CHAPTER 2

Operations at the Idaho National Laboratory (INL) Site are subject to numerous federal and state environmental statutes, executive orders, and U.S. Department of Energy (DOE) directives. As a requirement of many of these regulations, the status of compliance with the regulations and releases of non-permitted hazardous materials to the environment must be documented. Environmental permits have been issued to the INL Site, primarily by the State of Idaho (Table 2-5). There were no reportable environmental releases at the INL Site during calendar year 2022. In 2022, the U.S. Department of Energy Idaho Operations Office (DOE-ID) operated in compliance with most of the requirements defined in governing documents. Instances of noncompliance were reported to regulatory agencies and resolved. Environmental compliance status for 2022 is provided in Table 2-1.

2. ENVIRONMENTAL COMPLIANCE SUMMARY

This chapter presents the compliance status for operations at the INL Site and DOE-ID programs that are subject to federal and state environmental protection requirements, such as statutes, acts, agreements, executive orders, and DOE directives.

2.1 Enforcement and Compliance History Online Database

The U.S. Environmental Protection Agency (EPA) developed the Enforcement and Compliance History Online website (https://echo.epa.gov/) that provides integrated compliance and enforcement that can be used to search and view information on permit data, inspection dates and findings, violations, enforcement actions, and penalties assessed.

2.2 Compliance with Requirements

INL Site activities must adhere to environmental standards established by federal, state and local regulations, DOE directives, permits, and compliance and settlement agreements where applicable. The EPA and Idaho Department of Environmental Quality (DEQ) are the principal regulating agencies that issue permits, review compliance reports, and participate in joint monitoring programs, inspect facilities and operations, and enforce compliance with applicable requirements as identified in Table 2-1.

Table 2-1. Federal, state, and local laws and regulations established for protection of human health and the environment.

REGULATORY PROGRAM DESCRIPTION	2022 COMPLIANCE STATUS	PERMIT REQUIRED Y/N	REPORT SECTIONS
AIR QUALITY AND PROTECTION			
40 CFR 61, "National Emission Standards for Hazardous Air Pollutants," 42 USC 7401 et seq. The CAA is the basis for national air pollution control. Emissions of radioactive hazardous air pollutants are regulated by EPA, via the National Emission Standards for Hazardous Air Pollutant (40 CFR 61, Subpart H).	EPA has not delegated the 40 CFR Part 61, Subpart H regulations and is the primary agency to which DOE-ID reports compliance. Idaho DEQ incorporates the requirements of the subpart into the sitewide PTC-FEC and is therefore included in all reporting and non-compliance occurrences. The INL Site is in compliance, as reported in compliance report, *National Emission Standards for Hazardous Air Pollutants – Calendar Year 2022*.	N	2.2.1 4.2 4.3 8.2.1
40 CFR 84, "Phasedown of Hydrofluorocarbons" In October 2021, EPA issued regulations to decrease the production of hydrofluorocarbons (HFCs) over the next fifteen years, thereby decreasing the supply. HFCs were developed and manufactured to replace chlorofluorocarbons, which damage the stratospheric ozone layer. HFC uses include refrigerants, solvents, fire suppressants, and aerosols. Through these regulations, EPA seeks to reduce HFC consumption and production to 15% of a 2011–2013 baseline by 2036. These regulations do not prevent entities from using equipment containing HFCs that have already been purchased and are currently in use. However, as the phasedown progresses, these HFCs will become less available and more expensive. The DOE Office of Environment, Health, Safety, and Security published OE-3: 2021-06, "Hydrofluorocarbon Phasedown," to provide information and suggestions to DOE programs and sites about these new regulations.	A summary of the INL and Idaho Cleanup Project (ICP) contractors' HFC uses, replacements, procurement, and proactive measures taken as a result of the HFC phasedown can be found in Section 4.2.1.	N	4.2.1
Clean Air Act (1970), 42 USC 7401 et seq. The Clean Air Act (CAA) provides the EPA with broad authority to implement and enforce regulations to reduce air pollutant emissions with an emphasis on cost-effective methods. In addition to EPA, states, tribes, and local governments play a key role in the implementation of the CAA. *Other environmental statutes and regulations apply, in whole or in part:* • 40 CFR 50, "National Primary and Secondary Ambient Air Quality Standards."	The Idaho DEQ has been delegated authority to implement the CAA through the development of an EPA-approved state implementation plan and is codified in Idaho Administrative Code, Rules for the Control of Air Pollution in Idaho (IDAPA 58.01.01). DOE-ID holds a synthetic minor, sitewide, air quality permit from Idaho DEQ. This permit to construct (PTC) contains a facility emission cap (FEC) component which enforces a limit on criteria air pollutants (CAP) and hazardous air pollutants emissions to less than major source thresholds. Without the synthetic limits on sitewide CAP emissions, the INL Site would be considered a major source for CAP emissions and require Tier I/Title V permit. This permit covers all the non-exempt air emission sources located on the INL Site, but does not cover air emitting sources located at the Research and Education Campus in Idaho Falls, Idaho. All air emission sources located at the Research and Education Campus have been	Y	4.3 8.2

Table 2-1. continued.

REGULATORY PROGRAM DESCRIPTION	2022 COMPLIANCE STATUS	PERMIT REQUIRED Y/N	REPORT SECTIONS
	determined minor and have been exempted from the permitting requirements in IDAPA 58.01.01. As reported in the annual compliance report required by the PTC-FEC, the INL Site emitted CAP and HAP emissions significantly below the permitted limits in calendar year 2022. No air quality inspections were performed by the Idaho DEQ during calendar year 2022.		
CULTURAL AND ENVIRONMENTAL RESOURCES PROGRAMS			
Endangered Species Act (1973), 16 USC 1531-1544 The Endangered Species Act requires that all federal departments and agencies seek to conserve endangered and threatened species and use their authorities to further the purposes of this act. *Other environmental statutes and regulations apply, in whole or in part:* • 50 CFR 17, "Endangered and Threatened Wildlife and Plants" • 50 CFR 226, "Designated Critical Habitat" • 50 CFR 402, "Interagency Cooperation – Endangered Species Act of 1973, as Amended" • 50 CFR 424, "Listing Endangered and Threatened Species and Designating Critical Habitat" • 50 CFR 450-453, "Endangered Species Exemption Process."	There are currently no resident INL Site species listed as threatened or endangered under the Endangered Species Act and there is no designated critical habitat on the INL Site. In 2014, DOE-ID entered into a voluntary candidate conservation agreement with the U.S. Fish and Wildlife Service to conserve and protect Greater sage-grouse and sagebrush habitat on the INL Site prior to the Service determining the species was not warranted for listing. In 2022, DOE-ID published an annual report of sage-grouse and sagebrush monitoring activities and held an annual meeting with the U.S. Fish and Wildlife Service and other stakeholders to discuss the report and progress towards achieving conservation objectives. The INL Natural Resources Group conducts ecological research, field surveys, and NEPA evaluations regarding resources on the INL Site. These program activities complied with all requirements. Details of related activities can be found in Chapter 9.	Y	9.1.1.1
Executive Order 11988, "Floodplain Management" Executive Order (EO) 11988 requires federal agencies to consider, evaluate, and avoid to the extent possible, adverse impacts associated with the occupancy and modification of floodplains, to reduce the risk of flood loss, to minimize the impacts of flood on human safety, health, and welfare, and to restore and preserve the natural and beneficial values of floodplains. *Other environmental statutes and regulations apply, in whole or in part:* • 10 CFR 1022, "Compliance with Floodplain and Wetland Environmental Review Requirements."	It is the intent of EO 11988 that federal agencies implement floodplain requirements through existing procedures, such as those established to implement NEPA. 10 CFR 1022 contains DOE policy and floodplain environmental review and assessment requirements through the applicable NEPA procedures. In those instances where impacts of actions in floodplains are not significant enough to require the preparation of an Environmental Impact Statement under NEPA, alternative floodplain evaluation requirements are established through the INL Site Environmental Checklist process. For the Big Lost River, DOE-ID has accepted the *Big Lost River Flood Hazard Study* (Bureau of Reclamation 2005). This flood hazard report is based on geomorphological models and has undergone peer review. All activities on the INL Site requiring characterization of flows and hazards are expected to use this report.	N	N/A

Table 2-1. continued.

REGULATORY PROGRAM DESCRIPTION	2022 COMPLIANCE STATUS	PERMIT REQUIRED Y/N	REPORT SECTIONS
	For facilities at Test Area North, the 100-year floodplain has been delineated in a U.S. Geological Survey report (USGS 1997).		
Executive Order 11990, "Protection of Wetlands" EO 11990 requires federal agencies to identify potential impacts on wetlands resulting from proposed activities and to minimize the destruction, loss, or degradation of wetlands and preserve and enhance the natural and beneficial values of wetlands.	The only areas of the INL Site currently identified as potentially jurisdictional wetland are the Big Lost River corridor and Big Lost River Sinks. The U.S. Fish and Wildlife Service National Wetlands Inventory map is used to identify potential jurisdictional wetlands and non-regulated sites with ecological, environmental, and future development significance. In 2022, a review of these areas was performed by the U.S. Army Corps of Engineers: no new actions took place within potential wetland areas on the INL Site that would require an update to the Jurisdictional Determination.	N	N/A
Executive Order 13751, "Safeguarding the Nation from the Impacts of Invasive Species" This EO calls on federal agencies to prevent the introduction, establishment, and spread of invasive species, as well as to eradicate and control populations of invasive species that are established. *Other environmental statutes and regulations apply, in whole or in part:* • Federal Noxious Weed Act (1974), 7 USC 2801 • IDAPA 02.06.09, "Rules Governing Invasive Species and Noxious Weeds" • Idaho Statute Title 22, Chapter 19, "The Idaho Invasive Species Act of 2008" • Idaho Statute Title 22, Chapter 24, "Noxious Weeds."	INL implements a sitewide plan for managing invasive species. This sitewide plan addresses each requirement of federal agencies as outlined in EO 13112, as amended by EO 13751. Additionally, federal agency requirements outlined in The Federal Noxious Weed Act of 1974 and State of Idaho requirements related to invasive species and noxious weeds are met with compliance of EO 13112, as amended by EO 13751. For more detail on how this plan is carried out and how requirements are met, see Section 9.4.3.	N	9.4.3
Executive Order 14008, "Tackling the Climate Crisis at Home and Abroad" The purpose of EO 14008, "Tackling the Climate Crisis at Home and Abroad" is to make climate considerations an essential element of U.S. foreign policy and national security planning, and to understand how domestic policy can address the implications of climate change. Overarching goals for domestic policy include strengthening clean air and water protections, holding polluters accountable, delivering environmental justice, and driving the mitigation of climate-related risks in our economy.	At INL, several initiatives have been undertaken to address EO 14008. These initiatives include activities as diverse as evaluating infrastructure to identify opportunities to increase efficiency in electricity and water use, assessing the materials supply chain to reduce INL's carbon footprint, implementing the INL Net-Zero Plan, and aligning land use/land stewardship objectives with ecosystems resilience and ecosystem services priorities. With respect to ecological resource conservation, INL implements several conservation plans. Land stewardship activities prioritize conserving and restoring native communities to maximize ecosystem services such as carbon sequestration. Wildland fire management is an important focus for INL land stewardship, particularly minimizing losses of native plant communities to wildland fire and restoring	N	3.7 Chapter 9

Table 2-1. continued.

REGULATORY PROGRAM DESCRIPTION	2022 COMPLIANCE STATUS	PERMIT REQUIRED Y/N	REPORT SECTIONS
	communities affected by wildland fire to their historical ecological function. Another aspect of maintaining healthy, native ecosystems at INL is consistent implementation of the site-wide noxious weed plan. Ecological monitoring activities are conducted to continuously evaluate the condition of natural resources and ensure the local sagebrush steppe ecosystem remains healthy and resilient in its ability to respond to the stresses associated with climate change. See Chapter 9 for a more thorough discussion of the ecological aspects of implementing EO 14008 on the INL Site. Concerning site resiliency, INL is taking actions to bolster adaptation and increase the resilience of DOE-ID facilities and operations. INL is currently working on several sustainable actions. For example, in 2021, INL included sustainable acquisition clauses in electronic purchases. These new acquisitions use the Electronic Product Environmental Assessment Tool products to reduce energy use. In 2021, INL committed to becoming a national model for achieving net-zero emissions by 2031. INL will do this by developing and implementing carbon-free and carbon-capture technologies on the forefront of the move to zero-carbon emissions. INL and ICP contractors issued the Vulnerability Assessment and Resiliency Plan. The Vulnerability Assessment and Resiliency Plan documents climate vulnerabilities, implementable solutions, lays out a path to institutionalize climate adaptation policies, provides climate adaptation tools, and socializes the need to deploy emerging climate technologies. The performance status of current sustainable activities and further details of new initiatives are further discussed in Chapter 3.		
Migratory Bird Treaty Act (1918), 16 USC 703-712 The Migratory Bird Treaty Act prohibits taking any migratory bird, or any part, nest, or egg of any such bird, without authorization from the U.S. Department of the Interior. Permits may be issued for scientific collecting, banding and marking, falconry, raptor propagation, depredation, import, export, taxidermy, waterfowl sale and disposal, and special purposes. *Other environmental statutes and regulations apply, in whole or in part:* • EO 13186, “Responsibilities of Federal Agencies to Protect Migratory Birds” • Bald and Golden Eagle Protection Act (1940), 16 USC 668-668d • Idaho Statute Title 36, Chapter 1, 106 e.5.	DOE-ID has a U.S. Fish and Wildlife Service Special Purpose Permit for limited nest relocation and destruction and the associated take of migratory birds, if necessary, for mission-critical activities. DOE-ID and INL and ICP contractors also have permits from the Idaho Department of Fish and Game to manage migratory birds and collect other wildlife specimens for scientific research. All stipulated reporting requirements were met for 2022. One instance of a take was reported in 2022 and is further discussed in Chapter 9.	Y	7.2.6 9.2.4

Table 2-1. continued.

REGULATORY PROGRAM DESCRIPTION	2022 COMPLIANCE STATUS	PERMIT REQUIRED Y/N	REPORT SECTIONS
National Environmental Policy Act (1969), 42 USC 4332(2) NEPA requires federal agencies to consider potential environmental impacts of proposed actions in the decision making process. Federal agencies are required to provide a detailed statement on proposals for major federal actions significantly affecting the quality of the human environment. The purpose and function of NEPA is satisfied if federal agencies have considered relevant environmental information and the public has been informed regarding the decision making process. *Other environmental statutes and regulations apply, in whole or in part:* • 10 CFR 1021, "National Environmental Policy Act Implementing Procedures" • 40 CFR 1500-1508, "National Environmental Policy Act (NEPA), Purpose, Policy, and Mandate."	As a federal agency, DOE complies with the NEPA requirements (procedural provisions, 40 CFR 1500 through 1508), as outlined in DOE's NEPA Implementing Procedures (10 CFR 1021). DOE's commitment to NEPA is performed by thoroughly evaluating the potential impacts of proposed federal actions that affect the quality of the environment at INL Site. DOE ensures that reasonable alternatives for implementing such actions have been considered in the decision making process and that such decisions are documented in accordance with DOE and the Council on Environmental Quality regulations. Such a prescribed evaluation process ensures the proper level of environmental review (called a NEPA review) is performed before an irreversible commitment of resources is made while considering other statutory requirements. The INL contractor enters the scope for proposed projects into the Environmental Review Process (ERP), an electronic system developed specifically for INL, in which project personnel, laboratory environmental staff, and other identified personnel can review the scope to identify the regulatory requirements that project proponents will need to meet for proposed actions to proceed. In 2022, laboratory staff reviewed approximately 575 proposed projects. The output of the ERP is the issuance of an Environmental Compliance Permit (ECP). An ECP states the level of NEPA compliance needed for the proposed project as well as project specific instructions project proponents will follow to ensure compliance to regulatory requirements. Of the approximately 575 projects reviewed in 2022, 70 were issued a new categorical exclusion determination under NEPA. Other projects were covered under existing categorical exclusion determinations (i.e. facility improvements), existing Environmental Assessments or Environmental Impact Statements (i.e. Environmental Assessment for Use of DOE-Owned High-Assay Low-Enriched Uranium Stored at Idaho National Laboratory [DOE/EA-2087]), or required the completion of a new NEPA review. DOE-ID projects categorically excluded from further NEPA review can be viewed at https://www.id.energy.gov/NEPA/nepa.htm. The ICP contractor uses an Environmental Checklist (EC) which captures the purpose and need of a project proposal and identifies environmental aspects associated with the project. The Environmental Checklist identifies project specific instructions the project is required to follow to meet NEPA compliance to regulatory requirements. The ICP contractor reviewed six ECs, all of which were covered by existing Environmental Assessments, Environmental Impact Statements, Records of Decision, or other previously approved NEPA documents.	N	NA

Table 2-1. continued.

REGULATORY PROGRAM DESCRIPTION	2022 COMPLIANCE STATUS	PERMIT REQUIRED Y/N	REPORT SECTIONS
	The proposed projects or activities that do not have coverage under existing NEPA documents or do not meet the requirements of categorical exclusion require new or additional analyses. In July of 2022, DOE began to develop an Environmental Assessment for the proposed Molten Chloride Reactor Experiment (MCRE) project. The proposed MCRE project would be sited within existing facilities at the Materials and Fuels Complex (MFC) on the INL Site and use existing infrastructure. The proposed MCRE project is intended to confirm key physics phenomena relevant to the design and safe operation of fast spectrum molten salt reactors and reduce the uncertainty associated with predicting those phenomena. The Environmental Assessment is drafted and is currently being processed.		
National Historic Preservation Act (NHPA) (1966), as amended, 54 USC 300101 et seq. The NHPA requires federal agencies to establish programs to identify, record, and protect cultural resources and to assess the impacts of proposed projects on historic or culturally important sites, structures, or objects within the area of potential effect for a proposed project. The NHPA further requires federal agencies to assess archaeological sites, historical buildings, and objects on such sites to determine their qualification for inclusion in the National Register of Historic Places. In addition, NHPA requires federal agencies to consult with State Historic Preservation Offices, affected tribes, and the Federal Advisory Council on Historic Preservation, as appropriate, when determining whether the proposed actions would adversely affect properties eligible for listing on the National Register of Historic Places. Compliance is achieved via adherence to Sections 106 and 110 of the NHPA. *Other environmental statutes and regulations apply, in whole or in part to DOE-INL's cultural resource management obligations:* • The Archaeological Resources Protection Act (1979), 16 USC §470aa-470mm • 36 CFR 79, "Curation of Federally Owned and Administered Archaeological Collections" • 36 CFR 800, "Protection of Historic Properties" • 43 CFR 7, "Protection of Archaeological Resources"	The INL Cultural Resource Management Office (CRMO) works with DOE-ID's Cultural Resource Coordinator to steward archaeological and architectural cultural resources across INL. During 2022, the CRMO continued to operate under the INL Cultural Resource Management Plan (DOE-ID 2016a) which was developed through a programmatic agreement with the Idaho State Historic Preservation Office and the Advisory Council on Historic Preservation in 2004. A new programmatic agreement is being negotiated among DOE-ID, Idaho State Historic Preservation Office, Advisory Council on Historic Preservation, the Shoshone-Bannock Tribes, and other consulting parties to tailor the Section 106 process to the current needs of the INL Site. The CRMO has been integrated into the National Environmental Policy Act (NEPA) Environmental Review Process since April 2022, allowing better coordination with NEPA reviews and greater streamlining of the Section 106 review process. Archaeologists conducted multiple field surveys to identify and record or re-record archaeological resources that would be impacted by proposed INL activities under Section 106. Additionally, archaeologists surveyed 535 acres and recorded or re-recorded 53 archaeological resources, including both sites and isolates, pursuant to Section 110. Work continued on the built environment inventory update. Individual resources and historic districts constructed prior to 1980 were surveyed, recorded, and evaluated to determine which were eligible for inclusion on the National Register. The CRMO continues to support DOE-ID with their government-to-government consultation efforts with the Shoshone-Bannock Tribes under the Agreement-in-Principle (AIP). The DOE-ID, CRMO, and the Shoshone-Bannock Heritage Tribal Office collaborate regularly and tribal representatives contribute to Sections 106 and 110 projects in the field, as report co-authors, and reviewers, and lead visits for tribal members. DOE-ID and CRMO provided an annual update to the Fort Hall Business Council on June 29, 2022, and facilitates meetings of the INL Site Cultural Resource Working Group.	N	9.5

Table 2-1. continued.

REGULATORY PROGRAM DESCRIPTION	2022 COMPLIANCE STATUS	PERMIT REQUIRED Y/N	REPORT SECTIONS
• Native American Graves Protection and Repatriation Act (1990), as amended, 25 USC 3001-3013 • American Indian Religious Freedom Act (1996), 42 USC 1996 Religious Freedom Restoration Act (1993), 42 USC §200bb-200bb4 • EO 13007, "Indian Sacred Sites" • EO 13175, "Consultation and Coordination with Indian Tribal Governments."			
HAZARDOUS MATERIALS AND WASTE MANAGEMENT			
Comprehensive Environmental Response, Compensation, and Liability Act (1980), 40 CFR 300, 42 USC 9601 et seq The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) provides the process to assess and remediate areas contaminated by the release or threat of release of chemically hazardous, radioactive substances, or both. *Other environmental statutes and regulations apply, in whole or in part:* • 40 CFR 300, "National Oil and Hazardous Substance Pollution Contingency Plan."	Nuclear research and other operations at the INL Site left behind contaminants that pose a potential risk to human health and the environment. The INL Site was placed on the National Priorities List under CERCLA on November 29, 1989. The DOE-ID, the State of Idaho DEQ, and the EPA Region 10 signed the Federal Facility Agreement and Consent Order (FFA/CO) in December of 1991 (DOE 1991). Environmental restoration is conducted under the FFA/CO, which outlines how the INL Site will comply with CERCLA. It identifies a process for DOE-ID to work with its regulatory agencies to safely execute the cleanup of past release sites. The INL Site is divided into ten Waste Area Groups (WAGs) as a result of the FFA/CO, and each WAG is further divided into smaller cleanup areas called operable units. Field investigations are used to evaluate potential release sites within each WAG and operable unit when existing data are insufficient to determine the extent and nature of contamination. After each investigation is completed, a determination is made regarding whether a "No Action" or "No Further Action" listing is possible, or whether it is appropriate to proceed with an interim cleanup action, the Operable Unit 10-08 Plug-In Remedy action, or further investigation using a remedial investigation/feasibility study (RI/FS). Results from the RI/FS form the basis for risk assessments and alternative cleanup actions. This information, along with the regulatory agencies' proposed cleanup plan is presented to the public in a document called a proposed plan. After consideration of public comments, DOE, EPA, and Idaho DEQ develop a record of decision (ROD) that selects a cleanup approach from the alternatives evaluated. Cleanup activities can then be designed, implemented, and completed. Since the FFA/CO was signed in December of 1991, the INL Site has cleaned up release sites containing asbestos, petroleum products, acids and bases, radionuclides, unexploded ordnance and explosive residues, polychlorinated	N	Table 2-2 6.5

Table 2-1. continued.

REGULATORY PROGRAM DESCRIPTION	2022 COMPLIANCE STATUS	PERMIT REQUIRED Y/N	REPORT SECTIONS
	biphenyls, heavy metals, and other hazardous materials. All 24 RODs that were scheduled have been signed and are being implemented or have been completed. Comprehensive RI/FSs have been completed for WAGs 1–5, 7–9, and 6/10 (6 is combined with 10). Active remediation is completed at WAGs 2, 4, 5, 6, 8, and 9. Institutional controls and operations and maintenance activities at these sites are ongoing and will continue to be monitored under the *Site-Wide Institutional Controls and Operations and Maintenance Plan* (DOE-ID 2022a). The status of on-going active remediation activities at WAGs 1, 3, 7, and 10 are described in Table 2-2. Documentation associated with the remedial actions and other removal actions are publicly available in the CERCLA Administrative Record and can be accessed at https://idahoenvironmental.com/ARIR/. Decontamination and decommissioning activities are also performed at the INL Site in accordance with the CERCLA (42 USC 9601 et seq.), as amended by the "Superfund Amendments and Reauthorization Act of 1986" (Public Law 99-499), and in accordance with the "National Oil and Hazardous Substances Pollution Contingency Plan" (40 CFR 300). Decontamination and decommissioning activities are consistent with the joint DOE and EPA *Policy on Decommissioning of Department of Energy Facilities Under the Comprehensive Environmental Response, Compensation, and Liability Act* (DOE and EPA 1995), which establishes the CERCLA non-time critical removal action process as an approach for decommissioning. pursuant to CERCLA, Section 104(a), and EO 12580, "Superfund Implementation," as recognized by Section 5.3 of the FFA/CO (DOE-ID 1991). In accordance with 40 CFR 300.415(j) and DOE guidance, on-INL Site removal actions conducted under CERCLA are required to meet ARARs to the extent practicable considering the exigencies of the situation. This approach satisfies environmental review requirements and provides for stakeholder involvement, while providing a framework for selecting the decommissioning alternative.		
DOE Order 435.1 The Atomic Energy Act of 1954 (42 U.S.C § 2011 1954) Section 161(i) authorizes DOE to regulate activity involving certain radioactive materials, including radioactive waste, to "protect human health and minimize danger to life or property." This authority is implemented through DOE O 435.1, "Radioactive Waste Management," and the accompanying DOE Manual 435.1-1, "Radioactive Waste Management Manual," which set forth the requirements for	The INL contractor manages all radioactive waste generated at INL facilities. The Waste Management Program is the lead organization for ensuring compliant cradle-to-grave waste management of containerized waste as described in PDD-17000, "Waste Management Program." The INL contractor maintains facility-specific Radioactive Waste Management Basis documents to demonstrate DOE O 435.1 compliance. The INL and ICP contractors manage all hazardous, mixed low-level waste, low-level, transuranic, high level, remote handled, recyclable waste, waste with no	N	N/A

Table 2-1. continued.

REGULATORY PROGRAM DESCRIPTION	2022 COMPLIANCE STATUS	PERMIT REQUIRED Y/N	REPORT SECTIONS
assuring the safety of the generation, treatment, storage, and disposal of DOE-owned radioactive waste. These DOE directives ensure that radioactive waste management activities are systematically planned, documented, executed, and evaluated. Specifically, the order and the manual: • Establish requirements to implement DOE regulating authority and responsibilities for radioactive waste management • Define DOE radioactive waste types: (1) high-level waste, (2) transuranic (TRU) waste, and (3) low-level waste • Emphasize management for disposal and establish requirements for waste characterization, waste certification, and waste acceptance criteria • Identify performance-based requirements • Require life-cycle management (i.e., from generation planning to disposal) • Rely on existing nuclear safety philosophies (e.g., Integrated Safety Management System, Graded Approach, Defense-in-Depth) • Require a DOE-approved Radioactive Waste Management Basis to ensure hazards have been identified, analyzed, and mitigated. *Other environmental statutes and regulations apply, in whole or in part:* • DOE O 435.1, Change 2, "Radioactive Waste Management" • DOE Manual 435.1, Change 3, "Radioactive Waste Management Manual (January 2021)."	identified path to disposal, industrial, Toxic Substances Control Act (TSCA), and universal waste streams that are generated and stored at the INL Site and approved off-INL Site waste streams. Management activities include, but are not limited to, storing waste, treating waste, and transporting and disposing of waste. The overall responsibility for managing waste at INL contractor facilities resides in the INL contractor's Waste Management Programs organization, according to LWP-17000, "Waste Management" and the ICP contractor manages waste that is generated and stored at the ICP facilities, and approved off-Site waste streams per PDD-234, "Waste Management Program." All waste management activities described herein are conducted in compliance with all applicable provisions of DOE O 435.1. See Table 2-3 for information on wastes managed at the INL Site by INL and ICP contractors. See Table 2-3 for the status of each phase of the LLW management process for facilities managed at the INL Site by INL and ICP contractors.		
Federal Facility Compliance Act of 1992, as amended. Enacted by Congress on October 6, 1992, the *Federal Facility Compliance Act of 1992* amends Section 6001 of the Resource Conservation and Recovery Act of 1976 (RCRA) to	The INL and ICP contractors manage all mixed waste generated at their respective facilities. The Waste Management Program is the lead organization for ensuring compliant cradle-to-grave management of INL containerized mixed waste as	N	N/A

Table 2-1. continued.

REGULATORY PROGRAM DESCRIPTION	2022 COMPLIANCE STATUS	PERMIT REQUIRED Y/N	REPORT SECTIONS
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. DOE-ID is required to submit and receive approval of the INL Site Treatment Plan from the Idaho DEQ.	described in PDD-17000, "Waste Management Program." Waste Management at ICP facilities is described in PDD-234, "Waste Management Program." The INL and ICP contractors maintain facility-specific Radioactive Waste Management Basis documents to demonstrate DOE O 435.1 compliance. DOE-ID submitted the fiscal year (FY) 2023 Site Treatment Plan Annual Update and FY 2022 Site Treatment Plan Annual Report to Idaho DEQ in November 2022 in accordance with sections 2.3.3 and 2.3.4. DOE-ID and INL Site contractors met quarterly with Idaho DEQ to discuss the status of milestones, treatment projects, and other activities conducted under the Site Treatment Plan.		
Federal Insecticide, Fungicide, and Rodenticide Act (1996), 7 USC 136 et seq. The Federal Insecticide, Fungicide, and Rodenticide Act is the federal statute that governs the registration, distribution, sale, and use of pesticides in the United States. The FIFRA regulations found in 40 CFR parts 150-189 are promulgated and administered by the EPA. *Other environmental statutes and regulations apply, in whole or in part:* • IDAPA 02.03.03, "Rules Governing Pesticide and Chemigation Use and Application" • Idaho Statute Title 22 Chapter 34, "Idaho Pesticides and Chemigation Law."	All pesticide applications on the INL Site are conducted in accordance with the specific pesticide label instructions in accordance with the Federal Insecticide, Fungicide, and Rodenticide Act. Additionally, all appropriate records associated with pesticide applications are kept for a minimum of three years by each pesticide applicator in accordance with IDAPA 02.03.03, "*Rules Governing Pesticide and Chemigation Use and Application*." For details on pesticide application on the INL Site see Section 9.4.3.	N	9.2.4
Resource Conservation and Recovery Act (1976), 40 CFR 259-282, 42 USC 6901 et seq. The Resource Conservation and Recovery Act established regulatory standards for generation, transportation, storage, treatment, and disposal of hazardous waste. *Other environmental statutes and regulations apply, in whole or in part:* • 40 CFR 270.13, "Contents of Part A of the Permit Application" • 40 CFR 262, "Standard Applicable to Generators of Hazardous Waste" • 40 CFR 263, "Standards Applicable to Transporters of Hazardous Waste"	*RCRA Permits:* Form 8700-23, along with maps, drawings, and photographs, as required by 40 CFR 270.13, is included with the Part A permit (Volume 1) and in each Part A Application included with the partial Part B permits. The INL Site currently has one RCRA permit (Volume 1) for the interim status unit, Idaho Nuclear Technology and Engineering Center (INTEC) Tank Farm Facility. One interim status unit, TSA1/R at the Radioactive Waste Management Complex (RWMC), is not included in Volume 1. Information on this unit is found in the Advanced Mixed Waste Treatment Project Hazardous Mixed Waste Management Act (HWMA)/RCRA Transuranic Storage Area Interim Status Document (DEQ 2021). An interim status unit is a Part A (interim status) unit that has not been RCRA closed or has not been permitted under a Part B hazardous waste permit application. The INL Part B permits are considered a single RCRA permit that comprises several volumes, all under a single EPA ID number, ID4890008952. Therefore, each of the seven Part B permit volumes is called a partial permit. Each partial Part B Permit includes the Part	Y	N/A

Table 2-1. continued.

REGULATORY PROGRAM DESCRIPTION	2022 COMPLIANCE STATUS	PERMIT REQUIRED Y/N	REPORT SECTIONS
• 40 CFR 263, "Standards Applicable to Transporters of Hazardous Waste" • 40 CFR 264, "Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities" • 40 CFR 265, "Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities" • 40 CFR 266, "Standards for the Management of Specific Hazardous Wastes and Specific Types of Hazardous Waste Management Units" • 40 CFR 267, "Standard for Owners and Operators of Hazardous Waste Facilities Operating Under a Standardized Permit" • 40 CFR 268, "Land Disposal Restrictions" • 40 CFR 270, "EPA Administered Permit Programs: The Hazardous Waste Permit Program" • 40 CFR 273, "Standards for Universal Waste Management" • 40 CFR 273, "Standards for Universal Waste Management" • 40 CFR 279, "Standards for the Management of Used Oil."	A application specific to the permitted units in that Part B and the Part B of the RCRA hazardous waste permit that contains detailed, site-specific information and hazardous waste operations as described in applicable sections of 40 CFR 262 through 270.27. *RCRA Reports.* As required by Idaho DEQ, the INL Site submitted the 2022 annual Idaho Hazardous Waste Generator Annual Report (CCN 330317) on the types and quantities of hazardous wastes generated, shipped for treatment and disposal, and remain in storage. Federal regulations require large quantity generators to submit a report every two years regarding the nature, quantities, and disposition of hazardous waste generated at their facility. The EPA refers to this as the National Biennial RCRA Hazardous Waste Report or Biennial Report. The Biennial Report form (EPA form 8700-13A/B) is submitted to the Idaho DEQ by March 1 of every even-numbered year for the previous calendar year. The biennial report was submitted to the electronic RCRA Info Industry Application (CCN 328539) for 2022. *RCRA Closure Plan.* There were no closure activities completed in 2022. *RCRA Inspection.* For FY 2022, Idaho DEQ performed an RCRA inspection from May 16–19, 2022. On July 21, 2022, Idaho DEQ issued a warning letter to DOE-ID and IEC related to two previously self-disclosed events resulting in permit noncompliances and one area of concern identified by Idaho DEQ during the May inspection. *RCRA Consent Order.* Due to DOE-ID's inability to meet commitments to initiate waste treatment in the Integrated Waste Treatment Unit (IWTU) and cease the use of the INTEC interim status tanks, Idaho DEQ assessed a penalty to DOE-ID pursuant to the provisions under Section VII of the fifth modification to the Notice of Noncompliance-Consent Order, in the amount of $1,458,000 for the period of noncompliance from March 1, 2021, to March 30, 2022. Supplemental environmental projects were utilized in lieu of the Original payment, and the fines were reduced due to adverse impacts to IWTU's outage schedule resulting from the COVID-19 global pandemic.		
OTHER ENVIRONMENTAL REQUIREMENTS			
DOE Order 231.1B, "Environmental, Safety, and Health Reporting" Environmental, Safety, and Health Reporting requires the timely collection and reporting of information on	This report, "*2022 Idaho National Laboratory Annual Site Environmental Report*," fulfills DOE O 231.1B, the radiation protection requirements of DOE O 458.1, and documents and communicates the environmental performance to members of the public living near the INL Site and to other interested parties.	N	All chapters

Table 2-1. continued.

REGULATORY PROGRAM DESCRIPTION	2022 COMPLIANCE STATUS	PERMIT REQUIRED Y/N	REPORT SECTIONS
environmental issues that could adversely affect the human and safety of the public and the environment at DOE sites. *Other environmental statutes, regulations, and directives apply, in whole or in part:* • DOE O 458.1, Change 4, "Radiation Protection of the Public and the Environment."			
DOE Order 232.2A, "Occurrence Reporting and Processing of Operations Information" In accordance with DOE O 232.2A, Occurrence Reporting and Processing of Operations Information, the INL Site ensures DOE personnel are notified of events that could adversely affect the health and safety of workers, the public, the environment, DOE's missions, or the credibility of the Department. Events are provided report levels (High, Low, and Informational) to reflect the impact associated with a given occurrence in terms of health, safety and security. INL has a Tailoring Agreement in place that allows reporting most Informational events to DOE-ID through the INL issues management software (LabWay). Other events are also reported to DOE Headquarters through the Occurrence Reporting and Processing System (ORPS).	From January 1, 2022, to December 31, 2022, INL reported one event related to an environmental release. This event was reported and tracked in LabWay under Condition CO 2022-0600. On April 6, 2022, while conducting a corrective maintenance activity on MFC-786 substation transformer N-TF-055, a holding tank in the subcontractors self-contained filtration trailer failed and spilled approximately 200 gallons of transformer dielectric fluid to the ground. The process to filter the dielectric fluid (a soy-based oil) involves draining the oil to a tank, then heating and filtering it to remove impurities until it is clean enough to return it to the transformer. The cause of the tank failure is unknown. As a vegetable-based oil, the transformer dielectric fluid is deemed eco-friendly with no known hazardous constituents. No injuries or facility impacts resulted from the oil tank failure. Work was immediately stopped, and actions were taken to mitigate the spread of the oil by applying floor dry, pig mats, and spill blankets. Management, Environmental, and DOE were notified. Oil on the pavement was cleaned up on April 6, 2022. Oil that was spilled on the soil was cleaned and the INL Environmental Group evaluated the area on April 28, 2022, and determined no further action was required.	N	N/A
Emergency Planning and Community Right-to-Know Act (1986), 42 USC 11001, et seq. The Emergency Planning and Community Right-to-Know Act (EPCRA) of 1986 was created to help communities plan for emergencies involving hazardous substances. The Act helps increase the public's knowledge and access to information on chemicals at individual facilities, their uses, and releases into the environment. States and communities, working with facilities, can use the information to improve chemical safety and protect public health and the environment. *Other environmental statutes and regulations apply, in whole or in part:*	The INL Site's 2022 compliance with key EPCRA provisions is summarized below. • *Section 304: Extremely Hazardous Substance Release Notification* – There were no CERCLA-reportable chemicals released at the INL Site during 2022. Section 304 requires owners and operators of facilities where hazardous chemicals are produced, used, or stored to report releases of CERCLA hazardous substances or extremely hazardous substances that exceed reportable quantity limits to state and local authorities (i.e., state emergency response commissions and local emergency planning committees). • *Section 311-312: Safety Data Sheet/Chemical Inventory* – Extremely hazardous substances, such as chlorine, cyclohexylamine, nitric acid, nitrogen dioxide, and sulfuric acid were among the chemicals reported in 2022.	N	2.5

Table 2-1. continued.

REGULATORY PROGRAM DESCRIPTION	2022 COMPLIANCE STATUS	PERMIT REQUIRED Y/N	REPORT SECTIONS
• IDAPA 58.01.02.851, "Petroleum Release Reporting, Investigation, and Confirmation."	Sections 311 and 312 require facilities manufacturing, processing, or storing designated hazardous chemicals to make safety data sheets describing the properties and health effects of these chemicals available to state and local officials and local fire departments. Facilities are also required to report inventories of all chemicals that have safety data sheets to state and local officials and local fire departments. The INL Site satisfies the requirements of Section 311 by submitting a quarterly report to state and local officials and fire departments, identifying chemicals that exceed regulatory thresholds. In compliance with Section 312, the annual Emergency and Hazardous Chemical Inventory (Tier II) Report is provided to local emergency planning committees, the state emergency response commission, and local fire departments by the regulatory due date of March 1. This report includes the types, quantities, and locations of hazardous chemicals and extremely hazardous substances stored at the INL Site and Idaho Falls facilities that exceed regulatory thresholds. In 2022, the chemical inventory report included 75 individual chemicals at INL Site facilities and 14 at Idaho Falls facilities. The INL Site also stores extremely hazardous substances, a category of chemicals that could cause serious irreversible health effects from accidental releases. • *Section 313: Toxic Chemical Release Inventory Reporting* – The INL Site submitted Toxics Release Inventory Forms for chromium, diisocyanates, lead,naphthalene, nickel, nitrates and nitric acid, to EPA and Idaho DEQ by the regulatory due date of July 1. Section 313 requires facilities to submit a Toxics Release Inventory Form annually for regulated chemicals that are manufactured, processed, or otherwise used above applicable threshold quantities. Releases under EPCRA 313 reporting include transfers to waste treatment and disposal facilities off the INL Site, air emissions, recycling, and other activities. *Reportable Environmental Releases* – No reportable spills for INL and ICP contractors in 2022.		
DOE Order 436.1, "Departmental Sustainability" The order defines requirements and responsibilities for managing sustainability withing DOE and to ensure that the department carries out its missions in a sustainable manner that addresses national energy security and global environmental challenges, and advances sustainable, efficient and reliable energy for the future.	DOE contractors at INL Site have developed site sustainability plans and have implemented environmental management systems (EMS) that are incorporated with the contractors' integrated safety management systems to promote sound stewardship practices and ensure compliance with DOE Order 436.1. Each contractor's EMS has been certified to the ISO 14001 Standard since 2005 and is certified by an external registrar every three years. Chapter 3 contains details on contractor EMS.	N	Chapter 3

Table 2-1. continued.

REGULATORY PROGRAM DESCRIPTION	2022 COMPLIANCE STATUS	PERMIT REQUIRED Y/N	REPORT SECTIONS
Other environmental statutes and regulations apply, in whole or in part: • EO 13990, "Protecting Public Health and the Environmental and Restoring Science to Tackle the Climate Crisis" • EO 14057, "Catalyzing Clean Energy Industries and Jobs Through Federal Sustainability."			
Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations" The purpose of this EO is to focus federal attention on the environmental and human health effects of federal actions on minority and low-income populations with the goal of achieving environmental protection for all communities. *Other environmental statutes and regulations apply, in whole or in part:* • EO 14008, "Tackling the Climate Crisis at Home and Abroad" • EO 14057, "Catalyzing Clean Energy Industries and Jobs Through Federal Sustainability."	DOE-ID and the INL evaluate the potential for environmental justice matters as part of the review processes implemented to identify potential environmental impacts from any and all proposed federal actions routinely as part of the NEPA compliance program. Consideration of environmental justice in NEPA analysis is driven by EO 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," and is further supported by EO 14008. The executive orders effectively direct federal agencies to identify disproportionately high and adverse human health or environmental effects of federal programs, policies, and activities on minority, low-income, and minority and low-income populations and to take action to address such impacts. Section 2.3 contains details of DOE-ID and INL's promotion of environmental justice and the outreach efforts that were taken in 2022.	N	2.3
RADIATION PROTECTION			
DOE Order 458.1, Change 4, "Radiation Protection of the Public and the Environment" "Radiation Protection of the Public and the Environment" was established to protect the public and the environment against undue risk from radiation associated with radiological activities conducted under the control of DOE and DOE contractors.	The Order sets the public dose limit at a total effective dose not to exceed 100 mrem/yr (1 mSv/yr) above background radiation levels. Chapter 8 presents dose calculations for INL Site releases for 2022. The annual dose to the maximally exposed individual in 2022, as determined using Clean Air Act Assessment Package 88-PC, was 0.018 mrem (0.18 µSv). DOE standard DOE-STD-1196-2022 (DOE 2022), Derived Concentration Technical Standard, supports the implementation of DOE O 458.1. The standard defines the quantities used in the design and conduct of radiological environmental protection programs at DOE facilities and sites. These quantities, known as Derived Concentration Standards, represent the concentration of a given radionuclide in either water or air that results in a member of the public receiving 100 mrem (1 mSv)	N	Chapter 4 Chapter 5 Chapter 6 Chapter 7 Chapter 8 Appendix A

Table 2-1. continued.

REGULATORY PROGRAM DESCRIPTION	2022 COMPLIANCE STATUS	PERMIT REQUIRED Y/N	REPORT SECTIONS
	effective dose following continuous exposure for one year via each of the following pathways: (1) ingestion of water, (2) submersion in air, and (3) inhalation. Measurements of radionuclides in environmental media sampled on and around the INL Site were all below applicable Derived Concentration Standards. DOE O 458.1 specifies the limits for unrestricted release of property to the public. All INL and ICP contractors use a graded approach for release of material and equipment for unrestricted public use. Material has been categorized so that in some cases an administrative release can be accomplished without a radiological survey. Such material originates from controlled areas and includes the following: • Personal items or materials • Documents, mail, diskettes, compact disks, and other office media • Paper, cardboard, plastic products, aluminum beverage cans, toner cartridges, and other items for recycling • Office trash • Non-radiological area housekeeping materials and associated waste • Breakroom, cafeteria, and medical wastes • Medical and bioassay samples • Other items with an approved release plan. Items originating from radiological areas within the INL Site's controlled areas not in the listed categories are either surveyed prior to release to the public, or a process knowledge evaluation is conducted to verify that material has not been exposed to radioactive material or beams of radiation capable of creating radioactive material. In some cases, both a radiological survey and a process knowledge evaluation are performed (e.g., a radiological survey is conducted on the outside of the item, and a process knowledge form is signed by the custodian for inaccessible surfaces). When the process knowledge approach is employed, the history of the material confirms that no radioactive material has passed through or contacted the item. Items advertised for public sale via an auction are also surveyed by the contractor prior to shipment to the INL Site property/excess warehouse, where the materials are again resurveyed on a random basis by personnel prior to release, giving further assurance that material and equipment are not being released with inadvertent contamination.		

Table 2-1. continued.

REGULATORY PROGRAM DESCRIPTION	2022 COMPLIANCE STATUS	PERMIT REQUIRED Y/N	REPORT SECTIONS
	All contractors complete material surveys prior to release and transport to the state-permitted landfill at the Central Facilities Area. The only exception is for items that could be internally contaminated; these items are submitted to Waste Generator Services for disposal using one of the offsite treatment, storage, and disposal facilities that can accept low-level contamination. DOE-ID, using a graded approach, provides oversight of the INL clearance processes. For the 2022 calendar year there were 1,419 releases of personal property items with over 99% of these releases being for reuse at the INL (i.e., instruments for calibration, miscellaneous tools, and equipment). Those that were not released for reuse were released for appropriate disposal. On January 12, 2000, the Secretary of Energy established a DOE moratorium on the unrestricted release of all volumetrically contaminated metals. On July 13, 2000, DOE suspended "the unrestricted release for recycling of scrap metal from radiological areas within DOE facilities" (DOE Secretarial Memorandum: Release of Surplus and Scrap Materials; Memorandum from Bill Richardson to Heads of Departmental Elements). The moratorium and suspension of the release of metals from DOE sites remain in effect. INL and ICP contractors continue to follow the requirements of these Secretarial Memorandums. No scrap metal directly released from radiological areas is recycled.		
Toxic Substance Control Act (1976), 15 USC 2601 et seq The TSCA, which is administered by the EPA, requires the regulation of production, use, or disposal of chemicals. TSCA supplements sections of the CAA, the Clean Water Act (CWA), and the Occupational Safety and Health Act. *Other environmental statutes and regulations apply, in whole or in part:* • 40 CFR 761, Subpart J, "General Records and Reports."	Because the INL Site does not produce chemicals, compliance with the TSCA is primarily directed towards the use and management of certain chemicals—particularly polychlorinated biphenyls (PCBs). The INL Site manages radioactive mixed waste containing PCBs received from other DOE Sites many years ago for disposal. Environmental remediation activities include the re-processing of these waste materials for disposition off-site. In addition, PCBs were used in the manufacture of many different items and materials including liquid filled electrical equipment such as transformers and capacitors, paint, and caulking. Whenever any of these items or materials are discovered, they are disposed of off the INL Site at a TSCA-approved disposal facility. Requirements for the reporting of PCB-related activities are found in 40 CFR 761, Subpart J, "General Records and Reports." These regulations require a facility to maintain a written record documenting all PCB management activities until the PCBs are disposed of; the written record must be available for inspection or submission if requested by the EPA. It must be prepared each year by July 1 and maintained at the facility for at least three years after the	Y	N/A

REGULATORY PROGRAM DESCRIPTION	2022 COMPLIANCE STATUS	PERMIT REQUIRED Y/N	REPORT SECTIONS
	facility ceases using or storing PCBs and PCB items. INL Site prepares the required annual documentation each year. It includes an inventory of PCB/radioactive waste in storage at INL for the previous year and documents progress made toward disposal in accordance with applicable regulations. The written record for the annual documentation is issued on the Electronic Document Management System by July 1 in accordance with CCN 246686 and the "Interface Agreement between INL, ICP, and NRF contractors for Environmental Reporting," IAG-681 (INL 2022). CCN 246686 documents EPA's approval to revise our procedures for issuing the written record to match the TSCA regulations. The INL contractor manages TSCA Risk-based Disposal Approval (RBDAs) at the ATR Complex that establishes an agreement with the EPA to properly dispose of and/or contaminate PCB waste in accordance with 40 CFR 761. TSCA RBDAs are situation based off discovery with the intentions of minimizing risk to human health and the environment. TRA-641 was developed to address painted surfaces in the empty canal under 40 CFR 761.62(c) for paint, and under 40 CFR 761.61(c) for PCBs that may have penetrated the concrete. TRA-619 was developed to address the short-term cleanup and disposal of PCBs under 40 CFR 761.61(c) that have penetrated the concrete flooring from the application of PCB paint. The ICP contractor holds RBDAs, granted by EPA Region 10, which allow for processing of PCB-contaminated legacy sludge wastes from Rocky Flats Plant at two of the facilities located at the RWMC. Per 40 CFR 761.20(c)(2)(ii), processing activities which are primarily associated with and facilitate treatment or disposal require a TSCA PCB approval. Work performed under these RBDAs ensures that these wastes can be accepted for disposal at the Waste Isolation Pilot Plant near Carlsbad, New Mexico.		
WATER QUALITY AND PROTECTION			
Clean Water Act (1972), 40 CFR 109-140, 33 USC 1251, et seq. The CWA established goals to control pollutants discharged to U.S. surface waters. Among the main elements of the CWA are effluent limitations for specific industry categories set by EPA, as well as regulating water quality standards for surface water. The CWA also provided for the National Pollutant Discharge Elimination System permit program, requiring permits for discharges into regulated surface waters. *Other environmental statutes and regulations apply, in whole or in part:*	The Idaho DEQ is authorized by the EPA as the permitting authority over the National Pollutant Discharge Elimination System program. The Idaho DEQ program is called the Idaho Pollutant Discharge Elimination System (IPDES). INL and ICP contractors do not currently hold any IPDES permits but in-town facilities discharge to the city of Idaho Falls wastewater treatment plant, which is required by the IPDES permit program to set pretreatment standards for nondomestic discharges to publicly owned treatment works. The INL Research Center complied with an Industrial Wastewater Acceptance permit for discharges to the city of Idaho Falls in Idaho. This program is set out in Title 8, Chapter 1 of the Municipal Code of the city of Idaho Falls, Idaho. All discharges in 2022 were within levels established in the INL Research Center Industrial Wastewater Acceptance permit. The city of Idaho Falls, Idaho, did not perform an inspection in 2022.	Y	N/A

Table 2-1. continued.

REGULATORY PROGRAM DESCRIPTION	2022 COMPLIANCE STATUS	PERMIT REQUIRED Y/N	REPORT SECTIONS
• IDAPA 58.01.16, "Wastewater Rules" • IDAPA 58.01.25, "Rules Regulating the Idaho Pollutant Discharge Elimination System Program."			
Idaho Reuse Permits Idaho defines recycled water as water that has been treated by a wastewater treatment system and is used in accordance with the Recycled Water Rules. *Other environmental statutes and regulations apply, in whole or in part:* • IDAPA 58.01.11, "Ground Water Quality Rule" • IDAPA 58.01.16, "Wastewater Rules" • IDAPA 58.01.17, "Recycled Water Rules."	Wastewater is the spent water or effluent from activities and processes occurring in dwellings, commercial buildings, industrial plants, institutions, and other establishments. If the wastewater contains sewage, it is considered municipal wastewater. If it does not contain sewage, it is considered industrial wastewater. Recycled water is wastewater effluent that is treated, if necessary, and then reused for other purposes. The Idaho DEQ encourages reuse, which is the practice of using recycled water for irrigation, ground water recharge, landscape impoundments, toilet flushing in commercial buildings, dust control, and other beneficial uses. The Idaho DEQ requires anyone choosing to use recycled water to obtain a reuse permit. Reuse permits consider the site-specific conditions of each facility and include site-specific limits and conditions, as applicable, to protect public health and the environment, including groundwater. The Idaho DEQ issues these permits in accordance with IDAPA 58.01.17, "Recycled Water Rules;" IDAPA 58.01.16, "Wastewater Rules;" and IDAPA 58.01.11, "Ground Water Quality Rule." The following facilities have reuse permits at the INL Site: • Advanced Test Reactor Complex Cold Waste Ponds (I-161-03) • INTEC New Percolation Ponds (M-130-06) • MFC Industrial Waste Pond (I-160-02). Idaho DEQ inspected the INL and ICP contractors reuse systems in April 2022. All reuse systems at the INL Site were operated in substantial compliance with permit requirements during 2022.	Y	Chapter 5 Chapter 6 Appendix A
Safe Drinking Water Act (1974), 40 CFR 141-143, 42 USC 300f, et seq. The Safe Drinking Water Act establishes primary standards for public water supplies to ensure it is safe for consumption. *Other environmental statutes and regulations apply, in whole or in part:* • 40 CFR 141, "National Primary Drinking Water Regulations"	INL Site drinking water complied with all applicable federal and state water quality standards in 2022. Eleven potable water systems are permitted by Idaho DEQ. Each potable water system is sampled according to a monitoring cycle that identifies specific contaminants and sampling frequency, ranging from monthly, quarterly, or once every 1, 3, 6, or 9 years. In addition to regulatorily required sampling, INL Site contractors performed additional surveillance monitoring for bacteriological contaminants, radiological	N	2.3.2 6.7

Table 2-1. continued.

REGULATORY PROGRAM DESCRIPTION	2022 COMPLIANCE STATUS	PERMIT REQUIRED Y/N	REPORT SECTIONS
• 40 CFR 143, "National Secondary Drinking Water Regulations" • IDAPA 58.01.08, "Idaho Rules for Public Drinking Water Systems."	contaminants, and per- and poly-fluoroalkyl substances in 2022. The ICP contractor did not sample for per- and poly-fluoroalkyl substances in 2022.		
QUALITY ASSURANCE			
10 CFR 830, Subpart A, "Quality Assurance Requirements" 10 CFR 830, Subpart A establishes quality assurance requirements for contractors conducting activities, including providing items or service that affect, or may affect, nuclear safety of DOE nuclear facilities. *Other environmental statutes and regulations apply, in whole or in part:* • DOE O 414.1D, Change 2, "Quality Assurance"	Quality assurance and quality control programs were maintained in 2022 by INL Site contractors and laboratories performing environmental analyses. Results are summarized in Chapter 10, Section 10.3. Field sampling elements, laboratory measurements, and performance evaluation samples were reviewed and evaluated for each INL contractor laboratory. Together this information was used to assess the quality of data provided to INL Site contractors, and to follow-up and/or conduct corrective action to improve processes when necessary. This multi-faceted approach to quality assurance and quality control added value to each INL Site contractor's monitoring program by providing confidence that all laboratory data reported in this report are reliable and of acceptable quality.	N	Chapter 10

Table 2-2. 2022 status of active Waste Area Groups.

WASTE AREA GROUP	FACILITY	STATUS
1	Test Area North	Groundwater cleanup of trichloroethene for Operable Unit 1-07B continued through 2022 in accordance with EPA and Idaho DEQ approved plans (DOE-ID 2022b, 2022c). The New Pump and Treat Facility generally operated four days per week, except for downtime due to maintenance to maintain trichloroethene concentrations in the medial zone below specified targets. The in-situ bioremediation (ISB) transitioned into a rebound test in 2012 to determine the effectiveness of the remedy to date. The revised test plan was finalized in early 2017 to establish how the groundwater cleanup at Test Area North will continue. Two ISB injection wells were constructed in 2015 to further ISB efforts and one monitoring well was constructed in 2017 to better monitor the plume at its distal edge. During 2021, one ISB injection well was constructed, and further ISB continues in a specific area where previous efforts had not achieved the desired reduction in contaminant levels. All institutional controls (IC) and operations and maintenance (O&M) requirements were maintained during 2022. However, the required daily inspections were completed during this time. The agencies were notified and corrective actions were completed.
3	Idaho Nuclear Technology and Engineering Center	The Idaho CERCLA Disposal Facility, located southwest of INTEC, disposes of contaminated soils and debris from CERCLA remediation operations for the protection of human health and the environment. Operations and monitoring at Idaho CERCLA Disposal Facility (ICDF) are carried out in accordance with EPA and Idaho DEQ approved plans (DOE-ID 2018a, 2019b, 2019c). Consolidation of waste at the ICDF reduces the risk of exposure to contaminants for human and ecological receptors, and the use of an engineered facility with leachate collection protects the underlying Snake River Plain Aquifer (SRPA). The ICDF functions as an INL sitewide disposal facility for CERCLA soils and debris from other WAGs in compliance with strict waste acceptance criteria. The facility continues to receive small amounts of liquid and solid waste periodically for disposal in the ICDF evaporation ponds and disposal cells, respectively. The ICDF evaporation ponds and SRPA are sampled annually; results are sent to the EPA and Idaho DEQ. Remedial actions and monitoring required by the WAG 3, Operable Unit 3-14 ROD (DOE-ID 2007a) are implemented through EPA- and Idaho DEQ-approved plans (DOE-ID 2018b, 2018c). Remedial actions at the Tank Farm Facility (TFF) are designed to reduce water infiltration that potentially could transport contaminants from the vadose zone and the perched water to the underlying aquifer. An interim low-permeability asphalt barrier was placed over the western two-thirds of the TFF during 2017 to further reduce infiltration of precipitation water until a final cover is constructed over the TFF after closure of the final four tanks. Perched and groundwater monitoring under and near the TFF will continue until the risk posed by contamination left in place is below target levels. All ICs and O&M requirements were maintained in 2022.
7	Radioactive Waste Management Complex	WAG 7 includes the Subsurface Disposal Area (SDA), a 97-acre radioactive waste landfill that is the major focus of remedial response actions at the RWMC (Figure 2-2). Waste is buried in approximately 35 of the 97 acres within 21 unlined pits, 58 trenches, 21 soil vault rows, and, on Pad A, an above grade disposal area. Disposal requirements have changed in accordance with laws and practices current at the disposal time. Initial operations began in 1952 and were limited to shallow, landfill disposal of waste generated at the INL Site. Beginning in 1954, the DOE Rocky Flats Plant near Boulder, Colorado, was authorized to send waste to the RWMC for disposal. The Rocky Flats Plant was a nuclear weapons production facility with peak operations during the Cold War era.

Table 2-2. continued.

WASTE AREA GROUP	FACILITY	STATUS
		Various types of radioactive waste streams were disposed of, including process waste (e.g., sludge, graphite molds and fines, roaster oxides, and evaporator salts), equipment, and other waste incidental to production (e.g., contaminated gloves, paper, clothing, and other industrial trash). Much of the Rocky Flats Plant waste was contaminated with transuranic (TRU) isotopes and solvents (e.g., carbon tetrachloride). In 1970, burial of TRU waste was prohibited. In 1984, disposal practices were modified to eliminate disposal of mixed waste. Since 1984, only low-level waste was disposed of in the SDA at the active low-level waste disposal facility (ALLWDF). Disposal of waste from offsite generators was discontinued in the early 1990s, and disposal of contact-handled waste was discontinued at the end of FY 2008. Disposal operations at the ALLWDF were completed in May 2021, and interim closure of the ALLWDF was completed in August 2022 (MacRae 2022). Final closure of the SDA and ALLWDF is addressed under the Operable Unit (OU) 7-13/14 ROD. The OU 7-13/14 ROD (DOE-ID 2008) is consistent with DOE's obligations for TRU waste removal under the *Agreement to Implement U.S. District Court Order Dated May 25, 2006*, between the Idaho DEQ and DOE-ID, effective July 3, 2008 (U.S. District Court 2008). The ROD calls for exhuming and packaging a minimum of 6,238 m^3 (8,159 yd^3) of targeted waste from a minimum combined area of 5.69 acres. Targeted waste for retrieval contains TRU elements (e.g., plutonium), uranium, and collocated organic solvents (e.g., carbon tetrachloride). Targeted waste retrievals in specific areas of the SDA commenced in 2005 and were completed in December 2021. The retrieved targeted waste is packaged, certified, and shipped out of Idaho. As of April 2022, 10,417.5 m^3 (13,625.58 yd^3) of targeted waste has been retrieved and packaged for off-site shipment. In addition to targeted waste retrieval, the ROD addresses remaining contamination in the SDA through a combination of vapor-vacuum extraction and treatment of solvent vapors from the subsurface (completed in July 2022; RPT-1904) and in situ grouting of specified waste forms containing mobile contaminants (completed in 2010; DOE-ID 2011a). Quarterly monitoring of the solvent vapors in the vadose zone will continue in accordance with the Operations and Maintenance Plan (DOE-ID 2017a). The third and final phase of the ROD includes constructing an evapotranspiration surface barrier over the entire SDA landfill, followed by long-term management and control after construction is complete. Construction is scheduled to be complete by 2028.
10	10-04 INL Site-wide Miscellaneous Sites and Comprehensive RI/FS	OU 10-04 addresses long-term stewardship functions—ICs and O&M for sites that do not qualify for Unlimited Use/Unrestricted Exposure—and explosive hazards associated with historical military operations on the INL Site. All ICs and O&M requirements were maintained in 2022, under the site-wide IC/O&M Plan (DOE-ID 2017b). The fourth site-wide CERCLA five-year review covering the period from 2015 through 2019 was finalized in January 2021. The purpose of the CERCLA five-year review is to verify that implemented cleanup actions continue to meet cleanup objectives documented in RODs.
	10-08 INL Sitewide Groundwater, Miscellaneous Sites, and Future Sites	OU 10-08 addresses site-wide groundwater, miscellaneous sites, and future sites (DOE-ID 2009). Response actions for OU 10-08 are mostly complete, and ongoing activities include groundwater monitoring and evaluating and remediating potential new sites that are discovered. Biennial groundwater monitoring will continue in 2023 (DOE-ID 2014) to verify that there is no unacceptable threat to human health or the environment from commingled plumes or along the southern INL Site boundary.

Table 2-3. Radioactive wastes managed at the INL Site.

FACILITY	GENERATION	TREATMENT	STORAGE	DISPOSAL
INL CONTRACTOR				
Advanced Test Reactor Complex	LLW[a]	—	LLW	—
Central Facilities Area	LLW	—	LLW	—
MFC/INTEC	TRU[a]/LLW	LLW	TRU/LLW	—
Material Security and Consolidation Complex	LLW	—	LLW	—
Remote-Handled Low-Level Waste Disposal Facility	LLW	—	LLW	LLW
Research and Education Campus	LLW	—	LLW	—
Specific Manufacturing Capability	LLW	LLW	LLW	—
ICP CONTRACTOR				
Advanced Mixed Waste Treatment Project	TRU/LLW	TRU/LLW	TRU/LLW	—
ICDF	—	—	—	LLW
INTEC Calcined Solids Storage Facility	—	—	HLW	—
INTEC Tank Farm Facility	—	—	HLW	—
IWTU	—	HLW[a]	HLW	—
RWMC Accelerated Retrieval Project	TRU/LLW	TRU/LLW	TRU/LLW	—
RWMC ALLWDF	—	—	—	LLW

a. HLW – high-level waste; LLW – low-level waste; TRU – transuranic.

Table 2-4. Listing of the status of each phase of the LLW management process for sites authorized to manage a LLW facility.

PHASE	REMOTE-HANDLED LLW DISPOSAL FACILITY	RADIOACTIVE WASTE MANAGEMENT COMPLEX (RWMC) ACTIVE LLW DISPOSAL FACILITY	ICDF
Performance Assessment (PA)	DOE/ID-11421 (DOE-ID 2018d), "Performance Assessment for the Idaho National Laboratory Remote-Handled Low-Level Waste Disposal Facility"	DOE/NE-ID-11243 (DOE-ID 2007b), "Performance Assessment for the RWMC Active Low-Level Waste Disposal Facility at the Idaho National Laboratory Site"	DOE/ID-10978 (DOE-ID 2011b), "Performance Assessment for the Idaho CERCLA Disposal Facility Landfill"
Composite Analysis (CA)	DOE/ID-11422 (DOE-ID 2016b), "Composite Analysis for the Idaho National Laboratory Remote-Handled Low-Level Waste Disposal Facility"	DOE/NE-ID-11244 (DOE-ID 2008b), "Composite Analysis for the RWMC Active Low-Level Waste Disposal Facility at the Idaho National Laboratory Site"	DOE/ID-10979 (DOE-ID 2006), "Composite Analysis for the INEEL CERCLA Disposal Facility Landfill"
Closure Plan	PLN-3370, "Preliminary Closure Plan for the Idaho National Laboratory Remote-Handled Low-Level Waste Disposal Facility"	RPT-576, "Interim Closure Plan for the RWMC Active Low-Level Waste Disposal Facility at the Idaho National Laboratory Site"	A preliminary closure plan was developed for the entire ICDF Complex closure. This plan was included in the "ICDF Complex Remedial Action Work Plan" (DOE/ID-10984) (DOE-ID 2012)

Table 2-4. continued.

PHASE	REMOTE-HANDLED LLW DISPOSAL FACILITY	RWMC ACTIVE LLW DISPOSAL FACILITY	ICDF
PA/CA Maintenance Program	PLN-3368, "Maintenance Plan for the Remote-Handled Low-Level Waste Disposal Facility Performance Assessment and Composite Analysis"	RPT-431, "Performance Assessment and Composite Analysis Maintenance Plan for the RWMC Active Low-Level Waste Disposal Facility"	RPT-791, "Performance Assessment and Composite Analysis Maintenance Plan for the Idaho CERCLA Disposal Facility"
Latest Annual PA/CA Summary Report	INL/RPT-23-70876 (INL 2023), "Annual Summary Report for the Remote-Handled Low-Level Waste Disposal Facility – FY 2022"	RPT-2080, "Annual Summary Report: Review for Continued Adequacy of the Performance Assessment, Composite Analysis, and Supporting Documents for the Active Low-Level Waste Disposal Facility at the RWMC – FY 2022"	RPT-2079, "Annual Summary Report: Review for Continued Adequacy of the Performance Assessment, Composite Analysis, and Supporting Documents for the ICDF Landfill – FY 2022"
Disposal Authorization Statement (DAS)	Bishop, T., memorandum to R. Provencher, May 22, 2018, "Operating Disposal Authorization Statement for the Remote-Handled Low-Level Waste Disposal Facility Idaho National Environmental Laboratory, Idaho," U.S. DOE-NE, May 22, 2018	Marcinowski, F., memorandum to E. Sellers, January 30, 2008, "Revision of the Disposal Authorization Statement for the Idaho National Laboratory Active Low-Level Waste Disposal Facility within the Radioactive Waste Management Complex," CCN 323845	Marcinowski, F., memorandum to R. Provencher, April 7, 2011, "Revision of the Disposal Authorization Statement for the Idaho Comprehensive Environmental Response, Compensation, and Liability Act Disposal Facility," CCN 311791

2.3 Environmental and Energy Justice

The DOE defines environmental justice (EJ) as the fair treatment and meaningful involvement of all people, regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies (energy.gov). Several executive orders require federal departments to address EJ: EO 12898*, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, Section 1-1; EO 14008, *Tackling the Climate Crisis at Home and Abroad*, Section 219; and EO 14057, *Catalyzing Clean Energy Industries and Jobs Through Federal Sustainability*, Section 402.

Additionally, the federal government established the Justice40 Initiative with a goal that 40 percent of the overall benefits of certain federal investments flow to disadvantaged communities, which have been marginalized, underserved, and overburdened by pollution. The seven categories of investment include climate change, clean energy and energy efficiency, clean transit, affordable and sustainable housing, training and workforce development, remediation and reduction of legacy pollution, and the development of critical clean water and wastewater infrastructure. Through the Inflation Reduction Act, Bipartisan Infrastructure Law, and the American Rescue Plan, federal agencies are making historic levels of investment to advance EJ.

To aid in the identification and tracking of these disadvantaged communities, the President's Council on Environmental Quality has developed the Climate and Economic Justice Screening Tool (CEJST). The tool identifies U.S. communities that have faced historic injustices and have been overburdened and underserved. This includes federally recognized tribes, including Alaska Native Villages. CEJST contains an interactive map tied to several datasets and uses established thresholds to determine if census tracts meet the definition of a disadvantaged community. The eight categories for burden indicators include: climate change, energy, health, housing, legacy pollution, transportation, water, and wastewater, and workforce development. Additionally, the categories must be at or above the threshold for an associated socioeconomic burden to be highlighted as a disadvantaged community. The CEJST has identified several tracts within the Idaho counties of Bingham, Clark, Butte, and Jefferson as disadvantaged. CEJST also identifies the entirety of the Fort Hall Indian Reservation as a disadvantaged community.

2.3.1 Initiatives

The INL Site established an Environmental Justice Program (EJP) in 2021. The INL Site's EJP recognizes that communities across the globe will be tackling similar challenges in the transition to clean energy. The INL Site aspires to be an EJ leader, setting an example of how to incorporate multiple voices and viewpoints in efforts to ensure a just energy transition inclusive of EJ priorities and community engagement. The program focuses on the sustainable stewardship of natural resources through relationships between humans and environmental systems.

To that end, the INL Site and EJP have worked diligently to incorporate Indigenous and Traditional Ecological Knowledge (ITEK) into laboratory policies, procedures, and practices. ITEK is a repository of natural and ecological knowledge refined through thousands of years of tribal stewardship. ITEK-informed decision making is a federal priority and is recognized as one of the many important bodies of knowledge that contributes to the scientific, technical, social, and economic advancements of the U.S. and our understanding of the natural world. ITEK-informed science and decision making will be essential as the nation navigates climate change and energy transition. These global challenges demand disparate knowledge and solutions to inform and work cohesively with the scientific process toward a sustainable future.

DOE-ID established a Working Agreement with the Shoshone-Bannock Tribes in 1992 that was later developed into an Agreement-In-Principle or AIP. DOE-ID and the Tribes have negotiated multiple five-year AIPs since that initial Working Agreement, the latest of which was signed in September 2022 (https://idweb.id.doe.lcl/IDMSOther/PDF/AIP_Signed.pdf). The AIP is designed to promote increased interaction and cooperation on issues of mutual concern. This AIP reflects the understanding and commitment between the parties to increase the tribes' level of assurance that activities conducted at the INL Site protect the health, safety, environment, and cultural resources and address tribal interests in DOE-administered programs. It is applicable to actions and operations of DOE-ID and its contractors on the lands of the INL Site that affect original ancestral territory and tribal lands. DOE-ID considers the AIP as an important mechanism through which environmental and energy justice matters are addressed. Annual funding from DOE-ID through Cooperative Agreements support the Tribal DOE and Office of Emergency Management programs.

The INL Site established a Memorandum of Understanding with the Shoshone-Bannock School District #537 and collaborated closely with the tribes to create meaningful education and career pathways for tribal students. This Memorandum of Understanding creates a place-based, culturally responsive program designed to both bring opportunities to tribal schools and bring students to the laboratory for work-based learning. The K–12 Education team assisted faculty and administration to design culturally responsive teaching and learning through project-based, place-based and service-learning approaches as they work towards science, technology, engineering, and mathematics (STEM) school designation. At the request of a tribal elder, students received a valuable cultural lesson making a *bodo'* (stick), which is traditionally used to dig up bulbs harvested on tribal lands.

First-year coursework was successfully designed and delivered in both the industrial mechanics and construction trades pathways. Shoshone-Bannock High School Career technical students studying either industrial mechanics or construction trades were eligible to participate in a six-week paid summer internship at the INL Site, working under the supervision of instructors and safety personnel through the INL Site Future Corps Program. In 2022 the first cohort of high school students for the Work-Based Learning Program spent six weeks working onsite with mentors from INL Site's Facilities and Site Services and MFC directorates to explore trades, crafts, fabrication, and operations. The coursework and Work-Based Learning Program prepares students with the skills and experience necessary for entry-level trades and crafts positions at the INL Site.

The INL Site K–12 Education team collaborated with the lab's INL Site's Cultural Resource Management Office to sponsor Earth Day activities for every age group, including an art contest, a traditional native ceremony, a cultural resource tour of the Middle Butte Cave, and a Shoshone-Bannock-led dancing exhibition at the lab's Central Facilities Area for nearly 80 Shoshone-Bannock Tribal members and students. The INL Ste also held an event at Chief Tahgee Elementary Academy in Fort Hall with hands-on activities for students. Nearly 1,800 Earth Day STEM learning kits were distributed to local and regional classrooms (Figure 2-1).

The INL Site's K–12 Education team hosted community STEM nights at all Shoshone-Bannock lodges and at the Shoshone-Bannock High School on the Fort Hall Indian Reservation for students and their families with interactive STEM learning activities.

The DOE Idaho Cleanup Project (DOE-ICP) is working towards the end state and long-term stewardship (LTS) of the INL Site. It is commonly accepted amongst DOE, tribes, and stakeholders that LTS is the actions that survey/monitor and maintain Land Use Controls and ensures the protection of human and health and the environment is accomplished in perpetuity. In FY 2022, DOE-ICP provided funding for the Shoshone-Bannock Tribal DOE and Air Quality Program and Heritage Tribal Office cultural resources program involvement in LTS activities to develop and implement a Tribal LTS Program on the INL Site. The Tribal LTS Program will work to integrate culturally based knowledge and principles into existing ICP LTS plans and activities. The tribal LTS Program will form a "Tribal LTS Collaborative Group" to ensure the Tribes' goals are implemented in coordination with the Fort Hall Business Council, Tribal Departments, and the DOE-ICP.

Figure 2-1. Students from the Shoshone-Bannock Tribes discussing salmon migration with INL staff.

The DOE-ID and INL Site evaluate the potential for EJ matters as part of the review processes implemented to identify potential environmental impacts from all proposed federal actions routinely as part of the NEPA compliance program. Consideration of EJ in NEPA analysis is driven by EO 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," and is further supported by EO 14008. The EOs effectively direct federal agencies to identify disproportionately high and adverse human health or environmental effects of federal programs, policies, and activities on minority populations and low-income populations and to take action to address such impacts. Although EJ has been a part of the INL Site NEPA processes since President Clinton signed the EO 12898 in 1994, the INL Site's NEPA team and the EJ program have made significant efforts in recent months to become a leader in EJ within the national laboratory system.

In the sustainability realm, the DOE Bioenergy Technologies Office (BETO), Argonne National Laboratory, and the INL Site K–12 Education Team created a bioenergy toolkit for educators as part of the Bioenergy Research and Education BRIDGES project. The toolkit translates DOE scientific bioenergy research to the classroom, providing equitable access to high quality learning materials and easing the transition from academics to industry, as part of a workforce development and diversity, equity, and inclusion initiative. The INL Site designed and field tested two case studies aligned to the laboratory's Bioenergy Science and Technology portfolio and industry needs, called "Regional Feedstocks: Are They the Answer to Achieving Net Zero?" and "Solid Waste to Energy: Traditional Ecology and Environmental Justice." The case studies draw inspiration from BETO science and technology research for long-term adaptation, resiliency, and sustainable practices and policies for historically marginalized communities across the United States. BRIDGES is built on a framework that allows for place-based learning and culturally responsive teaching, supporting diversity, equity, and inclusion initiative.

2.4 INL Site Agreements

DOE-ID has three major site agreements that contain regulatory commitments and milestones. These major site agreements are known as the Site Treatment Plan (STP), the Idaho Settlement Agreement (ISA), and the Notice of Noncompliance/Consent Order (NON/CO).

The Federal Facility Compliance Act of 1992 requires the preparation of site treatment plans for the treatment of mixed waste stored or generated at DOE facilities. Mixed waste contains both hazardous and radioactive components. The Federal Facility Compliance Act Consent Order and STP was finalized and signed by the state of Idaho on November 1, 1995, and is updated annually (DEQ 1995). This plan outlines DOE-ID's proposed treatment strategy for the mixed waste streams, called the backlog, and identifies onsite and offsite mixed low-level waste treatment capabilities.

During 2022, DOE-ID completed four STP milestones including two milestones associated with the treatment of remote-handled waste, one certification milestones of original volume TRU-contaminated contact-handled waste, and the treatment of sludge contaminated waste. DOE-ID made a request to the Idaho DEQ to extend milestones associated with the start-up of the IWTU and treatment of sodium bearing waste, which the state approved in October of 2022.

On October 16, 1995, DOE-ID, the U.S. Navy, and the Idaho DEQ entered into an agreement (also known as ISA) that guides management of Spent Nuclear Fuel (SNF), high-level waste, and TRU waste at the INL Site. The agreement (DOE 1995) limits shipments of DOE-ID and Naval SNF into the state and sets milestones for shipments of SNF and radioactive waste out of the state.

The ISA, as related to requirements found in the Agreement to Implement, dated May 25, 2006, required the exhumation of transuranic waste from the SDA at the RWMC. The DOE and the ICP workforce safely completed the required 5.69-acre exhumation and removal of associated targeted waste ahead of the regulatory milestone due date.

The STP and the ISA required DOE-ID to process and ship all covered waste out of Idaho by December 31, 2018, respectively, stored as TRU waste on the INL Site in 1995, when the agreements were signed. The estimated volume of that waste was 65,000 m^3 (85,016 yd^3). This milestone was not achieved; however, revised STP milestones were agreed upon with the Idaho DEQ; an addendum to the ISA was signed on November 6, 2019, to address the milestone.

As of December 31, 2022, a total of 61,508 m^3 (80,449 yd^3) of original volume TRU-contaminated waste had been processed (i.e., shipped or certified for disposal to Waste Isolation Pilot Plant [WIPP]). DOE-ID completed certification of 25% of the original volume TRU contaminated waste remaining inventory to be certified for shipment and disposal at WIPP. DOE-ID made 150 shipments of ISA TRU waste to WIPP in 2022, comprised of 148 shipments of legacy TRU waste and two shipments of buried TRU.

The ICP contractor manages and operates several projects to facilitate the disposition of radioactive waste as required by the ISA and STP. The Advanced Mixed Waste Treatment Project performs retrieval, characterization, treatment, packaging, and shipment of TRU waste currently stored at the INL Site. Most of the waste processed at the Advanced Mixed Waste Treatment Project resulted from the manufacture of nuclear components at DOE's Rocky Flats Plant in Colorado. This waste is contaminated with TRU radioactive elements (primarily plutonium).

The final agreement, the NON/CO and recent modification, in conjunction with the STP, requires the treatment of sodium-bearing waste to be stored at the INTEC Tank Farm at the IWTU. To meet the milestones in the NON/CO and STP, DOE-ID and its ICP contractor continued their methodical approach to start up the IWTU, which is designed to process the remaining 3,407,000 L (900,000 gal) of liquid waste stored at INTEC. This waste is stored in three stainless steel underground tanks, and a fourth is always kept empty as a spare. All four tanks will be closed in compliance with hazardous waste regulations. A total of 11 other liquid storage tanks have been emptied, cleaned, and closed. The waste was originally scheduled to begin processing in 2012, but several technical problems have delayed IWTU.

The IWTU completed a facility outage implementing needed facility modifications in preparation for supporting sustained radiological waste treatment operations in July 2021. Following successful completion of readiness verification activities, the IWTU commenced a final confirmatory run-on simulant waste feed in late 2021. Technical challenges delayed completion of the final confirmatory run until mid-2022. These issues were adequately resolved, and the facility re-commenced its test run in May. The facility successfully completed the final confirmatory run-in late July 2022 along with a final round of readiness assessments for radiological operations. The facility processed 137,000 gallons of simulated waste over 65 days of continuous operation filling 125 product canisters. The facility shutdown and entered a planned outage to inspect process vessels/components, conduct maintenance and make minor modifications which concluded in November. The facility-initiated plant start-up for simulant testing in late 2022 with the intent to transition into radiological waste treatment operations. Radiological operations were targeted to begin in early calendar year 2023. The facility initiated a controlled shutdown in late December 2022 to investigate and repair an observed solids leak in a canister fill cell.

2.5 Low-Level and Mixed Radioactive Waste

In 2022, approximately 994 m^3 (1,300 yd^3) of mixed low-level waste and 360 m^3 (471 yd^3) of low-level waste was shipped off the INL Site for treatment, disposal, or both, by the ICP contractor. In 2022, no low-level waste was disposed of at the SDA (Figure 2-2).

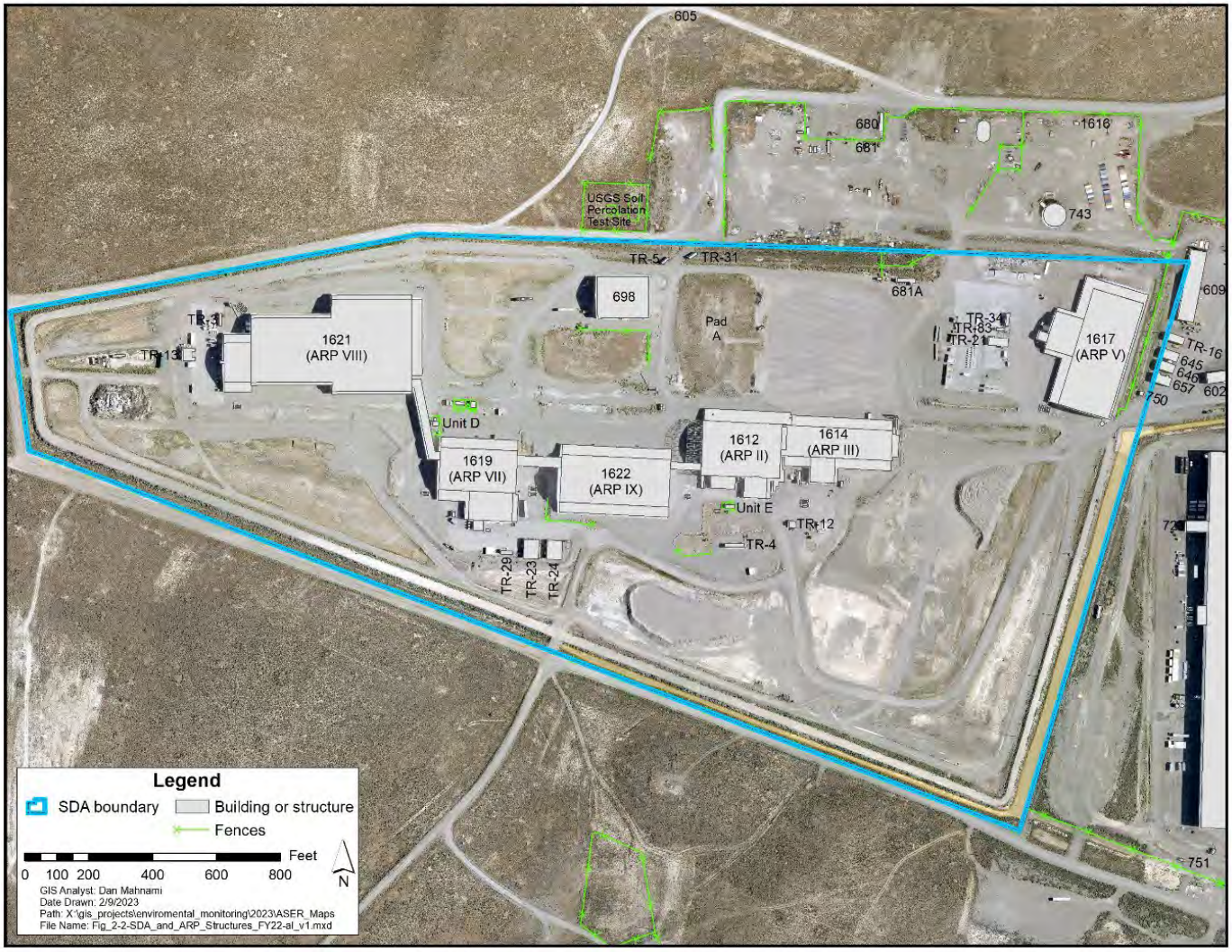

Figure 2-2. Radioactive Waste Management Complex Subsurface Disposal Area (2022).

2.5.1 Spent Nuclear Fuel

SNF is nuclear fuel that has been withdrawn from a nuclear reactor following irradiation and the constituent elements have not been separated. SNF contains unreacted uranium and radioactive fission products. Because of its radioactivity (primarily from gamma rays), it must be properly shielded. DOE-ID's SNF is from the development of nuclear energy technology (including foreign and domestic research reactors), national defense, and other programmatic missions. At the INL Site, SNF is managed by Idaho Energy Coalition, the ICP contractor at INTEC, the Naval Nuclear Propulsion Program at the Naval Reactors Facility, and the INL contractor at the Advanced Test Reactor Complex and MFC.

The ISA put milestones into place for the management of SNF at the INL Site:

- DOE-ID shall complete the transfer of spent fuel from wet storage facilities by December 31, 2023 (Paragraph E.8)

- DOE-ID shall remove all spent fuel, including naval spent fuel and Three Mile Island spent fuel, from Idaho by January 1, 2035 (Paragraph C.1).

Meeting these remaining milestones comprise the major objectives of the SNF program.

2.6 Release and Inventory Reporting at the INL Site

2.6.1 Spills and Releases

There were no reportable spills for INL or ICP in 2022.

2.6.2 Unplanned Releases

INL and ICP had no unplanned release of a hazardous substance that required notification to the regulatory agencies for 2022.

2.7 Environmental Permits

Table 2-5 presents the complete list of all federal and state permits active during 2022 for INL Site operations. This table includes those pertaining to air emissions, groundwater, surface water, RCRA, and ecological.

Table 2-5. Environmental permits for the INL Site (2022).

PERMIT TYPE	ACTIVE PERMITS
AIR EMISSIONS	
Synthetic Minor	1
ECOLOGICAL	
Migratory Bird Treaty Act Special Purpose Permit	2
Wildlife Collection/Banding/Possession Permit	2
GROUNDWATER	
Injection Well	2
Well Construction	3[a]
RESOURCE CONSERVATION AND RECOVERY ACT	
Part A (Interim Status)	2[b]
Part B	7[b]
RECYCLED WATER	
Reuse Permits	3
SURFACE WATER	
Industrial Wastewater Acceptance	1
TOXIC SUBSTANCES CONTROL ACT	
Risk-Based Disposal Approval[c]	4

a. Construction of wells USGS-151, and USGS-152 have been cored and continued construction is planned for FY 23-24. Borehole USGS-150 is planned for abandonment in FY 23-24. Permits are only required for construction of wells, not operation.

b. Part A interim status units are those units with Part A permit applications (interim status) that have not been RCRA closed. Partial Part B permits include the Part A application and the Part B application. The Part A addresses each of the permitted units in the Part B, and the Part B includes specific details and permit operating requirements. A partial permit that includes the unit-specific Part A and B is considered a RCRA partial Part B permit. There are seven RCRA partial Part B permits for the INL Site.

c. Risk-Based Disposal Approvals are permit-like documents granted by the EPA.

2.8 References

10 CFR 830, 2023, Subpart A, "Quality Assurance Requirements," Code of Federal Regulations, Office of the Federal Register, National Archives and Records Administration, https://www.ecfr.gov/cgi-bin/text-idx?SID=074233709c29153b42bc0e7e25e68307&mc=true&node=sp40.10.61.a&rgn=div6.

10 CFR 1021, 2023, "National Environmental Policy Act Implementing Procedures," Code of Federal Regulations, Office of the Federal Register, National Archives and Records Administration, https://www.energy.gov/sites/prod/files/10CFRPart1021.pdf.

10 CFR 1022, 2023, "Compliance with Floodplain and Wetland Environmental Review Requirements," Code of Federal Regulations, Office of the Federal Register, National Archives and Records Administration, https://www.energy.gov/sites/prod/files/10CFRPart1022.pdf.

36 CFR 79, 2023, "Curation of Federally Owned and Administered Archeological Collections," Code of Federal Regulations, Office of the Federal Register, National Archives and Records Administration, https://www.ecfr.gov/current/title-36/chapter-I/part-79.

36 CFR 800, 2023, "Protection of Historic Properties," Code of Federal Regulations, Office of the Federal Register, National Archives and Records Administration, https://www.ecfr.gov/current/title-36/chapter-VIII/part-800?toc=1.

40 CFR 50, 2023, "National Primary and Secondary Ambient Air Quality Standards," Code of Federal Regulations, Office of the Federal Register, National Archives and Records Administration, https://www.ecfr.gov/current/title-40/chapter-I/subchapter-C/part-50?toc=1.

40 CFR 61, Subpart H, 2023, "National Emission Standards for Emissions of Radionuclides Other Than Radon from Department of Energy Facilities," Code of Federal Regulations, Office of the Federal Register, National Archives and Records Administration, https://www.ecfr.gov/cgi-bin/text-idx?SID=11c3269295aab799456dcba14addb85a&mc=true&node=pt40.10.61& rgn=div5#ap40.10.61_1359.c.

40 CFR 84, 2023, "Phasedown of Hydrofluorocarbons," Code of Federal Regulations, Office of the Federal Register, National Archives and Records Administration, https://www.ecfr.gov/current/title-40/chapter-I/subchapter-C/part-84.

40 CFR 141, 2023, "National Primary Drinking Water Regulations," Code of Federal Regulations, Office of the Federal Register, National Archives and Records Administration, https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-141.

40 CFR 142, 2023, "National Primary Drinking Water Regulations Implementation," Code of Federal Regulations, Office of the Federal Register, National Archives and Records Administration, https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-142.

40 CFR 143, 2023, "National Primary Drinking Water Standards," Code of Federal Regulations, Office of the Federal Register, National Archives and Records Administration, https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-143.

40 CFR 150–189, 2023, "Pesticide Program," Code of Federal Regulations, Office of the Federal Register, National Archives and Records Administration, https://www.ecfr.gov/current/title-40/chapter-I/subchapter-E.

40 CFR 262, 2023, "Standard Applicable to Generators of Hazardous Waste," Code of Federal Regulations, Office of the Federal Register, National Archives and Records Administration, https://www.ecfr.gov/current/title-40/chapter-I/subchapter-I/part-262.

40 CFR 263, 2023, "Standards Applicable to Transporters of Hazardous Waste," Code of Federal Regulations, Office of the Federal Register, National Archives and Records Administration, https://www.ecfr.gov/current/title-40/chapter-I/subchapter-I/part-263.

40 CFR 264, 2023, "Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities," Code of Federal Regulations, Office of the Federal Register, National Archives and Records Administration, https://www.ecfr.gov/current/title-40/chapter-I/subchapter-I/part-264?toc=1.

40 CFR 265, 2023, "Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities," Code of Federal Regulations, Office of the Federal Register, National Archives and Records Administration, https://www.ecfr.gov/current/title-40/chapter-I/subchapter-I/part-265?toc=1.

40 CFR 266, 2023, "Standards for the Management of Specific Hazardous Wastes and Specific Types of Hazardous Waste Management Units," Code of Federal Regulations, Office of the Federal Register, National Archives and Records Administration, https://www.ecfr.gov/current/title-40/chapter-I/subchapter-I/part-266.

40 CFR 267, 2023, "Standard for Owners and Operators of Hazardous Waste Facilities Operating Under a Standardized Permit," Code of Federal Regulations, Office of the Federal Register, National Archives and Records Administration, https://www.ecfr.gov/current/title-40/chapter-I/subchapter-I/part-267.

40 CFR 268, 2023, "Land Disposal Restrictions," Code of Federal Regulations, Office of the Federal Register, National Archives and Records Administration, https://www.ecfr.gov/current/title-40/chapter-I/subchapter-I/part-268.

40 CFR 270, 2023, "EPA Administered Permit Programs: The Hazardous Waste Permit Program," Code of Federal Regulations, Office of the Federal Register, National Archives and Records Administration, https://www.ecfr.gov/current/title-40/chapter-I/subchapter-I/part-270.

40 CFR 270.13, 2023, "Contents of Part A of the Permit Application," Code of Federal Regulations, Office of the Federal Register, National Archives and Records Administration, https://ecfr.io/Title-40/Section-270.13.

40 CFR 273, 2023, "Standards for Universal Waste Management," Code of Federal Regulations, Office of the Federal Register, National Archives and Records Administration, https://www.ecfr.gov/current/title-40/chapter-I/subchapter-I/part-273.

40 CFR 279, 2023, "Standards for the Management of Used Oil," Code of Federal Regulations, Office of the Federal Register, National Archives and Records Administration, https://www.ecfr.gov/current/title-40/chapter-I/subchapter-I/part-279.

40 CFR 300, 2023, "National Oil and Hazardous Substances Pollutant Contingency Plan," Code of Federal Regulations, Office of the Federal Register, National Archives and Records Administration, https://www.ecfr.gov/current/title-40/chapter-I/subchapter-I/part-300.

40 CFR 761, Subpart J, 2023, "General Records and Reports," Code of Federal Regulations, Office of the Federal Register, National Archives and Records Administration, https://www.ecfr.gov/current/title-40/chapter-I/subchapter-R/part-761/subpart-J.

40 CFR 761.20, "Prohibitions and Exceptions," Code of Federal Regulations, Office of the Federal Register, National Archives and Records Administration, https://www.ecfr.gov/current/title-40/chapter-I/subchapter-R/part-761/subpart-B/section-761.20.

40 CFR 1500–1508, 2023, "National Environmental Policy Act (NEPA), Purpose, Policy, and Mandate," Code of Federal Regulations, National Archives and Records Administration, Office of the Federal Register, https://www.energy.gov/sites/prod/files/NEPA-40CFR1500_1508.pdf.

43 CFR 7, 2023, "Protection of Archeological Resources," Code of Federal Regulations, Office of the Federal Register, National Archives and Records Administration, https://www.ecfr.gov/current/title-43/subtitle-A/part-7?toc=1.

50 CFR 17, 2023, "Endangered and Threatened Wildlife and Plants," Code of Federal Regulations, Office of the Federal Register, National Archives and Records Administration, https://www.ecfr.gov/current/title-50/chapter-I/subchapter-B/part-17.

50 CFR 226, 2023, "Designated Critical Habitat," Code of Federal Regulations, Office of the Federal Register, National Archives and Records Administration, https://www.ecfr.gov/current/title-50/chapter-II/subchapter-C/part-226?toc=1.

50 CFR 402, 2023, "Interagency Cooperation – Endangered Species Act of 1973, as Amended," Code of Federal Regulations, Office of the Federal Register, National Archives and Records Administration, https://www.ecfr.gov/current/title-50/chapter-IV/subchapter-A/part-402.

50 CFR 424, 2023, "Listing Endangered and Threatened Species and Designating Critical Habitat," Code of Federal Regulations, Office of the Federal Register, National Archives and Records Administration, https://www.ecfr.gov/current/title-50/chapter-IV/subchapter-A/part-424.

50 CFR 450, "General Provisions," Code of Federal Regulations, Office of the Federal Register, National Archives and Records Administration, https://www.ecfr.gov/current/title-50/chapter-IV/subchapter-C/part-450.

50 CFR 451, "Application Procedure," Code of Federal Regulations, Office of the Federal Register, National Archives and Records Administration, https://www.ecfr.gov/current/title-50/chapter-IV/subchapter-C/part-451.

50 CFR 452, "Consideration of Application Procedure by the Secretary," Code of Federal Regulations, Office of the Federal Register, National Archives and Records Administration, https://www.ecfr.gov/current/title-50/chapter-IV/subchapter-C/part-452.

50 CFR 453, "Endangered Species Committee," Code of Federal Regulations, Office of the Federal Register, National Archives and Records Administration, https://www.ecfr.gov/current/title-50/chapter-IV/subchapter-C/part-453.

42 USC § 2011, 1954, Congressional Declaration of Policy, United States Code, Title 42 – The Public Health and Welfare.

American Indian Religious Freedom Act (1996), 42 USC 1996.

Atomic Energy Act (AEA) of 1954 (42 USC §2011 et seq.). (Amended by the Price-Anderson Act).

Bald and Golden Eagle Protection Act, 1940, Public Law 86-70, Effective June 8, 1940, 92 Stat. 3114.

Bishop, T., memorandum to R. Provencher, May 22, 2018, "Operating Disposal Authorization Statement for the Remote-Handled Low-Level Waste Disposal Facility Idaho National Environmental Laboratory, Idaho," U.S. DOE-NE, May 22, 2018.

Bureau of Reclamation, 2005, Big Lost River Flood Hazard Study, Idaho National Laboratory, Idaho, Report 2005-2.

Clean Air Act (CAA) of 1970 (42 USC § 7401).

Clean Water Act (CWA) of 1972 (the Federal Water Pollution Control Act) (33 USC § 1251).

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, (42 USC §9601). Amended by the Superfund Amendments and Reauthorization Act (SARA).

DEQ, 1995, Federal Facility Compliance Act Consent Order and Site Treatment Plan, (transmittal letter and signed enclosure from Curt Fransen, Idaho Deputy Attorney General, to Brett R. Bowhan, U.S. Department of Energy Idaho Operations Office), Idaho Division of Environmental Quality.

DOE, 1991, "Idaho National Engineering Laboratory ("INEL") Federal Facility Agreement and Consent Order, Administrative Docket Number: 1088-06 120," U.S. Department of Energy, Office of Environmental Management; U.S. Environmental Protection Agency, Region 10; State of Idaho, Department of Health and Welfare.

DOE, 1995, "1995 Settlement Agreement," U.S. Department of Energy, U.S. Department of the Navy, and State of Idaho.

DOE, 2022, "Derived Concentration Technical Standard," DOE-STD-1196-2022, U.S. Department of Energy, December 2022.

DOE and EPA, 1995, "Policy on Decommissioning of Department of Energy Facilities Under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)," KLF-211-95, Rev. 0, U.S. Department of Energy and U.S. Environmental Protection Agency, May 22, 1995.

DOE-ID, 2006, "Composite Analysis for the INEEL CERCLA Disposal Facility Landfill," DOE/NE-ID-10979, U.S. Department of Energy, Idaho Operations Office.

DOE-ID, 2007a, "Record of Decision for Tank Farm Soil and INTEC Groundwater, Operable Unit 3-14," Rev. 0, DOE/ID-11201, U.S. Department of Energy, Idaho Operations Office.

DOE-ID, 2007b, "Performance Assessment for the RWMC Active Low-Level Waste Disposal Facility at the Idaho National Laboratory Site," Rev. 0, DOE/NE-ID-11243, U.S. Department of Energy, Idaho Operations Office.

DOE-ID, 2008a, "Record of Decision for Radioactive Waste Management Complex Operable Unit 7-13/14," Rev. 0, DOE/ID-11359, U.S. Department of Energy Idaho Operations Office.

DOE-ID, 2008b, "Composite Analysis for the RWMC Active Low-Level Waste Disposal Facility at the Idaho National Laboratory," Rev. 0, DOE/NE-ID-11244, U.S. Department of Energy, Idaho Operations Office.

DOE-ID, 2009, "Operable Unit 10-08 Record of Decision for Site-Wide Groundwater, Miscellaneous Sites, and Future Sites," Rev. 1, DOE/ID-11358, U.S. Department of Energy, Idaho Operations Office.

DOE-ID, 2011a, "Interim Completion Report for Phase 2 Operable Unit 7-13/14," Rev. 0, DOE/ID-11436, U.S. Department of Energy Idaho, Operations Office.

DOE-ID, 2011b, "Performance Assessment for the Idaho CERCLA Disposal Facility Landfill," DOE/NE-ID-10978, U.S. Department of Energy, Idaho Operations Office.

DOE-ID, 2012, "ICDF Complex Remedial Action Work Plan," DOE/ID-10984, U.S. Department of Energy Idaho Operations Office.

DOE-ID, 2014, "Post-Record of Decision Groundwater Monitoring and Field Sampling Plan for Operable Unit 10-08," Rev. 0, DOE/ID-11420, U.S. Department of Energy, Idaho Operations Office.

DOE-ID, 2016a, "Idaho National Laboratory Cultural Resource Management Plan," Rev. 6, DOE/ID-10997, U.S. Department of Energy Idaho Operations Office.

DOE-ID, 2016b, "Composite Analysis for the Idaho National Laboratory Remote-Handled Low-Level Waste Disposal Facility," DOE/ID-11422, U.S. Department of Energy Idaho Operations Office.

DOE-ID, 2017a, "Operable Unit 7-13/14 Operations and Maintenance Plan," Rev. 2, DOE/ID-11393, U.S. Department of Energy, Idaho Operations Office.

DOE-ID, 2017b, "INL Site-Wide Institutional Controls, and Operations and Maintenance Plan for CERCLA Response Actions," Rev. 2, DOE/ID-11042, U.S. Department of Energy, Idaho Operations Office.

DOE-ID, 2018a, "ICDF Complex Operational and Monitoring Sampling and Analysis Plan," Rev. 4, DOE/ID-11005, U.S. Department of Energy, Idaho Operations Office.

DOE-ID, 2018b, "Operable Unit 3-14 Tank Farm Soil and INTEC Groundwater Operation and Maintenance Plan," Rev. 4, DOE/ID-11337, U.S. Department of Energy, Idaho Operations Office.

DOE-ID, 2018c, "Operable Unit 3-14 Tank Farm Soil and INTEC Groundwater Long-Term Monitoring Plan," Rev. 3, DOE/ID-11334, U.S. Department of Energy, Idaho Operations Office.

DOE-ID, 2018d, "Performance Assessment for the Idaho National Laboratory Remote-Handled Low-Level Waste Disposal Facility," DOE/ID-11421, U.S. Department of Energy Idaho Operations Office.

DOE-ID, 2019a, "ICDF Complex Groundwater Monitoring Plan," Rev. 7, DOE/ID-10955, U.S. Department of Energy, Idaho Operations Office.

DOE-ID, 2019b, "ICDF Complex Operations and Maintenance Plan," Rev. 10, DOE/ID-11000, U.S. Department of Energy, Idaho Operations Office.

DOE-ID, 2022a, "Site-Wide Institutional Controls and Operations and Maintenance Plan," Rev. 0, DOE/ID-11042, U.S. Department of Energy, Idaho Operations Office.

DOE-ID, 2022b, "ISB Rebound Test Plan for TAN Groundwater Remediation," Rev. 5, DOE/ID-11444,, U.S. Department of Energy, Idaho Operations Office.

DOE-ID, 2022c, "Monitoring Plan for Test Area North, Operable Unit 1-07B," Rev. 5, DOE/ID-11412, U.S. Department of Energy, Idaho Operations Office.

DOE O 231.1B, 2012, "Environmental, Safety, and Health Reporting," Administrative Change 1, U.S. Department of Energy.

DOE O 232.2A, 2017, "Occurrence Reporting and Processing of Operations Information," U.S. Department of Energy.

DOE O 414.1D, Change 2, 2011, "Quality Assurance," U.S. Department of Energy.

DOE O 435.1, 2011, "Radioactive Waste Management," Change 2, U.S. Department of Energy.

DOE O 436.1, 2011, "Departmental Sustainability," U.S. Department of Energy, May 2, 2011.

DOE O 458.1, 2013, "Radiation Protection of the Public and the Environment," Administrative Change 4, U.S. Department of Energy.

DOE Manual 435.1, Change 3, 2021, "Radioactive Waste Management Manual," U.S. Department of Energy.

DOE Policy 451.1, 2017, "National Environmental Policy Act Compliance Program," U.S. Department of Energy.

Emergency Planning and Community Right to-Know-Act (EPCRA) of 1986 (42 USC § 11001 et seq.). (Also known as SARA Title III.)

Endangered Species Act (ESA) of 1973 (16 USC § 1531 et seq.).

Executive Order 11988, 1977, “Floodplain Management.”

Executive Order 11990, 1977, “Protection of Wetlands.”

Executive Order 12580, 1987, “Superfund Implementation,” President Ronald Reagan, January 23, 1987.

Executive Order 12898, 1994, “Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations.”

Executive Order 13007, 1996, “Indian Sacred Sites.”

Executive Order 13112, 1999, “Invasive Species.”

Executive Order 13175, 2000, “Consultation and Coordination with Indian Tribal Governments.”

Executive Order 13186, 2001, “Responsibilities of Federal Agencies to Protect Migratory Birds.”

Executive Order 13287, 2003, “Preserve America.”

Executive Order 13751, 2016, “Safeguarding the Nation from Impacts of Invasive Species.”

Executive Order 13990, 2021, “Protecting Public Health and the Environmental and Restoring Science to Tackle the Climate Crisis.”

Executive Order 14008, 2021, “Tackling the Climate Crisis at Home and Abroad.”

Executive Order 14057, 2021, “Catalyzing Clean Energy Industries and Jobs Through Federal Sustainability.”

Federal Facility Compliance Act 1992, as amended.

Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) (7 USC § 136).

Federal Noxious Weed Act (1974), 7 USC 2801.

Idaho Statute Title 22, Chapter 19, “The Idaho Invasive Species Act of 2008.”

Idaho Statute Title 22, Chapter 24, “Noxious Weeds.”

Idaho Statute Title 22 Chapter 34, “Idaho Pesticides and Chemigation Law.”

Idaho Statute Title 36, Chapter 1, 106 e.5, “Fish and Game Commission.”

IDAPA 02.03.03, 2023, “Rules Governing Pesticide and Chemigation Use and Application,” Idaho Administrative Procedures Act, Idaho Department of Environmental Quality, https://adminrules.idaho.gov/rules/current/02/020609.pdf.

IDAPA 02.06.09, 2023 “Rules Governing Invasive Species and Noxious Weeds,” Idaho Administrative Procedures Act, Idaho Department of Environmental Quality, https://adminrules.idaho.gov/rules/current/02/020609.pdf.

IDAPA 58.01.01, 2023, “Rules for the Control of Air Pollution in Idaho,” Idaho Administrative Procedures Act, Idaho Department of Environmental Quality, https://adminrules.idaho.gov/rules/current/58/580102.pdf.

IDAPA 58.01.02.851, 2023, “Petroleum Release Reporting, Investigation, And Confirmation,” Idaho Administrative Procedures Act, Idaho Department of Environmental Quality, https://adminrules.idaho.gov/rules/current/58/580102.pdf.

IDAPA 58.01.08, 2023, “Idaho Rules for Public Drinking Water Systems,” Idaho Administrative Procedures Act, Idaho Department of Environmental Quality, https://adminrules.idaho.gov/rules/current/58/580108.pdf.

IDAPA 58.01.11, 2023, “Ground Water Quality Rule,” Idaho Administrative Procedures Act, Idaho Department of Environmental Quality, https://adminrules.idaho.gov/rules/current/58/580111.pdf.

IDAPA 58.01.16, 2023, “Wastewater Rules,” Idaho Administrative Procedures Act, Idaho Department of Environmental Quality, https://adminrules.idaho.gov/rules/current/58/580116.pdf.

IDAPA 58.01.17, 2023, “Recycled Water Rules,” Idaho Administrative Procedures Act, Idaho Department of Environmental Quality, https://adminrules.idaho.gov/rules/current/58/580117.pdf.

IDAPA 58.01.25, 2023, "Rules Regulating the Idaho Pollutant Discharge Elimination System Program," Idaho Administrative Procedures Act, Idaho Department of Environmental Quality, https://adminrules.idaho.gov/rules/current/58/580125.pdf.

IDEQ, 2021, "Advanced Mixed Wast Project (AMWTP) Hazardous Waste Management Act (HWMA)/Resource Conservation and Recovery Act (RCRA) Transuranic Storage Area (TSA) Interim Status (IS) Document," EPA ID No. ID4890008952, Idaho Department of Environmental Quality.

INL 2022, "Interface Agreement between INL, ICP, and NRF contractors for Environmental Reporting," CCN 246686 (IAG-681), Idaho National Laboratory, Idaho Falls, ID.

INL 2023, "Annual Summary Report for the Remote-Handled Low-Level Waste Disposal Facility—FY 2022," INL/RPT-23-70876, Idaho National Laboratory.

MacRae, J., memorandum to A. Nebeker, September 15, 2022, "Contract No. 89303321DEM000061 – Declaration of Physical Completion of Performance Based Incentive (PBI) 2.1.04 – Closure Preparations for Active Low-Level Waste Disposal Facility (ALLWDF) – Complete Closure Plan RPT-576, Revision 4, Closure Activities for ALLWDF – FY 2022," CCN 329703.

Marcinowski, F., memorandum to E. Sellers, January 30, 2008, "Revision of the Disposal Authorization Statement for the Idaho National Laboratory Active Low-Level Waste Disposal Facility within the Radioactive Waste Management Complex," CCN 323845.

Marcinowski, F., memorandum to R. Provencher, April 7, 2011, "Revision of the Disposal Authorization Statement for the Idaho Comprehensive Environmental Response, Compensation, and Liability Act Disposal Facility," CCN 311791.

Migratory Bird Treaty Act (MBTA) of 1918, as amended (16 USC § 703 et seq.).

National Environmental Policy Act (NEPA) of 1969 (42 USC § 4321).

National Historic Preservation Act of 1966, as amended (16 USC § 470 et seq.).

Native American Graves Protection and Repatriation Act (1990), as amended, 25 USC 3001-3013.

PLN-3370, 2012, "Preliminary Closure Plan for the Idaho National Laboratory Remote-Handled Low-Level Waste Disposal Facility," Idaho National Laboratory.

PLN-3368, 2021, "Maintenance Plan for the Remote-Handled Low-Level Waste Disposal Facility Performance Assessment and Composite Analysis," Idaho National Laboratory.

PDD-234, 2020, "Waste Management Program," Rev. 3, Idaho Cleanup Project Core.

PDD-17000, "Waste Management Program," Rev. 15, Idaho National Laboratory.

Religious Freedom Restoration Act (1993), 42 USC §200bb-200bb4.

Resource Conservation and Recovery Act (RCRA) of 1976 (42 USC § 6901 et seq.).

RPT-431, 2019, "Performance Assessment and Composite Analysis Maintenance Plan for the RWMC Active Low-Level Waste Disposal Facility," Rev. 2, Idaho Cleanup Project.

RPT-576, 2016, "Interim Closure Plan for the RWMC Active Low-level Waste Disposal Facility at the Idaho National Laboratory Site," Rev. 4, Idaho Cleanup Project.

RPT-791, 2019, "Performance Assessment and Composite Analysis Maintenance Plan for the Idaho CERCLA Disposal Facility Landfill," Rev. 1, Idaho Cleanup Project.

RPT-1904, 2022, "Soil Vapor Extraction Rebound Test Report for Operable Unit 7-13/14," Rev. 1, Idaho Cleanup Project.

RPT-2079, "Annual Summary Report: Review for Continued Adequacy of the Performance Assessment, Composite Analysis, and Supporting Documents for the ICDF Landfill – FY 2022," Rev. 0, Idaho Cleanup Project.

RPT-2080, "Annual Summary Report: Review for Continued Adequacy of the Performance Assessment, Composite Analysis, and Supporting Documents for the Active Low-Level Waste Disposal Facility at the RWMC – FY 2022," Rev. 0, Idaho Cleanup Project.

Safe Drinking Water Act (SDWA) of 1974 (42 USC § 300f).

The Archaeological Resources Protection Act (1979), 16 USC §470aa-470mm.

Toxic Substances Control Act (TSCA) of 1976 (15 USC § 2601 et seq.).

U.S. District Court, 2008, "Agreement to Implement U.S. District Court Order Dated May 25, 2006, Between the State of Idaho and DOE," effective July 3, 2008.

USGS, 1997, "Simulation of Water-Surface Elevations for a Hypothetical 100-Year Peak Flow in Birch Creek at the Idaho National Engineering and Environmental Laboratory, Idaho, U.S. Geological Survey Water-Resources Investigation Report 97-4083," DOE/ID-22138, U.S. Geological Survey.