

Annual Environmental Cleanup Report – 2017

Submitted to:

Governor Kate Brown

Oregon Legislative Assembly

Oregon Environmental Quality Commission

January 2017

Environmental Cleanup Program

700 NE Multnomah St.
Suite 600

Portland, OR 97232

Phone: 503-229-5696

800-452-4011

Fax: 503-229-5850

Contact: Bruce Gilles

www.oregon.gov/DEQ

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



State of Oregon
Department of
Environmental
Quality

This report prepared by:

Oregon Department of Environmental Quality
700 NE Multnomah Street, Suite 600
Portland, OR 97232
1-800-452-4011
www.oregon.gov/deq

Contact:
Bruce Gilles, Manager
Environmental Cleanup & Emergency Response Section
503-229-6391

Documents can be provided upon request in an alternate format for individuals with disabilities or in a language other than English for people with limited English skills. To request a document in another format or language, call DEQ in Portland at 503-229-5696, or toll-free in Oregon at 1-800-452-4011, ext. 5696; or email deqinfo@deq.state.or.us.

Table of Contents

Executive Summary	1
1. Accomplishments – Fiscal Year 2016.....	2
Sites in DEQ’s Database	2
Sites on the Confirmed Release List	3
Sites on the Inventory.....	3
Preliminary Assessments.....	3
Removals.....	3
Remedial Investigations	3
Feasibility Studies	4
Records of Decision	4
Remedial Actions	4
No Further Action Decisions.....	4
2. Cleanup Program Highlights	4
Portland Harbor Cleanup.....	4
North Ridge Estates Cleanup	5
Mosier Spill Response.....	5
Cleanup Program Improvements	6
Public Notice Criteria and Procedures	6
Project Manager Manual.....	6
Institutional and Engineering Controls Periodic Review Pilot	6
Ecological Risk Assessment Guidance	7
Voluntary Cleanups.....	7
Brownfields	7
Malden Court/Green Lents Brownfield Project.....	8
Oregon Brownfields Coalition.....	8
Northeast Oregon Economic Development District	8
Bend Demo Landfill	8
Prospective Purchaser Agreements	9
Nonprofit Development of Affordable Urban Housing (1st & Arthur PPA).....	9
Public/Private Partnership on Transit Oriented Development (Group 701 PPA)	9
Local Government Protecting Against Floods and Restoring Habitat (Tillamook County PPA).....	9
Orphan Sites	10
3. Cleanup Milestones and Projections	11
Cleanup Phases Initiated and Completed for Fiscal Year 2016, and Forecast for Fiscal Year 2017.....	11
Four-Year Plan: Projected Cleanup Actions, 7/1/15 – 6/30/19	12

Executive Summary

This annual report from the Oregon Department of Environmental Quality provides an update on the Environmental Cleanup Program’s efforts to assess, investigate and clean up contaminated lands and put these lands back into productive use. Oregon Revised Statute 465.235 mandates this yearly report to the Oregon Legislature, the Governor and Oregon’s Environmental Quality Commission. This report includes:

- Statistics and a description of Environmental Cleanup Program activities.
- A summary of Cleanup Program highlights including: work to control upland sources of hazardous substance releases to the Willamette River within the Portland Harbor Superfund site; efforts to improve Cleanup Program performance; voluntary cleanup progress; brownfields work; prospective purchaser agreement projects; and an outline of future funding needs for the state’s orphan site program.
- The current four-year operational plan for fiscal years 2016 – 2019 (fiscal year ending June 30th).

Cleanup Actions – Fiscal Year 2016

Completed actions	FY 2016		FY 2015 + FY 2016	
	Projected	Actual	Projected	Actual
Removal Actions	12	9	24	20
Preliminary Assessments (PAs)	7	4	17	12
Remedial Investigations (RIs)	12	4	24	16
Feasibility Studies (FSs)	9	6	21	13
Records of Decision (RODs)	5	5	9	12
Remedial Actions (RAs)	10	7	20	16
No Further Action Determinations (NFAs)	80	73	170	142
Totals:	135	108	285	231

While DEQ is continuing to make progress investigating and cleaning up contaminated sites, actual completions for fiscal year 2016 were somewhat below projections, except for remedial action records of decision or RODs. The Cleanup Program plans to investigate why actual completions were lower than projected and address the issue as appropriate. Possible reasons could be: 1) staff not entering or incorrectly recording actual completions in the Environmental Cleanup Site Information database; 2) site investigations showing suspected contaminated sites did not pose significant risks to human health or the environment; or 3) investigation and cleanup activities that do not constitute a full-scale “preliminary assessment,” “remedial investigation,” “feasibility study,” or “remedial action” under the Oregon Administrative Rules.

DEQ continues to return contaminated and unusable lands to productive use through prospective purchaser agreements and monies specifically directed to address “orphan” sites – highly contaminated properties whose responsible parties are unknown, unwilling or unable to clean up these sites. DEQ continues to engage an external technical workgroup to identify ways to improve DEQ’s ecological risk assessment process. DEQ is also continuing efforts to develop and plan the implementation of a periodic review pilot program to verify whether institutional and engineering controls on sites are still protective. (See sections 2 and 3 for more information.)

1. Accomplishments – Fiscal Year 2016

Oregon's Environmental Cleanup Program:

- Discovers sites that are or may be contaminated with hazardous substances;
- Evaluates and prioritizes sites for further action;
- Oversees the investigation and cleanup of sites presenting significant risks to human health or the environment;
- Assists property owners and local communities in restoring properties to productive use through voluntary cleanups, brownfield redevelopments and prospective purchaser agreements; and
- Conducts investigations and cleanups at “orphan sites” in cases where the responsible party is unknown, unwilling, or unable to complete required cleanup actions.

This section summarizes Cleanup Program achievements in fiscal year 2016 (July 1, 2015 through June 30, 2016).

Sites in DEQ's Database

Since 1988, DEQ has identified nearly 5,400 contaminated and potentially contaminated sites in Oregon and compiled information regarding these sites in the Environmental Cleanup Site Information (ECSI) database. DEQ identified 136 new sites in fiscal year 2016. This is a higher number than usual, due to the Sept. 2015 addition to ECSI of about 45 parcels within the North Ridge Estates federal Superfund site in Klamath Falls.

The most highly contaminated sites have likely already been identified and the discovery of new sites should decline in the future. However, the “universe” of future ECSI sites is unknown. State law does not require contaminated sites be reported to DEQ (with the exception of underground storage tank releases and current spills above reportable quantities). Thus, there's an unknown number of “legacy” contaminated sites DEQ may not learn

Oregon's Cleanup Process

DEQ **screens** sites where hazardous substances may have been released to determine priorities for further action. If a release appears likely, a **preliminary assessment** may be conducted to investigate the presence of contamination. A **site investigation** may also be conducted to assess the extent of contamination. In the event of an emergency, a **removal** may be needed to stabilize the site.

Sites known to be contaminated proceed through a three-step investigation process to determine how (or whether) they are to be cleaned up. A **remedial investigation** determines the full nature and extent of the contamination. A **risk assessment** looks at threats the contamination may pose to human health and the environment. Finally, a **feasibility study** evaluates various site cleanup options. From this information, DEQ determines whether the site needs cleanup and, if so, how it should be done. A **removal** may be conducted at any time during this process to quickly reduce the amount of contamination and the threat it poses.

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**) after a **public comment period**. The resulting cleanup is referred to as a **remedial action**. In addition to (or instead of) removing or eliminating the contamination, an **engineering control** (such as capping or fencing) may be put in place to isolate the contamination. Alternatively, an **institutional control** may be recorded to limit future activities at the site so that people and animals are not exposed to the contamination.

A site receives a **no further action** 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.

about until: 1) they come into the voluntary cleanup program (described in section 3 below); or 2) a third party reports them to DEQ; or 3) they are discovered by DEQ’s site assessment staff while conducting research in an environmentally sensitive area. Additionally, new releases still occur, and people find unexpected contamination during construction or other activities – events that DEQ cannot predict.

Sites on the Confirmed Release List

In fiscal year 2016, DEQ added three sites to the confirmed release list and removed two. The list includes sites where contamination has been documented (rather than just being suspected).

Sites on the Inventory

In fiscal year 2016, DEQ added three sites and one site was delisted from the Inventory of Hazardous Substance Sites, which lists sites DEQ has confirmed have contamination posing a clear risk to human health or the environment. Sites that rely on engineering or institutional controls to manage risks must also remain on the inventory.

Preliminary Assessments

A preliminary assessment is an investigation of a site, its surroundings and plants and animals potentially affected by pollution. DEQ reviews the site 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 2016, DEQ or parties working with DEQ initiated preliminary assessments at three sites, and completed assessments at four sites.

Removals

A removal is a cleanup that occurs before, during or in lieu of, a remedial investigation, feasibility study or a final cleanup remedy. 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 continue for several years to complete. In fiscal year 2016, Oregon initiated eight removal actions and completed nine.

Remedial Investigations

A remedial investigation involves taking samples at a site to determine if contaminants are present, their locations, concentrations, and migration patterns. Remedial

Routes to Cleanup in Oregon

DEQ has several options for owners and operators of contaminated property move through the investigation and cleanup process. The most common is **voluntary cleanup**. Property owners seeking a signoff from DEQ sign up 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.

If a party intends to purchase property with existing contamination, they can enter a **Prospective Purchaser Agreement** and clean up the property and receive protections from liability from DEQ and third parties

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 its orphan site account where responsible parties are unable or willing to clean up or unknown.

Qualifying contaminated **dry cleaner** sites are also addressed by DEQ through a separate account funded by fees paid by eligible dry cleaning facility owner/operators.

Other types of cleanups are conducted under separate statutory authority. DEQ’s **emergency response** program new hazardous material spills to be immediately cleaned up. Petroleum releases from **underground storage tanks** are addressed through the agency’s underground storage tank program.

investigations include an evaluation of the risks that the contamination poses to human health and the environment (plants and animals). In fiscal year 2016, DEQ provided oversight on two new remedial investigations and approved four as final. Because remedial investigations often take more than a year to complete, 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 can be used, and each is 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 public comment. DEQ initiated three feasibility studies in fiscal year 2016, and approved six as complete.

Records of Decision

A record of decision (also known as 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 record of decision draws upon remedial investigation and feasibility study findings to summarize the nature and extent of contamination and risks it poses, and the method to be used to implement a remedy. DEQ initiated five records of decision in fiscal year 2016, and also completed five. It takes several months to write a record of decision, open it for public comment, and approve it.

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, or isolating the contamination through institutional controls, such as deed restrictions that limit certain land or water uses in order to prevent exposure, or use of engineering controls such as caps, fencing or subsurface barrier walls. DEQ provided oversight for four remedial actions initiated in fiscal year 2016 and determined that seven were complete.

No Further Action Decisions

DEQ makes a "no further action" (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 2016, DEQ issued NFA decisions for 73 sites. The number of NFA decisions exceeds the number of records of decisions and remedial actions because many simple sites are independently cleaned up prior to interested parties requesting oversight by DEQ. In other cases, DEQ determines that the low levels of contamination do not threaten human health or the environment. At the end of fiscal year 2016, there were, coincidentally, 2,016 sites with DEQ NFA decisions. This amounts to about 38 percent of all sites in DEQ's ECSI database.

2. Cleanup Program Highlights

Portland Harbor Cleanup

DEQ continues work with a number of parties to complete upland source control and cleanup of properties around the Portland Harbor Superfund Site in preparation for the U.S. Environmental Protection Agency's ROD for in-water sediment cleanup. In March 2016, DEQ published an update to the Nov. 2014 report summarizing information on the status of source control. At the time of the report, source control and cleanup decisions were complete at 60 percent of the upland sites discharging to Portland Harbor. Completion of source control at another 15 percent of sites is expected in 2017 and plans are in place to complete the remaining 25 percent prior to or in conjunction with EPA's in-water ROD. DEQ continues to implement a stormwater source control approach that integrates Clean Water Act programs and permits to prevent sediment from being contaminated again following EPA's cleanup. With the issuance of EPA's ROD, DEQ is continuing

to take firm steps to ensure high priority sites take timely cleanup and source control actions. To this end, enforceable orders were issued for two key sites in 2016, with more planned for 2017. DEQ is also overseeing in-river sediment cleanup at several sites in the “Downtown Reach” of the Willamette River immediately upstream of Portland Harbor.

EPA released their Proposed Plan for the Portland Harbor in-water sediment cleanup in June 2016. During the public comment period, DEQ participated with EPA at a number of public information sessions to help the public understand how contamination is being controlled on properties near the river so they are better able to comment on EPA's proposed sediment cleanup plan. After reviewing comments and making necessary modifications to their proposed cleanup alternative, EPA issued the ROD on Jan. 3, 2017. DEQ, on behalf of the State, has reviewed a draft of the ROD and in coordination with other State agencies and the Governor's Office will be informing EPA whether it concurs with EPA's final remedy decision before the ROD is publicly issued. DEQ will continue to work closely with EPA on strategies to help ensure that implementation of the final remedy happens quickly and successfully. These strategies include developing a plan to address toxics within the Willamette River watershed that goes beyond what can be achieved with the selected remedy, coordination of agency resources to share technical oversight functions during remedial design and construction, and a commitment to continued engagement with Tribal governments, the community, and other key stakeholders.

North Ridge Estates Cleanup

EPA Region 10 and DEQ are currently working on the Remedial Action (cleanup) for the North Ridge Estates Superfund Site in Klamath Falls. This cleanup effort began in July 2016. North Ridge Estates is a residential subdivision that is contaminated with asbestos as a result of the improper demolition of approximately eighty 1940s-era military barracks buildings. Asbestos contaminated material and soil will be excavated from individual properties and consolidated into two on-site repositories. Construction will occur over three construction seasons and is estimated to be complete in fall 2018. Additional contamination at the nearby Kingsley Firing Range, also part of the site, will be investigated and completed at a later time. The remedial construction for Season 1 began in late-July and concluded at the end of Nov. 2016 as heavy work is unable to be conducted during winter months. Construction staff will remain onsite through the winter months preparing for Season 2.

Mosier Spill Response

The DEQ continues to oversee monitoring and cleanup of petroleum contamination from a June 3, 2016 spill of Bakken crude oil that occurred when a Union Pacific Railroad train derailed in Mosier. During the derail, 16 cars of a 96-car train derailed, with three of the cars catching fire, which were extinguished on June 4, 2016.

Approximately 47,000 gallons of oil escaped from four rail cars. During the derail, one of the cars tore off the lid of a sanitary sewer manhole. As a result, approximately 13,000 gallons of the oil flowed into the nearby wastewater treatment plant, where it was contained. The oil was later pumped out and taken to an offsite disposal facility. The wastewater treatment plant and associated piping were later restored to operating condition. Initial cleanup involved excavation and offsite disposal of 2,960 tons of petroleum-contaminated soil that contained an estimated 18,000 gallons of oil. UPRR estimates that most of the remaining 16,000 gallons of oil burned during the fire. A small amount of oil initially entered the Columbia River through the waste water treatment plant, resulting in a light sheen that quickly dissipated. Oil-absorbing booms were placed around the affected portion of the river to contain and prevent migration downstream.

Following the initial spill response, DEQ began overseeing additional investigation and site restoration activities including installing groundwater extraction, monitoring, and air injection wells to remove dissolved petroleum remaining beneath the location of the spill site. On-going soil, sediment, surface water, groundwater sampling continue to be collected to evaluate the long term effectiveness of the cleanup and addressing comments and concerns from several stakeholders.

Cleanup Program Improvements

DEQ's Cleanup Program uses continuous improvement processes to ensure the best environmental outcomes for Oregon's communities and returning land to economic viability. Improvements are identified and implemented through: 1) internal review (and revision as needed) of guidelines and policies; 2) providing training for staff; and 3) evaluating participant feedback provided by the annual Cleanup Program survey for stakeholders.

DEQ started conducting annual surveys of cleanup program stakeholders in 2012 to gain input on accessibility of information, communications, project planning, collaboration, decision-making, and costs. DEQ will continue using the survey results to help identify areas for improvement, as well as increase accountability and transparency.

DEQ conducted its fourth annual survey in Jan. 2016. DEQ sent the survey to more than 500 individuals with active projects or projects that ended in the past year. Approximately 20 percent responded, which is less than prior years where response rates were in the range of 25 percent. In general, more than 70 percent of respondents rated DEQ performance as acceptable or favorable in all of the above-listed areas except for DEQ project oversight costs, timeliness of service and efficiency of our decision making. Survey responses in 2015 indicated a lower level of satisfaction with the cleanup program compared to 2014.

Several circumstances affected service delivery of the Cleanup program in 2015. DEQ's Northwest Region office and the Salem office changed locations that resulted in the move of well over half of all DEQ regional cleanup staff. Additionally, several senior project managers retired, which required assigning of a number of their projects to other staff while DEQ recruited and trained new staff and reassigning work to new employees. This affected record availability and our ability to respond to requests from parties interested in project information. Further, in Oct. 2015, DEQ raised its indirect rate charged to program participants. This was the first rate increase in 17 years and covered expenses incurred for moving two major agency offices and upgrading outdated computer hardware and software systems.

DEQ future improvement efforts are currently focused on oversight costs, timeliness of services and decision-making. Program improvements for the fiscal year 2016 are described in the subsections below.

Public Notice Criteria and Procedures

In fiscal year 2016, DEQ completed clarified public notice and comment criteria and procedures for actions proposed at Cleanup and Leaking Underground Storage Tank sites. While public-notice requirements have not changed recently, there was some confusion with respect to whether public notice was mandatory or discretionary under certain situations, as well inconsistent application of DEQ public notice criteria and procedures statewide. Consequently, clarification was needed to ensure that staff implements DEQ's public notice criteria consistently statewide.

Project Manager Manual

DEQ developed and released a project manager manual for the Cleanup and Leaking Underground Storage Programs. The purpose of the manual is to provide DEQ project managers with a user-friendly guide to quickly look up relevant laws, guidance, procedures, and forms, thus, helping to improve timeliness and consistent application statewide. The manual also aids DEQ with its succession planning efforts by capturing and documenting institutional knowledge.

Institutional and Engineering Controls Periodic Review Pilot

DEQ continued to develop a pilot program to conduct periodic reviews of sites with institutional and engineering controls. These long-term controls are designed to prevent people and wildlife from being exposed to contaminants remaining in soil or water at cleanup sites.

DEQ is planning to implement the pilot in 2017. The objective of the Pilot is to provide insight into how to implement a permanent institutional/engineering controls periodic review program, including documentation

of lessons learned during the Pilot. Before beginning a site review, DEQ will notify the property owner that the review is planned, with explanatory materials, a summary of the expected process, and an estimate of review costs.

Ecological Risk Assessment Guidance

In October 2014, DEQ convened a technical workgroup of external ecological risk assessment professionals to provide input aimed at improving DEQ's ecological risk assessment process. The workgroup conducted four meetings in the fiscal year 2016, totaling 13 meetings since the workgroup began. These meetings were open to the public and details were posted on DEQ's website.

The workgroup developed a preliminary framework intended to provide more opportunities for sites to screen out or undergo cleanup actions earlier in the process, compared to current guidance, to make the process more cost-effectively and timely. The framework includes land use and habitat size thresholds to exclude habitat from further ecological risk evaluation where habitat will be removed based on zoning or redevelopment plans, or an ecological risk assessment would have little or no value. The framework also includes criteria intended to improve data collection and a methodology for comparing the net environmental benefits of cleanup alternatives to support risk-based decision-making.

The workgroup is continuing to refine its preliminary framework, and is expected to provide DEQ with final recommendations in Jan. 2017. The workgroup is exploring whether to incorporate generic screening levels to streamline the process for simple sites and reserve site-specific risk assessments for complex sites. The workgroup was also tasked with evaluating whether to adopt sediment management standards similar to those adopted by the Washington Department of Ecology. DEQ will consider the workgroup's recommendations in revising current guidance and determining whether rulemaking is needed.

Voluntary Cleanups

The 1991 Oregon Legislature authorized a voluntary cleanup program 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 voluntary cleanup "pathway" the Independent Cleanup Pathway. The pathway allows parties to complete their own investigations and cleanups with limited or no DEQ oversight. If a party gives DEQ 90 days' notice, typically, cleanup staff can review and approve a final cleanup report within 60 days after report submittal. The independent cleanup option is available for moderately contaminated sites that may exceed acceptable risk levels but pose no imminent threats to humans or the environment.

As of Oct. 2016, about 300 sites were active in the Voluntary Cleanup Program, with about 250 sites following the traditional pathway and about 50 in independent cleanup. Since 1991, the Voluntary Cleanup Program has issued NFA decisions for 1,133 sites, far more than could have been completed using an enforcement/penalty approach.

Brownfields

A brownfield is a vacant or underused property where actual or perceived contamination hinders expansion or redevelopment. These are often highly visible community 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 a brownfield. They are the vacant lots we drive by daily, the piles of polluted dirt behind rusting chain link fences, the abandoned storefronts blighting our main streets. The cleanup and reuse of these properties can cure blight, increase the local property tax base, provide jobs, help meet Oregon's land-use goals, and enhance public health and the environment.

In fiscal year 2016, DEQ's Cleanup Program provided significant technical assistance and advice to 16 local governments that received EPA brownfield planning, site assessment, or cleanup grants. DEQ used about

\$250,000 in EPA grant funds at eight brownfield sites during fiscal year 2016 to evaluate contamination and explain further-action needs or make NFA decisions.

Malden Court/Green Lents Brownfield Project

In recent years, DEQ and its partners have focused on an underserved area in outer east Portland, which has low income families and other environmental justice concerns, including a lack of park space and little availability of locally grown, nutritious food. In 2015, an undeveloped and overgrown ½-acre parcel on Malden Ct., adjacent to the Springwater Trail, came to DEQ's attention. The nonprofit Green Lents, which promotes a culture of sharing and environmental sustainability in and around the Lents neighborhood, wanted to repurpose it as a community orchard. The property had a history of illegal dumping and trespassing, with garbage and building debris strewn throughout. It was also overgrown with invasive Himalayan blackberries, potentially masking other potential environmental issues. Green Lents asked DEQ to investigate whether the site could be used safely as a community orchard.

DEQ decided to take this on project with funding from an EPA grant. The first task was removing blackberries to enable access for soil sampling. To advance "green remediation" (i.e., avoiding use of mechanized equipment), DEQ hired a herd of goats to clear the site. A Metro-sponsored Illegal Dumping Patrol Program also helped with garbage removal, and a community group completed final clearing of residual blackberry canes/roots and other vegetation that the goats could not remove.

Soil samples came back clean, except for one corner of the property where significant refuse dumping had contaminated some soil with low levels of asbestos. Green Lents requested and received funding from Business Oregon to remove this soil. DEQ made a No Further Action decision for the site in Aug. 2016, and several weeks later, Green Lents and other local organizers held a well attended open house (despite rainy weather) to inaugurate the new Malden Court Community Orchard. This is one example of the many brownfields success stories in which DEQ is a partner.

Oregon Brownfields Coalition

In 2014, DEQ joined the *Oregon Brownfields Coalition*, a diverse group of public, private, and nonprofit partners with a common agenda of finding collaborative strategies to transform brownfield liabilities into community assets quickly and equitably. On top of our successes in the 2015 legislative session, including recapitalizing Business Oregon's Brownfields Redevelopment Fund and allowing local communities to create land banks, the 2016 legislative session resulted in passage of a bill authorizing local property tax reductions for certain expenses related to remediating brownfield sites.

The Coalition plans to continue work on recommending effective brownfields financial and policy incentives in calendar year 2017, as well as consider other tools designed to enhance brownfields identification, cleanup and reuse in Oregon. DEQ intends to remain an active partner in the Coalition.

Northeast Oregon Economic Development District

The Northeast Oregon Economic Development District was established in 1985 to as a way to enhance community and economic development services in Baker, Union and Wallowa counties. NEOEDD was awarded a Brownfield grant in 2012 to provide Phase I and Phase II environmental assessments for qualifying public and privately-owned Brownfield properties in Baker, Union and Wallowa counties. Grant funding has recently finished in 2016, and NEOEDD and DEQ were able to provide environmental services at multiple sites, in La Grande, Wallowa, Union, and Baker City.

Bend Demo Landfill

DEQ continues to work with Deschutes County, the Oregon State University system, and other stakeholders on acquisition and redevelopment of the former Bend Demo Landfill in Bend as part of the OSU Cascades campus. In late 2015, an IGA loan from DEQ's Solid Waste Orphan Account to Deschutes County for additional characterization of the landfill was awarded. The loan helped to pay for a pilot study that evaluated the feasibility of removing landfill material. In Aug. 2016, DEQ helped facilitate an award of a \$60,000

Oregon Brownfields Redevelopment Fund Grant to OSU-C for completion of an environmental/engineering due diligence assessment for the property. The assessment will be used toward the possible acquisition of the property by OSU through the prospective purchaser agreement process.

Prospective Purchaser Agreements

Prospective purchaser agreements facilitate the cleanup of properties contaminated with hazardous substances and their return to productive use. 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 prospective purchaser agreement 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 important public purpose. For each project, DEQ uses its discretion in determining what constitutes a substantial public benefit, believing that flexibility is a key component in bringing new site uses having the best outcomes for the local community.

During fiscal year 2016, DEQ completed 14 prospective purchaser agreements and worked on a number of others, which are still in progress. Examples of projects with recently completed agreements are described below.

Nonprofit Development of Affordable Urban Housing (1st & Arthur PPA)

The nonprofit entity Central City Concern is collaborating to develop a 39 unit affordable housing project on a small parcel at 110 SW Arthur St., near the Portland downtown area. The site was used as a retail gas station from the mid-1960s through 2001, when the station was demolished and the tanks decommissioned; the property has since been vacant. Considerable removal and remedial action has taken place on the property, paid for by the responsible parties, though residual petroleum impacts remain. The purchaser is complying with a DEQ Contaminated Media Management Plan (mostly the safe handling of contaminated soil) as redevelopment progresses. The purchaser completed acceptable soil vapor sampling, submitted a final corrective action, and established long-term controls as necessary to manage risks from vapor intrusion into the new buildings. This PPA supports the conversion of this vacant property to much needed affordable housing in a central urban location, a major undertaking for CCC and its many public and private partners.

Public/Private Partnership on Transit Oriented Development (Group 701 PPA)

Private developer Group 701 has worked with the City of Portland and DEQ to start redevelopment of the 2-acre Schulz Property site in the Gateway area of northeast Portland. This property was formerly used for processing wastes from portable toilets, and a tenant who took over the business apparently had engaged in illegal dumping of various waste streams. Despite several past cleanup attempts, contamination remained in the subsurface soil and proved was an ongoing impediment to redevelopment. For example, in 2008 the City of Portland used its Brownfield fund to remove 6,370 yards of contaminated soil and three underground storage tanks, but more contamination was found after its funding ran out. The Portland Development Commission then took an interest in the property, performing additional investigation, but ultimately decided not to acquire the property. The extensive remaining cleanup work and unhappy neighbors were serious impediments, and the city also faced internal conflicts about developing a street through the property to improve the local grid (which could reduce property values). Finally, Group 701 stepped in to navigate these many challenges by negotiating a PPA with DEQ, purchasing the property, and completing cleanup in the fall of 2016. Group 701 also installed a soil vapor extraction system to address solvent vapors migrating off the property and below nearby buildings. DEQ's PPA has paved the way for redevelopment in this area, as called for in Portland's land use and transportation plans.

Local Government Protecting Against Floods and Restoring Habitat (Tillamook County PPA)

Tillamook County implemented a several hundred acre Southern Flow Corridor project, designed to reduce flooding effects by removing man-made impediments to high water and restoring and protecting tidal wetland habitats at the confluence of the Wilson and Trask Rivers. The county entered into a PPA with DEQ for the 65-

acre Sadri property, which is part of the SFC and has legacy contamination from prior log and veneer mills. As a part of the project, the county completed a Contaminated Media Management Plan; designed and constructed a suitable soil cell for placement of contaminated soils on a portion of the site, with the surface of the soil cell becoming a parking lot and public space adjacent to the SFC; recorded an Easement and Equitable Servitude; and established soil or soil/vegetative cover as needed over excavated surfaces. The property covered by this PPA is a crucial part of the overall SFC, and allows the county to incorporate this parcel into the overall project, thereby providing substantial flood protection for the local community and new parking for all in this natural area.

Orphan Sites

*Industrial Orphan sites*¹ are contaminated properties whose responsible parties are unknown, unwilling, or unable to conduct cleanup. These sites include individual properties as well as area-wide sites where hazardous substances have affected sources of drinking water.

DEQ generally designates a site as an orphan site when it poses serious threats to human health or the environment, and may also consider designating as orphans those contaminated sites with significant but unrealized redevelopment potential. DEQ will also refer large complex orphan sites to EPA for listing on the National Priorities List and use the orphan fund to pay the State match for remedial action costs. Since 1992, DEQ has declared 107 sites as industrial orphans. It is important to note that 32 of these sites have been cleaned up to NFA status, with many now supporting enhanced uses through redevelopment. The remaining orphan sites are in various stages of investigation and cleanup, including operation and maintenance (such as continued long-term operation of treatment systems to protect drinking water resources). In fiscal year 2016, DEQ actively worked on about 20 orphan sites.

The 2011 Legislature approved a hazardous substance possession fee-financed bond sale, sold Nov. 15, 2012, which provided \$7.57 million to fund planned Industrial Orphan site expenditures through fiscal year 2017. Because that new bond issue utilizes all of the approximately \$500,000 raised by the hazardous substance possession fee annually, future bond issues will need to be financed by General Fund dollars that have financed most previous bond sales unless another revenue stream is identified. Based on ongoing and projected future Orphan cleanup work, DEQ projects the funds from the 2012 bond sale coupled with cost recovery activities (see below) will be exhausted by the end of the 2017 fiscal year.

Key considerations for DEQ's orphan program are:

- Site prioritization. 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.
- Cost recovery. Since 1991, DEQ has returned approximately \$9.2 million to the orphan site account by recovering a portion of previous orphan expenditures from responsible parties (and/or their insurance companies). While prospects for additional cost recovery are limited, DEQ will continue pursuing cost recovery opportunities in order to maximize funding available for current and future orphan site investigation and cleanup activities.
- Anticipated future funding needs are significant and are increasing. Beginning in fiscal year 2018, and subject in part to the cost and timing of EPA's remedial activities at federal Superfund sites in Oregon, DEQ anticipates that between \$10 million and \$12 million of new orphan funds will be required to meet its estimated funding requirements for the ensuing two biennia. This is in part due to federal Superfund law, under which states are required to contribute ten percent to the cost of EPA-funded remedial actions at sites with no viable responsible parties.

¹ There is also a *Solid Waste Orphan* account to clean up contaminated solid waste landfills, funded by solid waste disposal fees rather than bond sales. To date, DEQ has declared four former landfills as solid waste orphans.

In summary, over the next four to ten years, DEQ (and the state) face a very significant issue in paying for orphan site cleanups and the required state share of remedial-action costs at Superfund sites. This will likely require far more funding than has been available in DEQ's orphan site account in the past.

3. Cleanup Milestones and Projections

Cleanup Phases Initiated and Completed for Fiscal Year 2016, and Forecast for Fiscal Year 2017

Site actions	FY 2016 (Actual)		FY 2017 (Forecast)	
	Initiated	Completed	Initiated	Completed
Suspected Release Sites Added to Database		136		60
Added to Confirmed Release List		3		6
Added to Inventory		3		5
Site Screenings	28	19	12	15
Preliminary Assessments	3	4	7	8
Removal Actions	8	9	10	12
Remedial Investigations	2	4	13	15
Feasibility Studies	3	6	8	8
Records of Decision	5	5	5	5
Remedial Actions	4	7	12	13
No Further Action Determinations		73		85

Fiscal year 2017 forecasts are based on estimates developed as part of the four-year plan shown below, as well as on developments during calendar year 2016. Actions for which initiation and completion dates are always the same show data for completions only.

Four-Year Plan: Projected Cleanup Actions, 7/1/15 – 6/30/19

Site actions	2015-17 Biennium	2017-19 Biennium
Suspected Releases Added to Database	160	155
Added to Confirmed Release List	15	15
Added to Inventory	14	14
Site Screenings	35	33
Preliminary Assessments	17	17
Removal Actions	23	23
Remedial Investigations	25	27
Feasibility Studies	18	15
Records of Decision	10	10
Remedial Actions	22	22
No Further Action Determinations	180	185

This four-year plan was created for the 2015 Environmental Cleanup Annual Report.