

Site Redevelopment Profile

Carson River Mercury Site

Along the Carson River in Carson City and Lyon, Storey, Churchill and Washoe counties, Nevada

Property Overview

Size

About 330 square miles

Current Site Uses

- Land use in Operable Unit 1 (OU1) includes commercial and residential use.
- Land use in Operable Unit 2 (OU2) is primarily tourism, residential, commercial, rural and agricultural uses, and includes recreational areas as well as wildlife habitat.

Use Restrictions

- EPA strongly recommends not consuming fish from the Carson River from Dayton to Lahontan Dam and all waters in Lahontan Valley.

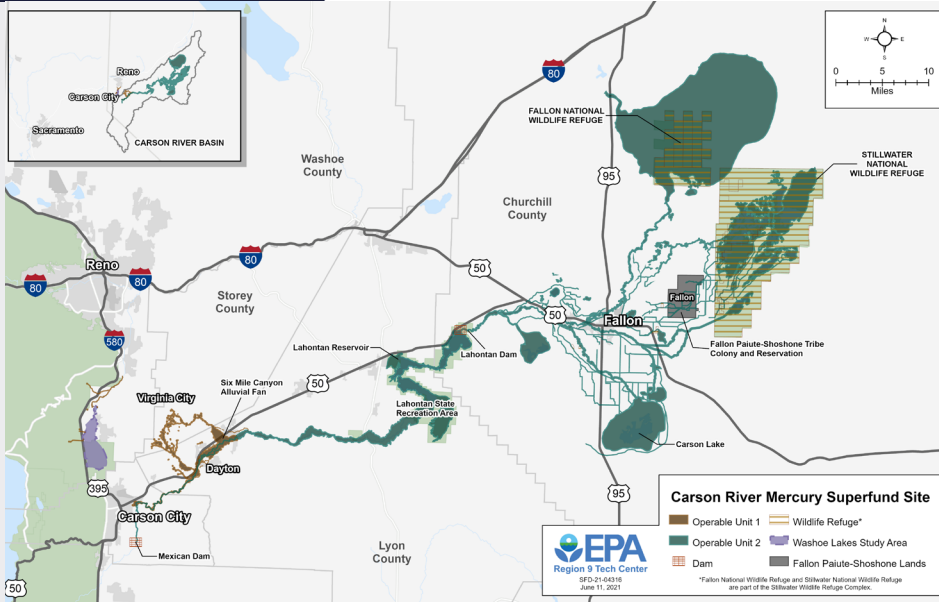


Figure 1. The Carson River Mercury site in Nevada

Surrounding Population

4,585	60,428	128,651	181,388
ON-SITE	1 MILE	3 MILES	5 MILES

Site History and Redevelopment Timeline

Late 1800s

Miners discovered large natural deposits of gold and silver in Virginia City, Nevada. Miners used about 14 million pounds of mercury to process gold and silver ore. About 236 mills processed the ore. Over several decades, the milling process released mercury, lead and arsenic into the environment. Contaminated tailings built up in the mine and mill sites. Over time, the tailings washed into the Carson River and farther downstream to the floodplain and wetlands, causing widespread contamination.

Early 1970s

The United States Geological Survey (USGS) reported high levels of mercury in the Carson River's sediment and water.

1990

EPA added the site to the Superfund program's National Priorities List (NPL).

1995-1999

EPA selected a cleanup plan for OU1, which includes the old mill sites and tailings. EPA removed contaminated soil from select areas and disposed of it off site. In one area, EPA did not remove contaminated soil, but placed clean soil over the area as a cap.

2006-2018

EPA and the Nevada Department of Environmental Protection (NDEP) developed a Long-Term Sampling and Response Plan to address mercury contamination in residential soil. EPA and NDEP revised the plan in 2011 and 2018.

2021-2022

EPA proposed an interim cleanup plan for OU2, which includes soil and sediment in waterways. The plan includes a combination of land use controls, monitoring, and public outreach to recommend that people not consume fish from certain areas. EPA gathered input from the public and began the process to select the interim cleanup plan.

Present

Residential development is ongoing in portions of OU1 and OU2. EPA's Superfund Redevelopment Program is working with site stakeholders to develop a renewable energy situational assessment for the site.

History and Cleanup

In 1859, miners discovered large natural deposits of gold and silver in Carson City, Virginia City, and Dayton, Nevada. During the mining era, about 14 million pounds of mercury was discharged into the Carson River drainage, primarily in the form of mercury-contaminated tailings. Changes in the way miners processed the ores over time also caused arsenic and lead contamination in certain areas. In the early 1970s, the USGS reported high levels of mercury in the Carson River's sediment and water.

In 1990, EPA added the Carson River Mercury Superfund site to the NPL. The site covers five counties, about 330 square miles, and more than 130 river miles in Northwestern Nevada. Historic mill sites in Carson City, Virginia City, Dayton, and Washoe and Pleasant valleys have mercury contamination. Waterways located next to mill sites spread mercury from the 100-year floodplain of Carson River to its ends. EPA's site investigation found mercury in soil, sediments, fish and wildlife.

The site consists of two OUs. OU1 includes of the old mill sites and tailings. OU2 covers the Carson River and adjacent floodplain. At OU1, EPA conducted cleanup work in the early 1990s, removing over 10,000 cubic yards of contaminated soil for disposal off site. EPA selected a cleanup plan in 1995 and removed about 9,000 cubic yards of additional contaminated soils. EPA disposed of contaminated soils off site and backfilled with clean soil. In one location, EPA did not remove or backfill soil, but placed clean soil over the contaminated area. These activities help protect people from exposure to soils with high mercury, arsenic and lead levels. EPA and NDEP restored and landscaped contaminated areas.

EPA is selecting an interim cleanup plan for OU2. The proposed interim cleanup plan includes land use restrictions and monitoring. EPA is also doing public outreach, recommending not consuming fish in certain areas and staying away from mercury-contaminated soils.



19,000
cubic yards of
contaminated soils
removed



70
development proposals
reviewed by NDEP and
EPA



28
residential
developments where soil
has been sampled



Figure 2. Carson River boat launch



Figure 3. Bilingual health advisory signs

Redevelopment

EPA and NDEP developed a Long-Term Sampling and Response Plan in 2006 and finalized it in 2018. The plan requires sampling and, if needed, cleanup, on properties slated for residential use. Additionally, EPA and NDEP require Environmental Covenants are added to the land title, notifying prospective purchasers that the soil has been tested at a fixed depth and deeper grading or excavation would require additional testing.

Since the 1990s, EPA and NDEP have reviewed more than 70 property development proposals. NDEP has also done detailed soil sampling at 28 residential developments. EPA and NDEP worked with developers to help prevent the spread of mercury contamination by covering or capping contaminated soils.

For example, in 2010, the developer of the Onda Verde Subdivision hired an environmental consultant to conduct a mercury-contamination assessment. The 27-acre subdivision was mostly undeveloped, with some graded land and paved access roads. In Fall 2011, the developer's environmental consultant notified NDEP about construction work and developed a Sampling and Analysis Plan in keeping with the Long-Term Sampling and Response Plan. On EPA's behalf, NDEP approved the work. By the winter, the consultants completed the assessment and evaluated 138 undeveloped residential lots and one partially developed lot. The mercury levels were below those that could cause human health risk and the development proceeded as planned.

The Carson River is surrounded by several recreational parks, refuges and wildlife management areas including Lahontan Reservoir, Carson Lake, Little Washoe Lake, Big Washoe Lake, Indian Lakes, and Stillwater National Wildlife and Fallon National Wildlife refuges. Due to high mercury levels in fish, the Nevada State Health Division has issued a health advisory. The health advisory strongly recommends not consuming fish from the Carson River from Dayton to Lahontan Dam and all waters in the Lahontan Valley. Catch and release fishing, swimming and other recreational activities are safe. EPA's upcoming interim cleanup plan, also known as an interim Record of Decision for OU2 will further reduce risk to human health by discouraging people from eating contaminated fish, along with wild plants and waterfowl.

In August 2021, EPA's Superfund Redevelopment Program began providing EPA's Pacific Southwest region (EPA Region 9), NDEP and site stakeholders with technical assistance to develop a renewable energy situational assessment for the site. The assessment includes a solar screening to identify areas for utility scale and small-scale solar power generation.

Solar Development

EPA's Superfund Redevelopment Program is collaborating with state and federal agencies and The Nature Conservancy to determine areas most suitable for solar and other renewable energy development on the site. Several areas within the site have been identified as potentially suitable for solar. These areas will be further explored by The Nature Conservancy as part of a statewide effort called *Mining the Sun*. This effort is a collaboration between The Nature Conservancy and the Nevada Mining Association to promote the development of renewable energy plants on historic mining sites in Nevada.

Contacts

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For more information, please visit [epa.gov/superfund-redevelopment](https://www.epa.gov/superfund-redevelopment).



Figure 4. Residential use in Carson City, Nevada

