report, and reduce their greenhouse gas emissions from direct and indirect activities; conserve and protect water resources through efficiency, reuse, and storm water management; eliminate waste, recycle, and prevent pollution; leverage agency acquisitions to foster markets for sustainable technologies and environmentally preferable materials, products, and services; design, construct, maintain, and operate high performance sustainable buildings in sustainable locations; strengthen the vitality and livability of the communities in which federal facilities are located; and inform federal employees about and involve them in the achievement of these goals. In addition, Executive Order 13514 requires that targets for baseline Scope 1 (generated from site operations and activities) and Scope 2 (associated with the purchase of energy [electricity, heat, or steam] used by site contractors) greenhouse gas emissions, along with 2020 reduction targets, be established.

Similar numbers for Scope 3 (emissions associated with ancillary activities related to Hanford Site operations, including business travel, employee commuting, vendor activities, delivery services) emissions must be established. Executive Order 13514 also sets goals for improved water use efficiency and management, promotion of pollution prevention and waste elimination, advancement of regional and local integrated planning, implementation of sustainable building lifecycle management practices, advancement of sustainable acquisition, and promotion of electronics stewardship. Executive Order 13514 requires continued implementation of a formal sustainable EMS.

DOE O 436.1 requires developing a Site Sustainability Plan that is integrated with the Hanford Site operational plans. In addition, the order requires developing an EMS that is certified to or conforms with the ISO 14001:2004 standard, submittal of sustainability goal data and reports, as well as *Emergency Planning and Community Right-to-Know Act of 1986* reporting. Implementation of DOE orders and executive orders by Hanford Site contractors is addressed in Section 3.0.

MSA, as the Hanford Site services and infrastructure contractor, updated the sustainability plan for the Hanford Site in 2014 with input from DOE and Hanford Site contractors. The plan describes the energy management program and identifies planned energy efficiency, water conservation, transportation fleet management, and sustainable buildings activities, as required by DOE O 436.1. Environmental objectives developed in 2010 were maintained in 2014, as were plans for recycling, environmentally preferred procurement management, and electronic asset stewardship (see Section 3.0).

2.7 Occurrence Reporting and Processing of Operations Information

TH Pysto

Releases of radioactive and regulated materials to the environment are reported to DOE and other federal and state agencies as required by law. The specific agencies notified depend on the type, amount, and location of each release event. This section addresses releases or potential releases to the environment that may not be documented by other reporting mechanisms during the reporting period. All Hanford Site occurrences are reported to the Hanford Emergency Operations Center Shift Office and subsequently recorded in the Occurrence Reporting and Processing System. This system is a DOE electronic database that tracks occurrence reports across the DOE complex (DOE M 231.1-2, *Occurrence Reporting and Processing of Operations Information*). The following sections summarize occurrences that may have impacted the Hanford Site environment in 2014. The occurrences are arranged according to significance category, which are assigned based on the nature and severity of the occurrence. The categories include Operational Emergency; Recurring; or Category 1 (Significant Impact), Category 2 (Moderate Impact), Category 3 (Minor Impact), and Category 4 (Some Impact).

2.7.1 Operational Emergency; Recurring; or Category 1

There were no Hanford Site environmental occurrences ranked as Operational Emergency, Recurring, or Category 1, Significant Impacts.

2.7.2 Operational Emergency; Recurring; or Category 2

There were no Hanford Site environmental occurrences ranked as Operational Emergency, Recurring, or Category 2, Moderate Impacts.

2.7.3 Operational Emergency; Recurring; or Category 3

There were no Hanford Site environmental occurrences ranked as Operational Emergency, Recurring, or Category 3, Minor Impacts.

2.7.4 Operational Emergency; Recurring; or Category 4

Category 4 occurrences are defined as having some impact on safe facility operations, worker or public safety and health, regulatory compliance, or public and business interests. Summarized below is one Category 4 occurrence with potential environmental implications that occurred on the Hanford Site during the reporting period, and the discoveries of legacy contamination.

Discovery of Legacy Contamination. Each year on the Hanford Site, legacy contamination is spread because of environmental conditions. Some contamination is discovered during routine survey work. Biological vectors also spread contamination; tumbleweeds, rodents, and birds are all common biological vectors. Tumbleweeds have a deep taproot that can sequester contamination from below the soil surface

into the plant body on the surface. Rodents eat vegetation located in contaminated areas and then deposit contaminated feces outside of the contaminated area. Birds build nests and occasionally use materials from contaminated areas, resulting in the transfer of contamination to uncontaminated areas. Of these three biological vectors, contaminated tumbleweeds occur most frequently and have the potential to transfer contamination the farthest distance from their original locations. High winds may contribute to the spread of legacy contamination beyond posted areas. Reports of legacy contamination discovered throughout the year are consolidated into quarterly reports. In 2014, there were 45 documented occurrences of legacy contamination.

2.8 Standards and Permits

JK Perry, RA Kaldor, CJ Clement, and JW Wilde

Hanford Site operations must conform to a variety of government standards and permits. The primary environmental quality standards and permits applicable to Hanford Site operations are listed in Table 2.10.

Table 2.10. Environmental Permits

Dangerous Waste Permit (RCRA)
Hanford Facility RCRA Permit (WA7890008967) was issued on September 27, 1994, and has undergone several revisions. The permit expired on September 27, 2004; however, Permit WA7890008967, Rev. 8C, remains in effect until a new permit is issued. Ecology issued a draft permit for public review and comment, from May 1, 2012 through October 22, 2012 (WA7890008967, Rev. 9). Ecology received more than 4,000 comments on the draft permit, including approximately 1,800 comments from the public and 3,000 comments from the DOE. Because information and arguments brought up during the comment period raised substantial new questions, Ecology plans to revise the draft permit and reopen the comment period (see Section 2.1.2.1).
Air Permits
Hanford Site Air Operating Permit 00-05-006, Renewal 2, covers operations on the Hanford Site having a potential to emit airborne emissions. This permit was effective on April 1, 2013, and expires March 31, 2018. The permit is intended to provide a compilation of applicable *Clean Air Act* requirements for both radioactive and non-radioactive emissions at the Hanford Site. It will be implemented through federal and state programs (see Section 2.3.2).
Radioactive Air Emissions License for the Department of Energy Richland Operations Office Hanford Site, License Number FF-01 (WDOH 2012), is issued to RL by the Washington State Department of Health. This permit was effective February 23, 2012, and expires December 31, 2017. The FF-01 license is a compilation of all applicable radioactive air emission requirements.
Drinking Water Permits
ID# 00177 J is a permit to operate the 100-K Area drinking water system. WDOH issues the permit.
ID# 00100 4 is a permit to operate the 200-West Area drinking water system. WDOH issues the permit.

Table 2.10. Environmental Permits

ID# 41840 8 is a permit to operate the 300 Area drinking water system. WDOH issues the permit.
ID# 41947 0 is a permit to operate the 400 Area drinking water system. WDOH issues the permit.
Wastewater Permits
Permit CR-IU010, 300 Area Industrial Wastewater Discharge Permit, is issued to RL by the city of Richland. Permit CR-IU010 governs the discharges from the 300 Area facilities into the city of Richland sewer collection system.
HAN002 through HAN074 permit onsite sewage systems to operate on the Hanford Site. WDOH issues these permits.
Permit ST-4500, *State Waste Discharge Permit,* allows treated wastewater from the Effluent Treatment Facility to be discharged to the State-Approved Land Disposal Site. This permit expired August 1, 2005; old permit will remain in effect until the new permit is issued. On December 15, 2014, Ecology reissued the permit as ST0004500. It became effective on January 1, 2015.
Permit ST0004502, *State Waste Discharge Permit,* allows treated effluent from the 200-East and 200-West Areas to be discharged to the 200 Area Treated Effluent Disposal Facility. This permit is effective until June 30, 2017.
Permit ST0004511 is a Categorical State Waste Discharge Permit that authorizes the discharge of wastewater from maintenance, construction, and hydro testing activities and allows for cooling water, condensate, and industrial storm water discharges at the Hanford Site. This permit was issued January 1, 2014, and will expire February 16, 2019.
Permit ST0045514, *State Waste Discharge Permit,* is for the 200-West Area Evaporative Sewage Lagoon a domestic wastewater treatment facility located northeast of the 200-West Area. The facility consists of double-lined evaporative lagoons and is designed to have no liquid discharge to the ground. The system will provide domestic wastewater treatment for the 200-West and 600 Areas, as well as treatment for domestic wastewater hauled from the 200-East Area and other locations within the site.
Permit WAG-50-5180, Washington State Sand and Gravel General Permit for the Concrete Batch Plant in the 200-East Area. The Concrete Batch Plant supports construction of WTP; its primary function is making concrete. The permit provides coverage for discharges of process water and storm water associated with Ready Mix Concrete operations. Bechtel National is the owner of the permit. This permit was effective October 1, 2010, and expires on October 1, 2015.
Permit WAG-50-5181, Washington State Sand and Gravel General Permit for Pit 30 Quarry in the 200-East Area. Ecology issued the permit to BNI as the owner and operator. This permit was effective October 1, 2010, and expires on October 1, 2015. The Pit 30 Quarry supports the construction of the WTP, and the primary function is making construction sand and gravel.

Table 2.10. Environmental Permits

Wildlife Permits
Permit MB14155A-2, Federal Fish and Wildlife Permit, issued by the U.S. Fish and Wildlife Service to MSA, authorizes the collection of migratory birds from transformers and conductors when imminent threat of fire and power outages. This permit expired March 31, 2014.
Permit MB30480A-1, Federal Fish and Wildlife Permit, issued by the U.S. Fish and Wildlife Service to CHPRC, authorizes incidental take of bald eagles associated with operations at 100-K Area and the 100-HX Pump and Treat System. This permit expired March 31, 2014.
Permit MB81249A-1, Federal Fish and Wildlife Permit, issued by the U.S. Fish and Wildlife Service to MSA; authorizes the collection of migratory birds for danger to human safety and health and the determination and control of contamination. This permit expired March 31, 2015.
Review Reference Number 13260-2009-I-0121, Federal Fish and Wildlife Section 7 Review, issued to Environmental Assessment Services in July 2009, for the potential of incidental take of salmonids during fishing activities in the Columbia River. This review has no expiration listed.
Review Reference Number 13260-2011-I-0080, Federal Fish and Wildlife Section 7 Review, issued to DOE in July 2011 for the potential of incidental take of bull trout during fishing activities in the Columbia River. This review has no expiration listed.
Permit 13-304a, Scientific Collection Permit issued by WDFW to Environmental Assessment Services through September 2014, authorizes the collection of food fish, shellfish, game fish, and wildlife for research purposes. This permit is renewed annually.
Permit 13-075, Scientific Collection Permit issued by WDFW to MSA for May 2013 through May 2014; authorizes the collection of food fish, shellfish, game fish, and wildlife for research purposes. This permit is renewed annually.
Permit 14-151a, Scientific Collection Permit issued by WDFW to MSA for May 2014 through May 2015; authorizes the collection of food fish, shellfish, game fish, and wildlife for research purposes. This permit is renewed annually.

Agency Contact Information		
State of Washington Department of Ecology P.O. Box 47600 Olympia, WA 98504-7600	U.S. Environmental Protection Agency Region 10 1200 Sixth Avenue Seattle, WA 98101	U.S. Department of Energy Richland Operations Office 825 Jadwin Avenue Richland, WA 99352
U.S. Fish and Wildlife Service Migratory Bird Permit Office 911 N.E. 11th Avenue Portland, OR 97232-4181	Washington State Department of Health P.O. Box 47890 Olympia, WA 98504-7890	

2.9 Environmental Noncompliance

JW Cammann

During CY 2014, there were 12 regulatory agency enforcement actions filed against the DOE and its contractors for alleged violations of regulatory requirements (2-Washington State Attorney General, 2-WDOH, 5-Ecology, and 3-EPA Region 10). Nine of the 12 enforcement actions resulted from regulatory agency inspections of DOE facilities on the Hanford Site (see Section 2.1.2.2). The enforcement actions resulted in 9 concerns and 26 compliance actions that contributed to $190,594 in fines and penalties. Table 2.11 summarizes the Notices of Violation and Notices of Alleged Violation. Figure 2.1 shows noncompliance concerns, violations, and special environmental projects (SEP).

Table 2.11. Notices of Violation and Notices of Alleged Violation Summary, 2009 - 2014

	Notices of Violation/Notices of Alleged Violation					
Program Area	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**
CAA	0	3	0	0	4	2
CWA	0	1	0	0	0	0
RCRA	3	3	1	2	4	7
CERCLA	0	0	0	3	1	0
Others	0	4	1	2	1	1
Total Notices of Violation	**3**	**11**	**2**	**7**	**10**	**10**

The following summarizes the alleged violations for CY 2014; though, not all alleged violations resulted in a monetary fine or penalty.

January 1, 2014, the WDOH issued a letter to the ORP and its contractor WRPS closing out the inspection of tank farm emission units 296-P-43, P-44, and P-45. However, WDOH requested an ALARACT demonstration to address: 1) actions taken to place emission units in layup, 2) steps to restart emission units, and 3) description of surveillance and maintenance actions during layup. Visual inspection and review of records revealed that conditions of the Hanford Radioactive Air Emission License (FF-01) were not reflective of the current non-operational status of these tank farm emission units. The ALARACT demonstration was completed and transmitted to WDOH on September 12, 2014. No fines or penalties have been assessed to date.

January 24, 2014, Ecology, RL, and CHPRC signed the *Agreed Order and Stipulated Penalty Docket No. DE 10156, Hanford Solid Waste Operations Complex* (14-NWP-023) to improve waste management practices at the CWC, WRAP, and T Plant to comply with alleged violations of WAC 173-303. The Agreed Order requires immediate notification to Ecology for spills/other incidents; prompt response to incidents; better reporting of causes and corrective actions; better sampling of waste; better management of waste containers; and frequent inspections. DOE agreed to a stipulated penalty of $261,000; CHPRC paid $15,000 immediately and Ecology suspended the $246,000 balance pending completion of corrective actions according to an agreed schedule. All corrective actions were completed and none of the suspended portion of the penalty was requested or paid during CY 2014.

March 21, 2014, Ecology issued an Administrative Order to ORP and WRPS pertaining to a double-shell tank 241-AY-102 leak from the primary tank into the secondary tank annulus area. Ecology alleged four

violations of the dangerous waste regulations: 1) failure to stop the flow of hazardous waste into secondary containment in accordance with 40 CFR 265.196(a), "Response to leaks or spills and disposition of leaking or unfit-fir-use tank systems"; 2) failure to inspect the tank to determine the cause of the release in accordance with 40 CFR 265.196(a); 3) failure to remove, at the earliest practicable time, as much of the waste as is necessary to prevent further release of hazardous waste to the environment and allow inspection and repair of the tank to be performed in accordance with 40 CFR 265.196(b); and 4) failure to remove all released materials from the secondary containment system within 24 hours or in as timely a manner as is possible to prevent harm to human health and the environment in accordance with 40 CFR 265.196(b)(2). Settlement agreement PCHB-14-041c was signed on September 29, 2014, stipulating corrective measures and associated schedule for completion. Several actions were completed during CY 2014, including ORP submittal to Ecology of a revised pumping plan, technical safety requirement and safety basis evaluations, monitoring and contingency plans, integrity assessment for secondary containment system, and work plan for removing remaining tank waste. No fines or penalties have been assessed to date.

March 31, 2014, the attorney general of Washington issued a letter to the U.S. Department of Justice proposing to amend the consent decree (*Washington v. Chu, U.S.D.C. Eastern No. 08-5085-FVS, State of Washington's Proposal to Amend Consent Decree* [Ecology 2014a]). On April 18, 2014, the attorney general of Washington issued a letter to DOE in *Response to Department of Energy's March 31, 2014, Proposal to Amend Consent Decree* (Ecology 2014b). To address these concerns, Washington provided to the defendants a formal proposal to amend the Consent Decree. While Washington's proposal reflected agreement between DOE and Washington in several key areas, it did not adequately account for the realities of technical issues resolution, project management requirements, and budget constraints; therefore, DOE did not accept Washington's proposal to amend the Consent Decree. On April 23, 2014, the attorney general of Washington issued a letter *Washington V Chu USDC Eastern No 08-5085-FVS Washington's Notice Invoking Dispute Resolution Based on Department of Energy's Refusal to Accept Washington's March 31, 2014, Proposal to Amend Consent Decree* (Ecology 2014c). After extending the deadline for resolving the dispute twice, on September 5, 2014, the Washington State attorney general and governor declined any further extensions and filed a motion in U.S. District Court to amend the Consent Decree. On December 5, 2014, DOE filed a response (No. 08-5085-RMP) in U.S. District Court to Washington's petition to modify the Consent Decree stating that the petition should be denied because it would establish requirements that are unachievable, beyond the scope of the parties' original agreement, and in conflict with DOE's exclusive regulatory authority under the AEC. No fines or penalties have been assessed to date. The Consent Decree governs milestones through the startup of WTP and the retrieval of 19 single-shell tanks. Washington alleged that DOE's inability to meet key Consent Decree requirements, together with its failure to present Washington with a comprehensive recovery plan, puts the tank waste retrieval and treatment missions at risk.

April 10, 2014, WCH paid a $44,000 fine to EPA for alleged violations of the federal requirements of the Clean Air Act, NESHAPs for Asbestos (40 CFR Part 61, Subpart M). The alleged violations and associated penalty were the result of an inspection conducted by EPA during FY 2013. On April 2, 2014, the EPA, RL, and WCH signed a Consent Agreement and Final Order (Docket No. CAA-10-2014-0073) alleging two violations of applicable regulations. Count 1 alleged failure to submit adequate notification of intent to

demolish prior to demolition. Count 2 alleged failure to remove regulated asbestos-containing materials prior to demolition activities.

April 24, 2014, CHPRC paid a $131,594 fine to EPA for alleged violations of the federal requirements of the Clean Air Act, NESHAPS for Asbestos (40 CFR Part 61, Subpart M). The alleged violations and associated penalty were the result of an inspection conducted by EPA during FY 2013, where EPA found 1) failure to remove more than 100,000 square feet (9,290 square meters) of asbestos prior to demolishing buildings and structures as required by federal law, 2) failure to provide complete and accurate notifications to EPA or local air agency (Benton Clean Air Agency) as demolition projects were under way, and 3) inspection of waste storage trailer showed some wastes not properly contained in leak-tight containers.

June 5, 2014, WDOH issued a Notice of Concern (AIR 14-603) to ORP and WRPS regarding standards and maintenance requirements for ventilation systems in Hanford tank farm facilities. WDOH expressed concerns regarding an alleged decline in the maintenance and condition of the ventilation control and monitoring systems in the tank farms. Evidence from WDOH inspections and ORP and WRPS environmental notifications to WDOH indicated these aging systems are deteriorating and are in need of repair. As a result, WDOH identified the following issues: 1) aging HEPA filter operation, 2) maintenance of moisture and condensate control equipment, 3) sample probe obstruction, and 4) non-operational emission units. On October 3, 2014, ORP and WRPS issued a letter (14-ECD-0047) to WDOH transmitting a written plan for addressing WDOH concerns.

July 10, 2014, Ecology issued a Notice of Violation (14-NWP-135) to ORP and BNI alleging violations of WAC 173-303-060(2) regarding EPA/state identification numbers for dangerous waste sites based on definitions found at WAC 173-303-040. On May 19, 2014, Ecology conducted a waste generator inspection at the WTP Material Handling Facility. Ecology alleged the Material Handling Facility is not located on the Hanford Site nor is it contiguously bound to the Hanford Site. Additionally, Ecology alleged the Material Handling Facility is a new BNI location for supporting WTP construction. Ecology alleged the Hanford Site EPA ID# WA7890008967 could not be used for this new location per the WAC regulations. On March 4, 2015, a letter (15-ESQ-0042) was sent to Ecology requesting a new Dangerous Waste Site Identification Number for the Material Handling Facility. The Material Handling Facility currently operates as a small quantity generator of dangerous waste from the limited maintenance of WTP fleet vehicles and general warehousing activities. Although obtaining a dangerous Waste Site Identification Number is not a WAC requirement for small quantity generators, activities at the Material Handling Facility may exceed small quantity generator limits in the future; therefore, ORP is requesting an identification number and has identified the Material Handling Facility as a large quantity generator. No fines or penalties have been assessed to date.

July 22, 2014, Ecology issued a Notice of Violation (14-NWP-152) to ORP and BNI for alleged violations based on observations of dangerous waste management and review of records at the WTP. Ecology alleged the following violations of WAC 173-303: 1) improper completion of shipping manifest #006356185, 2) dangerous waste training plan deficiencies, 3) dangerous waste training deficiencies, 4) obscured dangerous waste labels on containers, and 5) incomplete container inspection logs. There were also four areas of concern identified by Ecology including 1) documentation for managing mixed waste, 2) documentation for the process to move newly generated dangerous waste to centralized

satellite accumulation areas, 3) contingency plan inadequacies, and 4) training plan and training record deficiencies. All alleged violations have been addressed. No fines or penalties have been assessed to date.

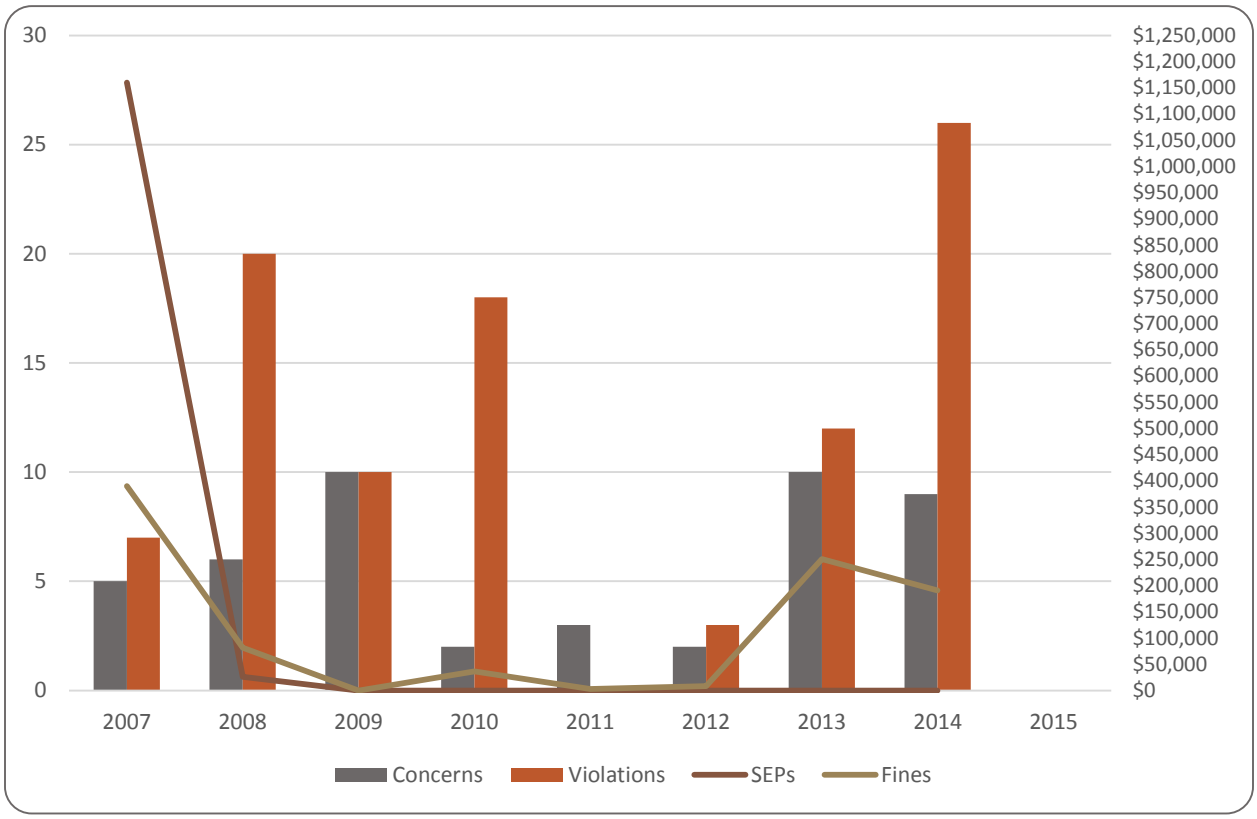
August 25, 2014, Ecology issued a Notice of Violation (14-NWP-183) to RL and WCH identifying two alleged violations based on observations of dangerous waste management and records review of satellite accumulation areas at the Sample Storage and Shipping Facility on July 2, 2014. Ecology alleged the following: 1) the Sample Storage and Shipping Facility is located off the Hanford Site and cannot use the Hanford Site EPA ID# WA7890008967, and 2) the facility address on the shipping manifest was incorrect. All alleged violations have been addressed. No fines or penalties have been assessed to date.

October 14, 2014, EPA sent a letter to RL, for *Disapproval of Proposed New Date for Milestone M-016-175, Begin Sludge Removal from 105-KW Fuel Storage Basin, and Notice of Failure to Comply with Milestone M-0 16-175 and the Assessment of Stipulated Penalties* (15-AMRP-0031) On June 12, 2014, RL notified EPA (*Notification of TPA Milestone M-016-175, Begin Sludge Removal from 105-KW Fuel Storage Basin, September 30, 2014, Will be Missed* (14-AMRP-0214) that TPA Milestone M-016-175 would be missed for 'good cause' due to congressional funding levels for RL being below the president's budget requests for prior years, due to the impacts of the FY 2013 Budget Control Act (sequestration), and the FY 2014 Continuing Resolution. On September 30, 2014, RL submitted a request for the extension of TPA Milestone M-016-175 (14-AMRP-0311, *Begin Sludge Removal from 105-KW Fuel Storage Basin*, due date September 30, 2014), proposing a new date for TPA Milestone M-016-175 to TBD until a full-year budget resolution or appropriation was passed and FY 2016-2018 budget levels were established. On October 14, 2014, the EPA disapproved the milestone extension request. On October 21, 2014, RL transmitted a letter to EPA initiating dispute resolution based on EPA's disapproval of the milestone extension request, (15-AMRP-0014, *Initiation of Dispute Resolution Regarding Disapproval of TPA Change Control Form M-16-14-02*). On November 7, 2014, EPA agreed to extend the dispute for change request M-16-14-02 at the project manager level to December 3, 2014. On December 3, 2014, RL transmitted to EPA the *Statement of Dispute Regarding Disapproval of Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement) Change Control Form M-16-14-02* (15-AMRP-0031). No fines or penalties have been assessed to date.

November 19, 2014, the Washington State attorney general issued a Notice of Intent to the Secretary of Energy, WRPS president, and EPA administrator (Ecology 2014d). The notice said the attorney general "hereby provides ORP and WRPS with a *Notice of Endangerment and Intent to File Suit* pursuant to the RCRA §7002(a)(1)(B), 42 U.S.C. § 6972(a)(1)(B)." The attorney general intends to file suit, on behalf of the people of the state of Washington, against ORP and WRPS due to releases of vapors from hazardous waste being stored and treated in underground tanks and tank systems at the Hanford Site tank farms. The attorney general alleged that escaping vapors present an imminent and substantial endangerment to health and the environment. On February 10, 2015, ORP and WRPS issued the *Implementation Plan for Hanford Tank Vapor Assessment Report Recommendations*. In April 2014, WRPS chartered Savannah River National Laboratory (Tank Vapor Assessment Team) to establish and oversee a panel of external, independent experts to examine chemical vapors management and related worker-protection measures at the Hanford tank farms. The team released the *Hanford Tank Vapor Assessment Report* (SRNL-RP-2014-00791), on October 30, 2014. To address the Tank Vapor Assessment Team report

recommendations, WRPS developed an implementation plan with multiple proposed response actions, a corresponding schedule, and estimated costs. No fines or penalties have been assessed to date.

Figure 2.1. Environmental Noncompliance Concerns and Associated Fines



SEP = Supplemental environmental project (performed to benefit the local community in lieu of a penalty payment).

2.9.1 Waste Water Permit Deviations

CJ Clement

During CY 2014, seven wastewater permit deviations were reported.

- On February 11, 2014, a permit deviation for HAN050 was reported to WDOH regarding a sewage release to the ground at lift from station 2607-E12.
- On May 14, 2014, MSA, Water and Sewer Utilities management, and Ecology self-identified compliance issues with the Large Onsite Sewer Systems/Onsite Sewer Systems (LOSS/OSS) and the 200-West Area Lagoon Treatment System (ST0045514). Issues were identified concerning not following operation and maintenance manuals completely, not having all procedures in place to operate the systems, and incomplete data regarding permit system locations.
- On May 29, 2014, a permit deviation (ST0004502) was reported to Ecology for a lab-reported detection level above the permit-specified quantitation level.
- On July 9, 2014, a permit deviation (ST0004502) was reported to Ecology for a lab exceedance of the hold time for a nitrate analysis.

- On August 5, 2014, a permit deviation (ST0004502) was reported to Ecology for minor leaks in air vacuum relief valves.
- On October 23, 2014, a permit deviation for HAN071 was reported to WDOH regarding a sewage release to the ground at lift station 2607-E1A.
- On November 14, 2014, a permit deviation for HAN071 was reported to WDOH regarding a sewage release to the ground at lift station 2607-E6.