

# Annual Environmental Cleanup Report 2022

## Submitted to:

Governor Kate Brown

Oregon Legislative Assembly

Oregon Environmental Quality Commission

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## Environmental Cleanup Program

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DEQ is a leader in restoring, maintaining and enhancing the quality of Oregon's air, land and water.



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# Executive Summary

The Oregon Department of Environmental Quality's Environmental Cleanup program protects human health and the environment by identifying, investigating, and remediating sites contaminated with hazardous substances. The program's objective is to improve sites to the point where no further cleanup action is necessary and site conditions are protective for current and future use - as inexpensively and quickly as possible.

This annual report to the Legislature describes the Environmental Cleanup program's efforts to assess, investigate, and clean up contaminated lands and help return them to productive use. Oregon Revised Statute 465.235 mandates this annual report to the Oregon Legislature, the Governor, and Oregon's Environmental Quality Commission. This report includes:

- A description of fiscal year 2021 statewide cleanup program activities and key statistics.
- A summary of Cleanup program highlights including targeted policy and program development; cleanup action summaries for sites throughout Oregon; voluntary cleanup progress; brownfields work and milestones; Prospective Purchaser Agreements; Industrial Orphan funding needs; and continuing to expand use of the Solid Waste Orphan Site Account (SWOSA).
- Cleanup program milestones and projections.
- A description of the program's plans to modernize.

Despite the ongoing COVID-19 pandemic, DEQ's Cleanup program had many successes in fiscal year 2021. These successes include targeted policy and program development, completion of numerous projects statewide, and oversight of voluntary cleanups and brownfield redevelopments. DEQ continues to return contaminated and unusable lands to productive use by helping developers, municipalities and nonprofit organizations purchase contaminated land through Prospective Purchaser Agreements.

To complement these successes, DEQ has been working hard to modernize the Environmental Cleanup program to adapt to changing circumstances. Originally modeled after EPA's Superfund Program, DEQ's Cleanup program once focused its efforts on site discovery and issuing orders to compel responsible parties to complete cleanups through a formal process. Today, much of the program's work involves parties who voluntarily seek DEQ's oversight and associated liability protection as they clean sites for redevelopment. As Oregon's population grows and its industries evolve, DEQ's Environmental Cleanup program faces new opportunities and new challenges. Former industrial sites statewide are being redeveloped for new purposes, and DEQ often works on smaller sites that require quick turnaround due to real estate transaction needs. Chemicals of emerging concern may require DEQ to change policies and evaluate new technologies in the years ahead. Meanwhile, DEQ is called to meaningfully engage residents in neighboring communities while it performs essential oversight of environmental cleanup.

Over the past two decades, revenue sources have declined while DEQ adjusted programs and responsibilities to meet changing needs and expectations. The program relies on a complex variety of revenue sources, including cost recovery, fees, federal grants, and bond sales. The program's internal systems and funding structure have remained largely the same since its inception over 30 years ago. The program is operating with fewer filled positions, despite greater pressures on staff and management.

## 1. About the Environmental Cleanup Program

Oregon's Environmental Cleanup program:

- Discovers, evaluates and prioritizes sites contaminated with hazardous substances for further action.
- Oversees the investigation and cleanup of sites presenting significant risks to human health or the environment through voluntary cleanup, or through enforceable agreements for high priority sites.
- Assists property owners and communities in restoring productive use of contaminated sites using brownfield technical assistance and prospective purchaser agreements.

- Leads the investigations and cleanups of orphan sites in cases where the responsible party is unknown, unwilling, or unable to complete necessary cleanup actions.

## Oregon's Cleanup Process

DEQ screens sites where hazardous substances may have been released to determine the need and priority for further action. A preliminary assessment may be conducted to investigate the presence and extent of contamination, which may involve collection of samples for laboratory testing. In the event of an emergency, a removal may be needed to immediately stabilize the site and prevent contamination.

Sites known to be contaminated proceed through a two-step investigation process to determine how (or whether) they should be cleaned up. The first step is a remedial investigation aiming to determine the full nature and extent of the contamination, evaluating risks to human health and the environment from exposure, and determining a need for a cleanup. The second step is a feasibility study evaluating various site cleanup options for sites posing unacceptable risk. Based on this information, DEQ determines what needs to be cleaned up and how it should be done.

When the necessary cleanup is relatively straightforward and simple, an initial removal action may be all that is required. However, if the cleanup is more difficult and complex, DEQ may issue a formal cleanup decision called a record of decision (ROD) after a public comment period. The resulting cleanup is called a remedial action. In addition to (or instead of) removing or treating the contamination, DEQ may install an engineering control (such as capping or fencing) to isolate the contamination or pursue an institutional control (such as administrative or legal limitation). These protective controls work to limit future activities at the site so that people and animals are not exposed to contamination.

A site receives a No Further Action (NFA) designation when DEQ determines that the site poses no significant threat to human health or the environment. This may occur at any point during the investigation and cleanup process.

## Routes to Cleanup in Oregon

DEQ has several options for owners and operators of contaminated property to move through the investigation and cleanup process. The most common option is voluntary cleanup. Property owners seeking a signoff from DEQ agree to have DEQ oversee their projects to ensure that their work meets regulatory requirements. Parties can choose the standard voluntary cleanup approach or independent cleanup, depending on the project's complexity and amount of oversight needed. Parties intending to purchase property with existing contamination may enter into a Prospective Purchaser Agreement with DEQ prior to purchase that describes the cleanup actions they will perform at the property in exchange for protections from liability from DEQ and third parties for any remaining contamination.

DEQ also discovers contaminated properties through site assessment. DEQ learns about potential contamination from complaints, unsolicited reports and other DEQ programs or government agencies, in addition to conducting its own inquiries. DEQ evaluates and ranks sites based on their known or potential threats. Responsible parties are encouraged to address site contamination through voluntary cleanup.

DEQ will require parties with high priority sites to conduct investigation and cleanup under the terms of a legally enforceable order.

DEQ may designate the site an orphan and conduct the cleanup of high priority sites using limited, dedicated orphan funds where responsible parties are unknown, unable or unwilling to perform a cleanup.

DEQ may also address qualifying contaminated dry cleaner sites through a separate account funded by fees paid by eligible dry cleaning facility owner/operators. However, funds are very limited, and DEQ is re-evaluating the viability of the program.

Other types of cleanups are conducted under separate statutory authority. For example, DEQ’s Cleanup program addresses petroleum releases from underground storage tanks while meeting additional federal and state requirements. Additionally, DEQ’s Emergency Response program ensures new hazardous material spills are immediately cleaned up by the responsible party.

## 2. Program Highlights, Fiscal Year 2021

DEQ’s Environmental Cleanup program had many successes in fiscal year 2021 but was impacted along with the rest of the State by the ongoing global pandemic, substantial social changes, and staff shortages. The program did continue its core work, shifting quickly to teleworking and other adjustments required by the pandemic. Progress was made on targeted policy and program development; DEQ-lead cleanup actions for sites throughout Oregon; voluntary cleanup; brownfields work and milestones; Prospective Purchaser Agreements; Industrial Orphan funding needs; and continuing to expand use of the Solid Waste Orphan Site Account (SWOSA).

### Policy and Program Development

#### Fiscal Framework Project

DEQ evaluated the Cleanup program’s funding structure and developed a summary of program funding areas, a timeline of significant program milestones, and initial recommendations on how to improve program financial stability in the medium and long term. Based on these findings, the program developed standard rates for streamlined invoicing, which will allow a transition to better overall financial tools and processes in upcoming years. This will allow more accurate budget assessments in upcoming strategic planning initiatives as described in Section 4 of this report.

#### Solid Waste Orphan Site Account Program

The Solid Waste Orphan Site Account (SWOSA) program helps pay for removal or remedial action of hazardous substances at qualifying “orphaned” domestic solid waste disposal sites. Generally, there are two kinds of sites that qualify for SWOSA funding: (1) a local government owned or operated domestic solid waste disposal site (ex: a municipal landfill), or (2) a privately owned or operated domestic solid waste disposal site for which DEQ determines parties responsible for contamination are unknown, unwilling, or unable to undertake removal or remedial action (ex: a privately-owned abandoned landfill or an illegal dump site).

In an effort to bolster the SWOSA program, the 2021 Legislature approved making two limited duration SWOSA-focused positions permanent within the Cleanup program. DEQ now retains a SWOSA Site Assessment Project Manager and a SWOSA Procurement and Contract Specialist dedicated to implementing the SWOSA program. These staff have been instrumental in developing the SWOSA Program Manual – a policy guidance document used to help manage SWOSA sites – with the effect of increasing the number of active SWOSA-funded cleanup project sites. Additionally, DEQ has developed a site ranking tool to prioritize abandoned sites for potential SWOSA funding. The ranking tool considers public health, the environment, and environmental justice factors to rank sites based on priority. After funding a program record number of orphan cleanups, the SWOSA program is now poised to fund a statewide site assessment initiative to address backlogged cleanup sites.

#### Heating Oil Tank Program

New policy development is planned for next fiscal year to address increasing discoveries of oil impacts to old building foundations and concern about ongoing leaks from aging active tank infrastructure. Project activity levels in 2021 remained lower than 2019, limiting DEQ’s ability to increase program development work this year.

### **Internal Management Directives (IMDs)**

DEQ did not complete any new IMDs in 2021 because of considerable staffing challenges including manager turnover and several unsuccessful recruitments for the both the Cleanup and Leaking Underground Storage Tank (LUST) Program Coordinator positions. However, DEQ is working on several IMDs with the goal of finalizing them next fiscal year, including:

- *Vapor Intrusion Guidance*
- *Guidance for Sites with Suspected PFAS Contamination*

### **DEQ and Oregon Health Authority (OHA) Workgroup**

In 2021, the Cleanup program continued the DEQ-OHA Cleanup Workgroup, which provides for consistent collaboration between DEQ and Oregon Health Authority to address mutual interests and issues related to cleanup and disposal sites in Oregon. For the fiscal year, this workgroup primarily focused on emerging contaminants of concern with particular interest in per- and polyfluoroalkyl substances (PFAS). OHA developed health advisory levels for four PFAS chemicals in consultation with DEQ's Cleanup program and Drinking Water program. DEQ is developing more robust guidance for how to address PFAS until PFAS becomes regulated under federal frameworks.

### **Site Assessment Program Enhancement**

DEQ is modernizing an element of the Site Assessment program to more effectively identify sites where contamination may be present by developing a new groundwater (GW) vulnerability model. The DEQ Cleanup program is collaborating with the United States Environmental Protection Agency (EPA) to fund and manage GW model development through the Preliminary Assessment/Site Investigation grant. The new GW vulnerability model will improve Site Assessment program efficiency and viability by strategically focusing our resources on sites posing the most significant risks.

In fiscal year 2021, DEQ used modeling techniques in combination with Geographic Information System (GIS) data to predict the probability of contamination being present in groundwater. In the first phase of this project, DEQ conducted literature reviews on previous groundwater vulnerability models and summarized available data of interest based on hydrological parameters likely to impact groundwater. DEQ's GW model provided support for EPA selection of GW sampling sites. In turn, data from these sampling sites will be incorporated into the model to improve how the model identifies vulnerable GW areas.

## **Statewide Priority Cleanup Sites**

In fiscal year 2021, DEQ made significant progress on the following cleanup sites, organized by region:

### **Northwest Region**

- Willamette River Downtown and Upriver Reaches, Portland
- Former Time Oil Company, Portland
- Willamette Cove Uplands, Portland
- Bradford Island, Columbia River
- Scappoose Bay/Multnomah Channel, St. Helens
- Astoria Marine Construction Company, Astoria

### **Western Region**

- J.H. Baxter, Eugene
- Catastrophic Underground Storage Tank Leak, Monmouth
- Millpond Crossing, Philomath
- East Corvallis Study Area, Corvallis
- East Salem Groundwater Investigation, Salem

### **Eastern Region**

- Owyhee Basin/Jordan Creek Site Inspection, Malheur County

- Pesticide Aerial Applicator Sites, Ontario and Vale Airports
- Kingsley AFB PFAS Investigations, Klamath Falls
- North Ridge Estates Operable Unit 1, Klamath County

### **Willamette River Downtown and Upriver Reaches, Portland**

Since 1991, DEQ has been involved in multiple investigations and cleanups along the Willamette River Downtown and Upriver Reaches. The Willamette River Downtown Reach extends from approximately the Broadway Bridge to the Sellwood Bridge and is just upriver of the Portland Harbor Superfund Site. The Upriver Reach extends south from approximately the Sellwood Bridge to Willamette Falls in Oregon City.

DEQ continues to oversee five targeted sediment investigations along the Downtown Reach. The goal of the investigations is to determine if a cleanup is needed. DEQ is partnering with local governments and responsible parties to complete three investigations, using Industrial Orphan funds to investigate the fourth, and pursuing potentially responsible parties to investigate the fifth site.

In addition to the direct benefits, these cleanup actions reduce the potential for recontamination of the nearby Portland Harbor Superfund Site from resuspension of contaminated sediment within these reaches. DEQ is coordinating with EPA to identify, prioritize and cleanup sites in these reaches prior to the initiation of remedial actions in the Portland Harbor Superfund Site.

During the reporting period DEQ completed planning for an investigation in the Upriver Reach, being funded through a grant from EPA. The scope of the study included collection of 44 sediment samples for analysis to determine ambient dioxin/furan concentrations in sediment. Fieldwork was completed in August 2021 and the report is expected to be issued in first quarter 2022.

### **Former Time Oil Company, Portland**

The former Time Oil site, now known as TOC Holdings, declared bankruptcy in early 2017 with property responsibility assigned to a Chapter 7 Trustee by the US Bankruptcy Court, Western District of Washington. In 2020, a business entity expressed interest in purchasing this riverfront property, located in the Portland Harbor Superfund Site. DEQ assisted the prospective purchaser by providing site environmental information requested during their due diligence process. In 2021, DEQ successfully negotiated a Prospective Purchaser Agreement (PPA) (see below for more information on PPAs) with the prospective purchaser. The scope of work includes significant remedial action to address legacy contaminants and upgrades to the stormwater system. This PPA was released for public review and comment during the month of October 2021. DEQ is assessing public comments, including those submitted by EPA and will determine whether modifications to the PPA are warranted.

### **Willamette Cove Uplands, Portland**

DEQ has selected a cleanup remedy to restore a portion of the Willamette Cove property for use as a nature park planned by Metro. The riverfront property stretching 3,000 feet on the northeast bank of the Willamette River in the St. Johns area has a history of development and use spanning over 100 years. Soil contamination throughout the approximately 20-acre upland area exceeds acceptable levels for both human health and the environment, including elevated levels of dioxins and furans, metals, polycyclic aromatic hydrocarbons (PAHs), and PCBs.

Following a six-month public comment period on the recommended cleanup plan and consideration of public comments, DEQ issued its ROD for the cleanup in March 2021. Under the cleanup plan, highly contaminated hot spots will be excavated and disposed offsite at a permitted landfill, and remaining contamination above risk-based levels will be consolidated and contained under an engineered cap. Based on input received, DEQ has also incorporated a contingency remedy in the final cleanup plan to provide flexibility as Metro finalizes its vision in developing the property into a nature park. The contingency remedy allows Metro to remove additional contaminated soil and take it offsite for disposal at a waste facility. Finally, cleanup of the riverbank and in-water area will be implemented by EPA as part of the Portland Harbor Superfund Site.

### **Bradford Island, Columbia River**

In February 2021, DEQ submitted a joint letter with the Yakama Nation and Washington State Department of Ecology to the EPA administrator, requesting that EPA place the Bradford Island site on the National Priorities List (NPL) (aka Superfund), which would allow EPA to use federal funding and begin cleanup activities in concert with DEQ. In September 2021, EPA announced it would propose adding Bradford Island to the NPL. This significant site on the Columbia River is contaminated with polychlorinated biphenyls (PCBs), despite past efforts to remove known sources of contamination. PCBs continue to be present at high concentrations in fish.

### **Scappoose Bay/Multnomah Channel, St. Helens**

Scappoose Bay enters the Multnomah Channel by the town of St. Helens in Columbia County. Industrial use of this area primarily consisted of the manufacturing of wood products including paper, plywood, fiberboard and treated lumber. Significant levels of hazardous substances have been identified at three former industrial sites in Scappoose Bay: the Armstrong World Industries fiberboard plant, Pope & Talbot creosote treating facility, and Boise Cascade paper mill. DEQ initiated feasibility studies in 2020 for the contaminated sediments at all three sites.

Based on review of the feasibility study for the former Boise mill site, DEQ selected a preferred remedy for sediment cleanup in Scappoose Bay and the Multnomah Channel and is currently preparing a draft Record of Decision (ROD) for public comment. DEQ will use the results of the feasibility studies along with public input to select cleanup remedies for the Armstrong and Pope & Talbot sites. DEQ is working closely with the City of St Helens, Port of Columbia County and Oregon Department of State Lands to ensure that the remedies will be compatible with current and future land and marine use. DEQ has also engaged interested tribes at the Armstrong World Industries site to support an ongoing cultural resources assessment and data gaps investigation.

### **Astoria Marine Construction Company, Astoria**

The Astoria Marine Construction Company (AMCCO) manufactured and repaired wooden-hulled fishing and ferryboats, tugboats, and yachts beginning in 1924. During World War II, the shipyard expanded operations for construction of military vessels which continued through the Korean War. During the peak production period from 1940 to 1960, the facility employed more than 400 full-time workers. In the 1960s, work for the U.S. Navy decreased and operations transitioned to fishing and tugboat repair. After 1985, business primarily involved repairs of fishing boats.

EPA conducted environmental investigations in the early 2000s on and around the AMCCO site. Investigations found contamination in soil and nearby riverbed sediment in the Lewis and Clark River near the mouth of the Columbia River. Based on those findings, EPA initiated efforts to place the facility on the NPL to guide cleanup under EPA's Superfund program. In 2012, an agreement deferred the site listing and EPA transferred site management to DEQ.

In coordination with AMCCO, tribal governments, and a community advisory group, DEQ selected the cleanup remedy and issued the ROD in 2017 and entered into a settlement agreement with AMCCO in 2018. A natural resource restoration plan was agreed upon to satisfy conditions of EPA's deferral agreement. AMCCO completed all major remedy construction activities during the spring and summer of 2020. These included demolition of onsite buildings and structures, excavation of contaminated sediments in marine ways, and upland soil hot spot removal for offsite landfill disposal. The property was winterized and work resumed summer of 2021 including restoration of the levee, construction of a stormwater system and capping of the upland area. Construction completion is anticipated in 2022. After cleanup is complete, DEQ will issue a certification of completion documenting that terms of the 2018 settlement agreement between AMCCO and DEQ have been met.

### **J.H. Baxter, Eugene**

The 31-acre site in Eugene has been an active wood treatment facility since the early 1940s. Historical spills and operational practices have resulted in soil and groundwater contamination and air emissions concerns. Over the years, DEQ and the Lane Regional Air Protection Agency (LRAPA) have investigated the facility and issued numerous enforcement actions and required cleanup measures. In October 2019, DEQ completed a cleanup plan and issued the formal ROD which required offsite sampling and other remedial actions on the property. In 2019, LRAPA included J.H. Baxter in the first group of facilities in Lane County to go through the Cleaner Air Oregon process.

DEQ received results from eight off-site soil samples required under the October 2019 ROD. Four results, including one in the Bethel Neighborhood directly north of the facility and three stormwater ditch locations indicated elevated levels of dioxins, a group of toxic chemicals that can be associated with wood-treating chemicals. Oregon Health Authority (OHA) reviewed these draft results and determined the dioxin levels represent a low public health risk. However, the levels in those four samples exceeded DEQ's standard residential cleanup levels. Additional soil sampling in residential yards near the Baxter facility is currently underway to better understand the extent of the issue and if cleanup is necessary. Sampling will continue into 2022 and a final report detailing the sampling results is expected by early summer.

DEQ has formed a collaborative governance team including LRAPA, OHA, and several local agencies and organizations to investigate the sources and extent of the contamination. OHA will also participate to further evaluate any potential health risks to the community. Additionally, a community engagement group comprised of community members interested in the J.H. Baxter facility has been formed. This group will work closely with the collaborative governance team to help inform the investigation and share information with the general community.

### **Catastrophic Underground Storage Tank Leak, Monmouth**

In April 2021, 14,000 gallons of gasoline leaked from an underground storage tank system at the 76 Gas Station at Highway 99 and Main Street in Philomath. The gasoline leak contaminated soil and groundwater and entered the City's sewer system, affecting several nearby businesses. DEQ staff worked with the City of Philomath and Polk County Fire District No. 1 to ensure public safety and cleanup of the gasoline. With DEQ oversight, the City and its contractors conducted indoor air testing, drinking water sampling, wastewater treatment plant sampling, and soil sampling. Owners of the 76 Gas Station demolished the gas station and convenience store, removed the underground storage tanks, and excavated nearly 16,000 tons of petroleum-impacted soil in May 2021. DEQ continues to oversee the cleanup and is working with the responsible party to develop a work plan to conduct additional site assessment. DEQ conducted this cleanup under a joint effort between the Emergency Response, Underground Storage Tank and Leaking Underground Storage Tank programs.

### **Millpond Crossing, Philomath**

MPC Builders LLC – the developer of Millpond Crossing, a subdivision at the former Philomath Mill site, is investigating methane that has been found in soil gas near homes. Methane is flammable and in confined spaces can cause an explosion or displace oxygen. The former Philomath Mill site operated under various names between 1955 and 1998 and had two large log ponds. The ponds were filled with wood waste and rock during the 1980s. The developer has built about 60 homes and has plans for 169 in total. Prior site assessment activities identified buried decaying organic material within the former log ponds that is generating gases, including methane.

DEQ recommended in early June 2021 that the City of Philomath pause new construction of any additional homes until the developer has completed the methane investigation and, if necessary, fully implements a methane mitigation plan. The planned investigation will help determine what additional measures may be necessary to manage the methane in the future. An agreement was reached between the developer and DEQ in July 2021, requiring a complete and thorough methane investigation.

### **East Corvallis Study Area, Corvallis**

In January 2020, chlorinated solvents were detected in water from a private well located near the City of Corvallis wastewater treatment plant. DEQ has been working with the property owner to determine the source of the chlorinated solvents. DEQ and EPA developed a sampling and analysis plan and collected groundwater samples from several wells in the area in October 2020. Chlorinated solvents were present in several of the wells that were sampled. Based on the sampling results, DEQ and EPA have been planning an expanded site investigation to further delineate the extent of contamination and to identify potential sources of the chlorinated solvents. The expanded site investigation is scheduled for 2022 field season.

### **East Salem Groundwater Investigation, Salem**

Throughout fiscal year 2021, DEQ has been working with EPA to investigate the extent of contaminated groundwater and determine potential sources in the East Salem area. A GIS groundwater model was used to identify potential sampling areas. The model examined key predictor variables for the contamination of groundwater wells. Parameters used for predicting the likelihood of contamination included saturated hydraulic conductivity, slope, and precipitation. Based on DEQ's assessment and a review of EPA's potential target areas, the East Salem target area was determined to be the highest probability for the likelihood of groundwater contamination. Domestic well locations in east Salem were overlaid with datasets including proximity to known cleanup and hazardous waste sites, environmental justice priority areas, and potential polyfluoroalkyl substances (PFAS) sources. Based on the response to well access outreach, up to 100 wells may be selected across the sampling areas. The site investigation is planned for the 2022 field season.

### **Owyhee Basin/Jordan Creek Site Inspection, Malheur County**

In fiscal year 2021, Oregon DEQ, Idaho DEQ, and EPA continue to complete additional investigations focused on potential sources of mercury to the Owyhee River and Jordan Creek areas. These areas have elevated mercury levels in surface water and sediment, along with a current public fish advisory for mercury. The most significant source is likely Jordan Creek, which drains to the Owyhee River several miles upstream of the Owyhee reservoir. Jordan Creek collects most, if not all the drainage from the Owyhee Mining District (aka Silver City Mining District) in Idaho. During the reporting period, DEQ developed and began implementing a sampling and analysis plan and will continue implementation into 2022.

### **Pesticide Aerial Applicator Sites, Ontario and Vale Airports**

DEQ's Hazardous Waste and Cleanup programs have been working with Oregon Department of Agriculture on investigating an aerial applicator business that conducted pesticide mixing and storage operations at two airport locations in Ontario and Vale. The responsible party abandoned waste containers, totes, and drums with used and unused pesticide products and have contaminated soil and water from spills and poor housekeeping practices.

Based on the abandoned and unsecured nature of the pesticide waste and potential impacts to drinking water wells from spills at the locations, DEQ requested assistance from EPA's removal, site assessment, and pesticide programs. DEQ is currently working with EPA, the cities, local authorities, and responsible parties to address the impacts. Following removal and appropriate disposal of the pesticide waste and impacted soil, EPA and DEQ's Site Assessment program will look to conduct additional assessment at both locations to determine if further cleanup may be needed to protect city water sources. Aerial applicator sites and other pesticide spill locations in Eastern Region have seen an increase in activity over the last couple of years and can be complex as there is an overlap with multiple state and federal agencies and programs.

### **Kingsley AFB PFAS Investigations, Klamath Falls**

DEQ continues to work with the Air National Guard (ANG) on potential PFAS releases at Kingsley Field Air National Guard Base in Klamath Falls. In 2015, DEQ completed a Preliminary Assessment (PA) to identify potential areas of Kingsley Field that were used as fire training areas or saw use of aqueous film forming foam since 1970. Eight potential areas of concern were identified during the PA and recommended for sampling. A Site Inspection (SI) was performed at Kingsley Field in May 2018 which included sampling soil, groundwater, and/or surface water for PFAS.

PFAS was detected above the laboratory detection limits in the soil, groundwater, sediment, and surface water samples collected during the SI. Groundwater samples collected from five monitoring wells were at concentrations exceeding the 70-nanograms per liter (ng/L) EPA drinking water health advisory.

In 2021, ANG is working on collecting samples from approximately 11 properties to determine if there have been any off-site impacts to drinking water.

### **North Ridge Estates Operable Unit 1, Klamath County**

The North Ridge Estates Superfund Site is a residential subdivision located three miles north of Klamath Falls, Oregon. Operable Unit 1 encompasses the footprint of a former Marine Recuperation Barracks impacted by asbestos-containing materials. About 360,000 cubic yards of asbestos and asbestos contaminated soils were excavated to approximately two feet below grade from the 125-acre site from 2016 to 2018. Excavated asbestos and asbestos-contaminated soils were consolidated into two on-site repositories. Following the removal of the contaminated materials, EPA placed a two-foot protective cap over the excavated portions of site. The cleanup successfully restored the site to productive use as a residential neighborhood, protecting current and future residents from asbestos contamination. Operable Unit 1 was proposed for delisting from the NPL in May 2021. DEQ will complete future operation and maintenance of the cleanup using Industrial Orphan funds.

## **Voluntary Cleanups**

The 1991 Oregon Legislature authorized a Voluntary Cleanup program (VCP) to provide DEQ oversight to willing parties for investigating and cleaning up contamination from their properties. This cooperative approach helps parties proceed efficiently and meet funding and redevelopment deadlines. In 1999, DEQ added a second VCP pathway - independent cleanup - which allows parties to complete their own remedial actions with limited or no DEQ oversight. The independent cleanup option is available for relatively simple and moderately contaminated sites that may exceed acceptable risk levels but do not pose significant threats to human health or the environment. As of June 2021, over 1,500 sites were active in the VCP. Since 1991, the VCP has issued No Further Action (NFA) decisions for over 1,300 sites.

## **Brownfield Redevelopment**

A brownfield is a vacant or underused property where actual or perceived contamination hinders the site's expansion or redevelopment. These are often highly visible eyesores where uncertainty about potential cleanup liability has derailed opportunities to bring new site uses and jobs that would revitalize a community's health and vitality. Nearly every community has brownfields. They are vacant lots we drive by daily, the piles of polluted dirt behind rusting chain-link fences, abandoned storefronts along our main streets. Community-led and agency-supported cleanup and reuse of these properties can cure blight, increase local property tax bases, provide jobs, address environmental justice issues, help meet Oregon's land use goals, and enhance public health and the environment.

In fiscal year 2021, DEQ provided technical assistance to 16 local governments/public economic development agencies that received EPA brownfield planning, site assessment, or cleanup grants. DEQ used about \$131,000 in EPA grant funds at eight brownfields to conduct site investigations and explain further-action recommendations (or make NFA decisions). Three of the brownfields (King Salvage, Carol Glover BP, and Sammy's Place) are properties that were foreclosed by Lincoln, Yamhill, and Tillamook counties and used multiple brownfield funding sources. King Salvage and Sammy's Place leveraged DEQ Solid Waste Orphan Account funding to remove hazardous substances associated with solid waste prior to conducting the brownfield site investigation. The King Salvage site also used EPA Brownfield Coalition grant and Business Oregon brownfield funding to address legacy contamination. The Carol Glover BP site is using Business Oregon's Revolving Loan Fund to complete tank removal and site remediation.

In addition, DEQ provided assistance to support a small business in an economically distressed and rural community. The Blue Mountain Ranchers Supply site in Prairie City was a former gasoline station and bulk plant that was vacant from the mid-1980s to the mid-2010s. An engineering firm acquired the property to

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provide local services and employment opportunities, however petroleum contamination associated with previous site use posed a potential risk. DEQ used EPA grant funding to decommission four underground storage tanks, remove petroleum-impacted material, and conduct a site investigation that determined that site conditions were safe for current and future use.

DEQ will continue to use federal brownfield funding to remove barriers to redevelopment at public and privately-owned properties, and work with project partners to leverage resources to return sites to protective and productive use to provide community benefits.

To provide information regarding brownfield resources in an accessible and interesting format, DEQ staff created a Story Map of the Former Johnson Oil site in Clatskanie (Columbia County). A link is available here:

<https://storymaps.arcgis.com/stories/eef8710e7a37464f945650f11422aa05>

The Story Map is intended to encourage public entities, non-profits, and other potential brownfield applicants to consider potential brownfields in their respective communities, and to know the resources that are available to assist with brownfield planning, assessment, cleanup, and redevelopment.

While DEQ uses funding received from EPA (via the State Response Grant) to support brownfield site investigations and cleanup planning as explained above, EPA also offers grant funding directly to successful applicants to support planning, assessment, and cleanup. Fiscal year 2021 EPA grant recipients and ongoing brownfield projects are described below.

### **Confederated Tribes of the Grand Ronde (Willamette Falls)**

EPA awarded an \$800,000 five-year multi-purpose grant that will be used to complete assessment and cleanup at the 23-acre former Blue Heron Paper Mill located immediately adjacent to Willamette Falls in downtown Oregon City.

### **South Central Oregon Economic Development District (SCEODD)**

EPA awarded \$600,000 in assessment grant funds to Lake County and the Cities of Lakeview and Paisley. The grant will be used to develop an inventory of brownfield sites and a community involvement plan. Funding will also support the completion of 15 environmental site assessments throughout the region.

### **Baker Technical Institute Coalition**

EPA awarded \$600,000 to the Baker Institute Coalition that is comprised of the City of Baker, the City of La Grande, and Eastern Oregon University. Assessment grant funds will be used to complete 32 environmental site assessments across the region, develop four cleanup plans, and support community engagement.

### **City of Chiloquin**

EPA awarded \$300,000 to the City of Chiloquin to conduct eight environmental site assessments, three cleanup plans, one market study, and support at least four public engagement meetings.

### **On-Going EPA Assessment & Cleanup Grants**

DEQ continues to provide technical assistance and oversight on previously awarded EPA cleanup and assessment grants. These grant winners include the following programs:

- The Dalles, Wasco County, Port of The Dalles: \$600,000 (assessment)
- Harney County, Cities of Burns and Hines: \$600,000 (assessment)
- Coquille Indian Tribe/Mithihkwuh Economic Development Corporation: \$350,000 (assessment)
- Baker Technical Institute: \$500,000 (cleanup)
- City of Ontario, Malheur County and partner cities Nyssa and Vale: \$600,000 (assessment).
- Oregon Cascades West Council of Governments, and coalition partners (the cities of Newport and Toledo, the Confederated Tribes of the Siletz Indians, and Lincoln County): \$600,000 (assessment).
- Rogue Valley Council of Governments and coalition partners Jackson County and the cities of Medford, Central Point and Grants Pass: \$600,000 (assessment).
- City of Eugene, City of Springfield and Lane County: \$500,000 (assessment).

- Cities of Corvallis, Albany, Monroe, and Philomath, and Benton: \$600,000 (assessment).
- Cities of Lakeview and Paisley, and Lake County: \$600,000 (assessment).
- City of Beaverton Public Safety Center: \$400,000 (cleanup).
- City of Beaverton Creekside District: \$300,000 (assessment).
- Prosper Portland, Former USPS Facility: \$500,000 (cleanup).
- Metro Coalition: \$600,000 (assessment).
- City of St. Helens: \$400,000 (assessment).

## Prospective Purchaser Agreements

Prospective Purchaser Agreements (PPAs) facilitate the cleanup and return to productive use of properties contaminated with hazardous substances. The agreements provide developers and others with the means to manage risk and liability before acquiring contaminated property, and to make financial investments and move forward with redevelopment following acquisition. A PPA is a legally binding agreement between DEQ and a prospective purchaser that limits the purchaser's liability for environmental cleanup at the property, in exchange for the purchaser providing a "substantial public benefit" such as cleanup, funding for cleanup, redevelopment of a vacant or underused property, or any other important public purpose. For each project, DEQ determines what constitutes a substantial public benefit, believing that flexibility is key to providing the best community outcomes from new site uses.

DEQ initiated six new PPAs in fiscal year 2021. The new PPAs cover a total of 86 acres and range in size from a third acre to 77 acres, supporting a wide variety of uses from industrial, to commercial, to mixed uses. The largest and most complex new PPA covers the Rossman Landfill in Oregon City, which has been closed for decades and is ideally located for mixed use development and a regional destination center. Also of note is the PPA with the city of Salem, which is making it possible for the City to proceed on much needed transportation systems upgrades. The area required for new right-of-way passes through a site with legacy contamination. The PPA process makes it possible for the City to provide the substantial public benefit of a safe and reliable road system without taking on unlimited liability.

DEQ's PPA program continues to manage the portfolio of more than 200 PPAs entered over the last 25 years around the state. The level of interest and activity in the PPA program remained strong throughout fiscal year 2021. More information on the PPA program can be found here: <https://www.oregon.gov/deq/Hazards-and-Cleanup/env-cleanup/Pages/Prospective-Purchaser-Agreements.aspx>

## Industrial Orphan Sites

Industrial Orphan sites<sup>1</sup> are contaminated properties where DEQ has determined the responsible parties are unknown, unwilling, or unable to undertake all required removal or remedial action. These sites include individual contaminated properties as well as area-wide sites where hazardous substances have affected sources of drinking water and other waterbodies.

DEQ generally designates a site an orphan when contamination at the site poses serious threats to human health or the environment. DEQ may also designate contaminated sites with significant but unrealized reuse potential (e.g., brownfields) as orphans. DEQ may also refer large and complex orphan sites to EPA for listing on the National Priorities List (NPL) and use the Industrial Orphan Site Account to pay the state's required 10 percent share of remedial action costs. Since 1992, DEQ has declared 120 sites Industrial Orphans. Forty-five of these sites have been cleaned up to No Further Action status, with many now supporting enhanced uses through redevelopment. The remaining orphans are in various stages of investigation and cleanup, including long-term monitoring and/or operation and maintenance (such as ongoing treatment systems to protect drinking water resources). During fiscal year 2021, DEQ worked actively on 12 Industrial Orphan sites.

In the 2021 legislative session DEQ sought General Obligation Pollution Control bonds to replenish the Industrial Orphan Site Account for the next two biennia, however DEQ received only partial authorization in

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<sup>1</sup> Industrial Orphan sites are distinct from *Solid Waste Orphan sites* (discussed below).  
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HB 5008. This authorization is sufficient to maintain the prior maturing debt obligations coming due in FY21-23 and provides approximately \$4.5 million in additional funding to pay for expenses associated with the bond sale and orphan remediation work.

DEQ will continue funding sites presenting significant risks to human health or the environment where responsible-party resources are unavailable. Subject to the availability of funds, DEQ will also consider using orphan funds to complete site cleanups rather than simply stabilize contamination, and to address eligible sites where development potential is significant.

Since 1991, DEQ has recovered approximately \$10.1 million of past expenditures from responsible parties and their insurance companies. While prospects for additional cost recovery are limited, DEQ will continue pursuing recovery of past orphan expenses to maximize funding available to perform cleanup activities at current and future orphan sites.

As mentioned above, states must contribute 10 percent of EPA's remedial-action costs and 100% of long-term monitoring and maintenance costs at NPL sites with no viable responsible parties. Subject in part to the cost and timing of EPA's remedial activities at NPL sites in Oregon, DEQ anticipates the need for \$5 - \$10 million of additional orphan funding to meet its estimated federal match requirements over the next 10 years. In the coming years DEQ will continue to face a very significant issue in paying for orphan site cleanups, in large part due to the required state share of remedial-action costs at NPL sites.

## **Solid Waste Orphan Site Account Program**

The Solid Waste Orphan Site Account (SWOSA) is a fee-funded program that focuses on the cleanup of actual or potential hazardous substance releases from local government-owned solid waste disposal sites (e.g., municipal landfills) or privately-owned solid waste disposal sites (e.g., dumps, junkyards). Generally, SWOSA sites differ from Industrial Orphan sites because sites must have accepted domestic solid waste.

Solid waste orphan sites come in many forms, and DEQ is currently evaluating a list of over 500 potential local government and private solid waste orphan sites to determine eligibility and prioritize sites. In fiscal year 2021, DEQ leadership approved a SWOSA funding plan that earmarked \$4.8M to clean up 12 high priority sites and to perform site assessments at an additional 100 sites across Oregon.

In fiscal year 2021, DEQ worked on numerous solid waste orphan sites, including a tire disposal and auto scrap yard, a metal scrap yard and clandestine drug lab, an auto dismantler and crusher, and a lumber yard. These projects have taken a large amount of intra-agency coordination and interagency coordination between DEQ, OHA, Regional Solutions, and local governments. DEQ has worked on multiple SWOSA projects where local governments have contributed resources to help clean up sites. Local government contributions could include funding, labor, or reducing waste management fees. Once cleanup actions are complete and threats to human health and the environment are abated, the sale and redevelopment of these sites improves local property value and local tax revenue.

DEQ's goal is to prioritize sites that would provide equitable funding to underserved communities throughout Oregon in order to improve local conditions and build trust in the government. This will be accomplished by performing targeted cleanup while utilizing local businesses to complete cleanup actions. This approach channels SWOSA funds into the community and paves the way for redevelopment.

## **3. Cleanup Milestones and Projections**

This section summarizes Cleanup program achievements in fiscal year 2021 (July 1, 2020 to June 30, 2021) and projections for the fiscal year ahead.

### **Accomplishments – Fiscal Year 2021**

## **Sites in DEQ's Database**

Since 1988, DEQ has identified over 6,000 contaminated and potentially contaminated sites in Oregon and compiled information regarding these sites in the Environmental Cleanup Site Information (ECSI) database. DEQ identified 43 new sites in fiscal year 2021.

The most highly contaminated sites have been identified and the discovery of new sites should decline in the future. However, the “universe” of future cleanup sites is unknown. State law does not require reporting of contaminated sites to DEQ (with the exception of underground storage tank releases and current spills above reportable quantities). Thus, there are “legacy” contaminated sites that DEQ may not learn about until: 1) they come into the Voluntary Cleanup program (described in Section 2); or 2) a third party reports them to DEQ; or 3) they are discovered by DEQ's Cleanup staff conducting research in various parts of the state. Additionally, new releases still occur, and people find unexpected contamination during construction or other activities – events that DEQ cannot predict.

## **Confirmed Release List Sites**

In fiscal year 2021, DEQ removed two sites from the Confirmed Release List. The list includes sites with documented contamination (rather than just being suspected). In recent years DEQ has limited its use of the Confirmed Release List, preferring instead to document sites in ECSI as either suspected release sites or documenting sites by activity, such as site screening or preliminary assessment.

## **Preliminary Assessments**

A preliminary assessment is an investigation of a site, its surroundings, and plants and animals potentially affected by pollution. DEQ reviews a site's history and conducts a walk-through to determine whether contamination is likely and what its effects could be – and may take samples. DEQ uses this information to determine the site's priority for further investigation and cleanup. In fiscal year 2021, DEQ or parties working with DEQ completed five Preliminary Assessments.

## **Removal Actions**

A formal removal is a cleanup that occurs before, during or in lieu of, a remedial investigation, feasibility study or a final cleanup remedy. An informal removal is a cleanup that occurs to address low priority contamination and in the absence of a remedial investigation, feasibility study and ROD. Parties working within DEQ's Voluntary Cleanup program typically perform informal removals and receive No Further Action determination letters. Removals are commonly used to address “hot spots” of contamination. Removals help protect public health by preventing exposure to contaminants and the further spread of contamination. Removals are typically short-term activities over several months but on occasion may take several years to complete. In fiscal year 2021, Oregon initiated three and completed four formal removal actions.

## **Remedial Investigations**

A remedial investigation involves the characterization of hazardous substances, characterization of the facility, performance of baseline human health and ecological risk assessments, and collection and evaluation of information relevant to the identification of hot spots of contamination. In fiscal year 2021, DEQ approved four as final. Remedial investigations often take more than a year to complete so investigations started in a given fiscal year are generally completed in a subsequent fiscal year.

## **Feasibility Studies**

Feasibility studies provide detailed comparisons of possible cleanup methods for site contamination posing unacceptable levels of risk. Various remedial approaches or technologies are developed and evaluated for protectiveness. Options that would protect human health and the environment are then evaluated for effectiveness, ease of implementation, reliability, implementation risk and reasonableness of cost, as the law requires. DEQ recommends an option as the cleanup strategy and makes the selection after consideration of public comment. DEQ approved one Feasibility Study as complete in fiscal year 2021.

### Records of Decision

A ROD documents DEQ’s decision on a site’s cleanup method, based on the options evaluated in the feasibility study. DEQ finalizes the record of decision after evaluating public comments on the proposed approach and adjusting it as needed. The ROD draws upon remedial investigation and feasibility study findings to summarize the nature and extent of contamination and any risks it poses, the alternatives considered in the feasibility study, and the selected cleanup alternative to be implemented. DEQ completed three RODs in fiscal year 2021. It takes several months to write a ROD, open it for public comment, and approve it. Many simpler sites are addressed using staff memos and reports rather than a ROD.

### Remedial Actions

A remedial action is the final cleanup action at a site. Remedial actions may involve eliminating contamination from a site by excavation or treatment; isolating the contamination through institutional controls, such as deed restrictions that limit certain land or water uses to prevent exposure; or use of engineering controls such as caps, fencing or subsurface barriers. DEQ provided oversight for six remedial actions initiated in fiscal year 2021 and determined that nine were complete.

### No Further Action Decisions (NFA)

DEQ makes a NFA decision after concluding that a site no longer poses risks to human health or the environment, and no additional investigation or cleanup is needed. During fiscal year 2021, DEQ issued NFA decisions for 94 sites. The number of NFA decisions exceeds the number of records of decisions and remedial actions because many simple sites are cleaned up independently and then request DEQ review that the site is now protective in order to issue a NFA decision. In other cases, DEQ determines that low levels of contamination do not threaten human health or the environment. At the end of fiscal year 2021, there were a total of 2,309 cleanup sites with DEQ NFA decisions. This amounts to approximately 39% percent of all sites in DEQ’s ECSI database.

## Cleanup Actions Initiated and Completed for Fiscal Year 2021; Forecast for Fiscal Year 2022

The following table summarizes actions completed by DEQ’s Environmental Cleanup program during fiscal year 2021. A forecast for fiscal year 2022 is also included.

Site actions	Fiscal Year 2021 (Actual)		Fiscal Year 2022 (Forecast)	
	Initiated	Completed	Initiated	Completed
Suspected Release Sites Added to ECSI Database		43		43
Added to Confirmed Release List		0	--	--
Added to Inventory		0	--	--
Site Screenings	6	5	6	5
Preliminary Assessments	3	5	3	5
Removal Actions (formal)	3	4	3	4
Remedial Investigations	6	4	6	4
Feasibility Studies	1	1	1	1
Records of Decision	2	3	2	3
Remedial Actions	6	9	6	9
No Further Action Decisions (including informal removal actions)		94		94

Note 1: Fiscal year 2022 forecasts are based on best professional judgement of the Cleanup program management team. One-time actions show data in the “completed” columns only.

Note 2: The COVID-19 pandemic and unprecedented wildfire have resulted in lower than predicted Cleanup Actions in fiscal year 2021. Nevertheless, DEQ's Cleanup program is stable and in fiscal year 2022 DEQ expects to complete a similar number of Cleanup Actions.

## 4. Cleanup Program Modernization

As Oregon's population grows and its industries evolve, DEQ's Environmental Cleanup program faces new opportunities and new challenges. Statewide, former industrial sites are being redeveloped for new purposes, and DEQ often now works on smaller sites that require quick turnaround to facilitate real estate transactions. Meanwhile, DEQ is called to engage residents in neighbouring communities while it performs essential oversight of cleanup.

Over the past two decades, revenue sources have declined while DEQ adjusted programs and responsibilities to meet changing needs and expectations. The program is operating with fewer filled positions, despite greater pressures on staff and management. To address this situation, DEQ will modernize its program by stabilizing funding and strategically planning the work ahead.

### Funding Modernization

DEQ's Environmental Cleanup program relies on a complex variety of revenue sources, including cost recovery, fees, federal grants, and bond sales. The program's internal systems and funding structure have remained largely the same since its inception over 30 years ago. Both internal systems and funding structure need an update. A description of funding sources follows.

#### Cost recovery

Cleanup and hazardous waste laws authorize DEQ to charge all reasonable costs attributable to or associated with cleanup or hazardous waste activities at a particular site. Many of DEQ's expenses are financed through cost recovery and from the responsible parties performing cleanups. DEQ recovers costs for both cleanup oversight and, if necessary, the cost of contractors hired to perform the cleanup. Responsible parties are often reluctant to pay full costs.

#### Fees

Fees pay a portion of Environmental Cleanup program costs, and fee revenue has declined in recent years. Senate Bill 57, which passed the Oregon Legislature in 2021, updated the fees collected at the hazardous waste landfill near Arlington which help support the Environmental Cleanup programs. DEQ also uses a portion of this fee revenue to meet federal grant match requirements.

#### Dry Cleaner Program

Dry cleaning facility operators pay fees to fund site assessment and/or cleanup of qualifying dry cleaner sites and DEQ oversight of the industry via the Dry Cleaner program. Dry cleaner revenues are declining as businesses close over time or switch to using less toxic products. With limited funding, DEQ is unable to perform consistent inspections and provide adequate assistance for sufficiently managing perchloroethylene (PCE), a hazardous substance historically used by the dry cleaning industry. Because of the declining amount of inspection and cleanup work being done, DEQ has assigned Dry Cleaner program oversight to Hazardous Waste and Air Quality programs while continuing to examine strategies to adequately fund future dry cleaner site cleanups.

#### Federal funds

Grants, primarily from EPA, support cleanup work in several ways. DEQ uses grants to fund the development and administration of the statewide Environmental Cleanup program; support efforts to develop brownfield sites; pay for federal-level site assessments and brownfield assessments; and enable staff to participate in decisions related to EPA Superfund sites in Oregon. The U.S. Department of Defense also provides some funding through a cooperative agreement for DEQ's oversight of cleanups at military facilities. Generally,

federal grant funds are decreasing or remaining flat, which effectively erodes DEQ’s “buying power” as costs increase with inflation.

The Leaking Underground Storage Tank (LUST) Trust fund is an additional federal fund available to address petroleum releases from federally regulated underground storage tanks (USTs). These funds are accessed to support UST cleanup and prevention through a formal assistance agreement.

### **Bond Sales and Other Revenue Sources**

For sites where responsible parties have not been identified, or where the responsible parties are unable or unwilling to finance the cost of cleanup, DEQ uses a few different revenue streams to fund the work:

- The Solid Waste Orphan Site Account is funded by a portion of solid waste tipping fees.
- The Industrial Orphan Site Account has been funded by long-term bonds, financed primarily from General Funds, and a contribution from hazardous substance possession fees.
- DEQ has also been successful in recovering orphan funds used to clean up sites through agreements with prospective purchasers of contaminated properties, settlements with responsible parties once liability is established, or owners’ insurance claims.

### **Strategic Planning**

The turbulence of 2020 and 2021 impacted DEQ’s plans to conduct strategic planning. However, the program made significant progress in understanding the complexity of program funding, and the changing staffing needed to effectively serve Oregon’s communities. Additionally, DEQ is preparing to launch an agency-wide strategic planning process that will provide a critical North Star for the program’s work. Strategic planning will allow the Cleanup program to understand partner and community expectations while also recognizing the changing tools and methodologies that have developed since the program’s inception in the 1980s. The future strategic plan will allow the program to identify potential rulemaking and/or statutory changes, plan for staffing needs, and evaluate appropriate funding mechanisms. Envisioning what the program could look like over the next 50 years will allow robust conversations with the regulated community and new partners who could be impacted. DEQ will bring an environmental justice and equity lens to all these efforts, which will require different types of stakeholder engagement than the agency has historically employed.