Draft Second Periodic Review
Former Shell Oil Tank Farm

14th Street and Q Avenue, Anacortes, WA 98221
Facility Site ID: 4781157, Cleanup Site ID: 4846

Toxics Cleanup Program, Headquarters

Washington State Department of Ecology
Lacey, Washington

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Document Information

This document is available on the Department of Ecology's Shell Oil Tank Farm cleanup site page.[1]

Related Information

- Facility Site ID: 4781157
- Cleanup Site ID: 4846

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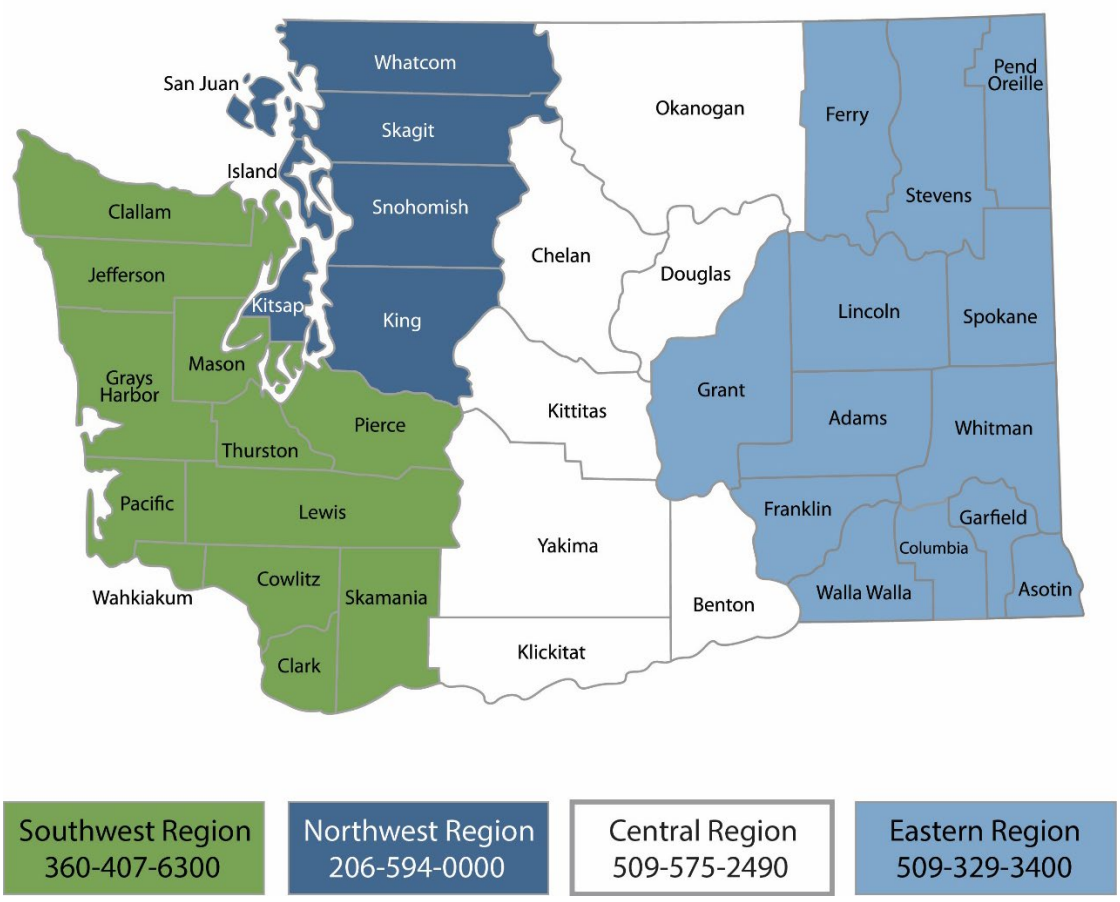
[1] https://apps.ecology.wa.gov/cleanupsearch/site/4846
[2] https://ecology.wa.gov/About-us/Who-we-are/Our-Programs/Toxics-Cleanup
[3] https://ecology.wa.gov/about-us/accessibility-equity/accessibility

Department of Ecology's Regional Offices

Map of Counties Served



Southwest Region 360-407-6300	Northwest Region 206-594-0000	Central Region 509-575-2490	Eastern Region 509-329-3400

Region	Counties served	Mailing Address	Phone
Southwest	Clallam, Clark, Cowlitz, Grays Harbor, Jefferson, Mason, Lewis, Pacific, Pierce, Skamania, Thurston, Wahkiakum	PO Box 47775 Olympia, WA 98504	360-407-6300
Northwest	Island, King, Kitsap, San Juan, Skagit, Snohomish, Whatcom	PO Box 330316 Shoreline, WA 98133	206-594-0000
Central	Benton, Chelan, Douglas, Kittitas, Klickitat, Okanogan, Yakima	1250 W Alder St Union Gap, WA 98903	509-575-2490
Eastern	Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Spokane, Stevens, Walla Walla, Whitman	4601 N Monroe Spokane, WA 99205	509-329-3400
Headquarters	Across Washington	PO Box 46700 Olympia, WA 98504	360-407-6000

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Introduction

The Washington State Department of Ecology (Ecology) reviewed post-cleanup site conditions and monitoring data to ensure human health and the environment are being protected at the former Shell Oil Tank Farm (Tank Farm) cleanup site (Site). Site cleanup was implemented under the Model Toxics Control Act (MTCA) regulations, Chapter 173-340 Washington Administrative Code (WAC). This is the second periodic review conducted for this Site. Ecology completed the first periodic review in September 2020 (Ecology, 2020).

Cleanup activities at this Site were completed under Consent Decree No. 14-2-01249-0 (dated July 14, 2014). Residual concentrations of petroleum hydrocarbons, cadmium, benzene, and carcinogenic polycyclic aromatic hydrocarbons (cPAHs) that exceeded MTCA cleanup levels remain at the Site. The MTCA cleanup levels for soil and groundwater are established under WAC 173-340-740[4] and WAC 173-340-720,[5] respectively.

Ecology determined institutional controls in the form of an environmental covenant would be required as part of the cleanup action for the Site. WAC 173-340-420(2)[6] requires Ecology to conduct a periodic review of certain sites every five years. For this Site, a periodic review is required because an institutional control is required as part of the cleanup action.

When evaluating whether human health and the environment are being protected, Ecology must consider the following factors (WAC 173-340-420(4)):

a) The effectiveness of ongoing or completed cleanup actions, including the effectiveness of engineered controls and institutional controls in limiting exposure to hazardous substances remaining at the site.

b) New scientific information for individual hazardous substances or mixtures present at the site.

c) New applicable state and federal laws for hazardous substances present at the site.

d) Current and projected site and resource uses.

e) The availability and practicability of more permanent remedies.

f) The availability of improved analytical techniques to evaluate compliance with cleanup levels.

Ecology publishes a notice of all periodic reviews in the *Site Register* and provides an opportunity for public comment.

[4] https://app.leg.wa.gov/WAC/default.aspx?cite=173-340-740
[5] https://app.leg.wa.gov/WAC/default.aspx?cite=173-340-720
[6] https://app.leg.wa.gov/WAC/default.aspx?cite=173-340-420

Summary of Site Conditions

Site description and history

The Tank Farm area was originally a portion of the Fidalgo Bay tide flats which were filled to the current grade (up to the former bulkhead just east of Q Avenue shown in Appendix B) between 1925 and 1929. The property was acquired by the Port in 1929, and leased to Shell Oil Company in 1930 for use as a bulk fuel storage and distribution facility that primarily handled gasoline and diesel-range fuels. The approximate locations of the historical pump house, fill stand, underground storage tanks (USTs), above ground storage tanks (ASTs), and associated product supply lines are shown in Appendix B. The Site operated as a bulk fuel storage facility under Shell and various bulk product distributors until 1987. Operations on the property ended in 1987 and the bulk terminal was reportedly decommissioned, including removal of all tanks, associated piping, and site structures.

According to the Shell engineering drawing, the original facility layout included three 25,000-gallon ASTs in the south portion of the Site and one 2,000-gallon UST located north of the ASTs. Two of the ASTs stored gasoline and the third contained diesel fuel. The contents of the UST are not well documented. Historic fuel supply lines connected the ASTs and pump house to a historical pier/fuel float located east of the Tank Farm across Q Avenue. Historically, gasoline and diesel were pumped from the pier via the fuel supply lines to the bulk fuel facility for storage and distribution. Two 12,500-gallon ASTs and one 4,000-gallon UST were installed in the early 1950s. It is unknown if the 4,000-gallon UST was installed as a replacement for the 2,000-gallon UST. The precise locations of the two newer ASTs are unknown; however, a total of four ASTs are visible in the 1966 and 1979 aerial photographs and in the same area as the three ASTs shown on the 1930 site layout drawing. Gasoline, diesel and stove oil were reportedly stored in the ASTs. Dry cleaning solvent, and subsequently diesel, were reportedly stored in the 4,000-gallon UST. Based on interviews of several distributors who had historically operated at the Site, dry cleaning solvents and petroleum products were distributed from the Site.

Prior to 1947, the area east of Q Avenue consisted of tide flats. From 1930 to approximately 1947, the historic fuel supply lines were hanging from joists, as shown in Shell's 1930 layout plan. In the late 1940s to early 1950s, the area east of Q Avenue was filled with dredged material from the adjacent federal waterway, and a second bulkhead was constructed farther to the east near the current shore of Fidalgo Bay. It appears that the fuel supply lines east of Q Avenue were re-configured as underground lines during the filling activities in the late 1940s and early 1950s. The former Shell Oil Tank Farm operated as a bulk fuel storage facility under Shell and various bulk product distributors until 1987. Bulk fuel storage and distribution operations ended in 1987, and the facility was reportedly decommissioned, including removal of all tanks, and associated piping and structures. A vicinity map is in Appendix A and a Site plan is in Appendix B.

Site investigations

In April 1987, two groundwater monitoring wells were installed on the Site. One soil sample was collected from each well and analyzed for lead and diesel. One soil sample was analyzed for oil. Lead was not detected in either sample. Diesel was detected in one sample at a concentration exceeding the MTCA Method A standard. Oil was not detected in the one sample analyzed. One groundwater sample was collected from each monitoring well and analyzed for benzene, toluene, xylene, and total lead. Benzene, toluene, and xylene were detected below their respective MTCA Method A standards in one groundwater sample (all three in the same groundwater sample). Lead was detected exceeding the MTCA Method A standard in both groundwater samples.

In August 2005, five soil borings were installed on-site. One to three soil samples were collected from each soil boring and analyzed for benzene, ethylbenzene, toluene, xylene, gasoline, diesel, and oil. Benzene, ethylbenzene, toluene, and xylene were not detected in all nine soil samples, with concentrations below their respective MTCA Method A standards. Gasoline was detected as estimated in six of nine soil samples, with four of six estimated concentrations exceeding the MTCA Method A standard. Diesel was detected in all nine soil samples, with two of nine concentrations exceeding the MTCA Method A standard. Oil was detected below the MTCA Method A standard in five of nine soil samples. Groundwater grab samples were collected from each of the five soil borings and from two additional soil borings and analyzed for benzene, ethylbenzene, toluene, xylene, gasoline, diesel, and oil. Ethylbenzene and toluene were not detected in any of the seven groundwater grab samples. Benzene and xylene were detected below their respective MTCA Method A standards in one of seven groundwater grab samples (not the same groundwater sample). Gasoline was detected below the MTCA Method A standard in three of seven groundwater grab samples. Diesel was detected exceeding the MTCA Method A standard in two of seven groundwater grab samples. Oil was not detected in any of the seven groundwater grab samples.

In May 2007, as part of a remedial investigation of an adjoining site, three additional soil borings were installed on the Tank Farm site. Three soil samples were collected from each soil boring and analyzed for benzene, ethylbenzene, toluene, xylene, gasoline, diesel, oil, lead, and carcinogenic and non-carcinogenic polycyclic aromatic hydrocarbons (PAHs). Benzene, ethylbenzene, and toluene were not detected in any of the soil samples. Xylene was detected below the MTCA Method A standard in one of nine soil samples. Gasoline was detected in two of nine soil samples, with one of two concentrations exceeding the MTCA Method A standard. Diesel was detected below the MTCA Method A standard in six of nine soil samples. Oil was detected below the MTCA Method A standard in eight of nine soil samples. While one soil sample from each of the three locations had no detections of PAHs, the other two samples from each location had detections of various PAHs. All concentrations were below their respective MTCA Method A or Method B standards, where such standards have been established. Similarly, one soil sample from each of three locations had no detections of carcinogenic PAHs, the other two samples from each location had detections of various

carcinogenic PAHs. Two of the six concentrations, in terms of toxicity equivalents, exceeded the MTCA Method A standard.

In November 2007, as part of an interim remedial action, four test pits were excavated on-site. Five soil samples were collected from the four test pits, with four soil samples analyzed for benzene, ethylbenzene, toluene, xylene, gasoline, diesel, oil, arsenic, cadmium, chromium III, lead, mercury, polychlorinated biphenyls, and carcinogenic and non-carcinogenic PAHs. The fifth soil sample was analyzed only for cadmium; no cadmium was detected in this sample. Benzene, ethylbenzene, toluene, xylene, gasoline, diesel, and polychlorinated biphenyls were not detected in any of the four soil samples. Oil was detected below the MTCA Method A standard in one of four soil samples. Chromium III was detected in all four soil samples, lead was detected in three of four soil samples, and arsenic and mercury were detected in two of four soil samples, all below their respective MTCA Method A standards. Cadmium was detected exceeding the MTCA Method A standard in one of five soil samples. Three of four soil samples had no detections of carcinogenic or non-carcinogenic PAHs. The fourth soil sample had detections of three of nine (fluoranthene, pyrene, and benzo(g,h,i)perylene) but the concentrations did not exceed the respective MTCA Method B standards, where such standards have been established. The same sample had detections of six of seven carcinogenic PAHs, but the toxicity equivalent of the concentrations did not exceed the MTCA Method A standard.

In August 2011, a geophysical survey was conducted to determine in a historic underground storage tank had been removed. No underground storage tank was detected but a tank-sized excavation was detected, suggesting that the tank was removed in the past. In November 2011, thirty-five soil borings were installed on-site, followed in February 2012 by seven groundwater monitoring wells (GeoEngineers, 2014). Eighty-five soil samples were analyzed for benzene, ethylbenzene, toluene, xylene, other volatile organic compounds, gasoline, diesel, oil, cadmium, lead, naphthalenes, seven carcinogenic PAHs, and/or polychlorinated biphenyls. The following table details the number of analytes, number of detections, and number of exceedances from the November 2011 soil sampling event.

Table 1 – November 2011 Analytical Soil Summary

Analyte	Number of samples analyzed	Number of detections	Number of MTCA exceedances
Benzene	74	7	1
Ethylbenzene	74	0	0
Toluene	74	6	0
Xylene	74	7	0
Methyl tertiary butyl	17	0	0
1,2-Dibromomethane	17	0	0
1,2-Dibromoethane	17	0	0
Tetrachloroethene	7	0	0
Trichloroethene	7	0	0
Cis 1,2-dichloroethene	7	0	0
Vinyl chloride	7	0	0
1,1,1-Trichloroethane	7	0	0
Trichlorofluoromethane	7	0	0
Carbon tetrachloride	7	0	0
1-Methylnaphthalene	37	13	0
2-Methylnaphthalene	37	10	0
Naphthalene	37	15	0
Gasoline	79	3	3
Diesel	76	31	6
Oil	74	21	1
cPAHs	36	8	4
Cadmium	11	3	0
Lead	48	10	0
Polychlorinated biphenyls	5	0	0

MTCA = Model Toxics Control Act
cPAHs = carcinogenic polycyclic aromatic hydrocarbons
cPAHs include benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno 1,2,3-cd pyrene, and dibenzo(a,h)anthracene

One groundwater sample was collected from each of seven groundwater monitoring wells and analyzed for the same analytes as the soil samples, except for polychlorinated biphenyls. The following table details the number of analytes, number of detections, and number of exceedances from the March 2012 groundwater sampling.

Table 2 – March 2012 Analytical Groundwater Summary

Analyte	Number of samples analyzed	Number of detections	Number of MTCA exceedances
Benzene	7	0	0
Ethylbenzene	7	0	0
Toluene	7	0	0
Xylene	7	1	0
Methyl tertiary butyl	1	0	0
1,2-Dibromomethane	1	0	0
1,2-Dibromoethane	1	0	0
Tetrachloroethene	1	0	0
Trichloroethene	1	0	0
Cis 1,2-dichloroethene	1	0	0
Vinyl chloride	1	0	0
1,1,1-Trichloroethane	1	0	0
Trichlorofluoromethane	1	0	0
Carbon tetrachloride	1	0	0
1-Methylnaphthalene	7	1	0
2-Methylnaphthalene	7	0	0
Naphthalene	7	2	0
Gasoline	7	2	0
Diesel	7	0	0
Oil	7	0	0
cPAHs	7	2	0
Cadmium	1	0	0
Lead	7	1	0

MTCA = Model Toxics Control Act
cPAHs = carcinogenic polycyclic aromatic hydrocarbons
cPAHs include benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno 1,2,3-cd pyrene, and dibenzo(a,h)anthracene

Cleanup actions

In 1987, all tanks, piping, and structures on-site were removed. The site was paved with asphalt (no report available).

In November 2014, 4,300 cubic yards of contaminated soil was excavated and taken off-site to a permitted facility. Fifty-two confirmational soil samples were collected from the excavation area and analyzed for gasoline, diesel, oil, cadmium, benzene, and seven cPAHs. Forty-seven soil samples had no exceedances of the Site cleanup levels for any analyte. One soil sample had exceedances of the cleanup levels for three cPAHs and a second soil sample had an exceedance of the cleanup level for cadmium. The area represented by these two samples was over-excavated. Additionally, one soil sample had an exceedance of the cleanup level for diesel; one soil sample had an exceedance of the cleanup levels for diesel, oil, and cadmium; and a third soil sample had exceedance of the cleanup levels for diesel, gasoline, and benzene. As these three soil samples were adjacent to a utility line, they could not be over-excavated (GeoEngineers, 2015).

Groundwater monitoring

In August and December 2015 and March and June 2016, confirmational groundwater samples were collected from four on-site groundwater wells and analyzed for gasoline, diesel, oil, and benzene. One well was also analyzed for total and dissolved cadmium. Total and dissolved cadmium was not detected in the sample. Gasoline and benzene were not detected in any sample in any of the four rounds of sampling. Oil was detected below the MTCA Method A standard in one well in the first round and in a different well in the fourth round of sampling. Diesel was detected below the MTCA Method A standard in one well in the second round and in a different well in three of the four rounds. In June 2017 and 2018, two groundwater wells were sampled for gasoline, diesel, and oil in each round (the same two wells). Gasoline and oil were not detected in either well in either round. Diesel was detected below the MTCA Method A standard in both rounds in one well and in one of two rounds in the second well. In June 2023, monitoring well GEI-MW-7 was sampled for gasoline, diesel, and oil. All results were below the laboratory detection limits.

Cleanup standards

Cleanup standards include cleanup levels, the location where these cleanup levels must be met (point of compliance), and any other regulatory requirements that apply to the Site. WAC 173-340-704[7] states MTCA Method A may be used to establish cleanup levels at sites that have few hazardous substances, are undergoing a routine cleanup action, and where numerical standards are available for all indicator hazardous substances in the media for which the Method A cleanup level is being used. Method B may be used at any site and is the most

[7] https://app.leg.wa.gov/WAC/default.aspx?cite=173-340-704

common method for setting cleanup levels when sites are contaminated with substances not listed under Method A. Method C cleanup levels may be used to set soil and air cleanup levels at industrial sites.

The standard point of compliance for the human health-based direct contact soil cleanup levels presented in Table 3 is throughout the soil column from the ground surface to fifteen feet below ground surface. Because the groundwater cleanup levels shown in the above table are based on protection of marine surface water, and not protection of groundwater as drinking water, the conditional point of compliance for groundwater cleanup levels is where groundwater discharges to Fidalgo Bay.

Table 3 – Site-specific Cleanup Levels for Hazardous Substances

Former Shell Oil Tank Farm Site

Anacortes, Washington

Hazardous Substance	Soil Cleanup Level (mg/kg)	Groundwater Cleanup Level (µg/L)
Petroleum Hydrocarbons		
Gasoline-Range	30/100[2]	800/1,000[3]
Diesel-Range	2,000	500
Heavy Oil-Range	2,000	500
Volatile Organic Compound (VOC)		
Benzene	0.13	23
Carcinogenic Polycyclic Aromatic Hydrocarbons (cPAHs)		
Benzo(a)anthracene	0.13	0.018
Chrysene	0.14	0.018
Benzo(b)fluoranthene	0.43	0.018
Benzo(k)fluoranthene	0.43	0.018
Benzo(a)pyrene	0.137	0.018
Indeno(1,2,3-cd)pyrene	1.3	0.018
Dibenz(a,h)anthracene	0.65	0.018
Total cPAHs (TEQ)	0.137	0.10
Metals		
Cadmium	1.2	8.8

Notes:

[1]Site-specific cleanup levels established by the Cleanup Action Plan (Ecology, 2014).

[2]Cleanup level is 30 mg/kg when benzene is present.

[3]Cleanup level is 800 µg/L when benzene is present.

mg/kg = milligrams per kilogram

µg/L = microgram per liter

TEQ = toxicity equivalency

MTCA Method A cleanup levels for unrestricted land use were determined to be appropriate for contaminants at this Site. The cleanup actions conducted at the Site were determined to be routine, few hazardous substances were found at the Site, and numerical standards were available in the MTCA Method A table for each hazardous substance.

The point of compliance is the area where the cleanup levels must be attained. For soil cleanup levels based on the protection of groundwater, as they are for this Site, the point of compliance is established as soils throughout the Site (standard point of compliance).

Environmental Covenant

Ecology determined that institutional controls would be required as part of the cleanup action to document the remaining contamination, protect the cleanup action, and protect human health and the environment (Ecology, 2014). On May 18, 2017, institutional controls in the form of an environmental covenant[8] (Covenant) were recorded for the Site (Ecology, 2017a).

The Covenant recorded for the Site imposes the following limitations:

> …the following additional specific restrictions and requirements shall apply to a portion of the Property where contaminated soil is contained under a cap consisting of two to three feet of overburden which does not exceed soil cleanup levels and roadway and sidewalks located as illustrated in [Appendix B]. As such, the following restrictions shall apply within the area illustrated in [Appendix B] as the "Restrictive Covenant Area."
>
> a. **Containment of Soil.** The remedial action for the Property includes installation of a protective barrier of oxygen releasing material (ORM) injected on the site adjacent to the contaminated material left in place to stimulate naturally occurring microbes for enhancing biological degradation of residual organic contaminants. The contaminated soil at the Property is covered by the cap, described above. The primary purpose of this cap is to contain contamination and mitigate risk of direct human/terrestrial wildlife contact with contaminated soils.
>
> i. Any activity on the Property that will compromise the integrity of the cap including drilling; digging; piercing the cap with a sampling device, post, stake, or similar device; grading; excavation; installation of underground utilities; removal of the cap; or application of loads in excess of the cap load bearing capacity, is prohibited without prior written approval by Ecology. Upon receiving the Grantor's written request to conduct such activity, Ecology shall endeavor to respond within five (5) business days.
>
> ii. The Grantor shall report to Ecology within forty-eight (48) hours of the discovery of any damage to the cap, including but not limited to any damage caused by a third party. Unless an alternative plan has been

[8] https://apps.ecology.wa.gov/cleanupsearch/document/71351

approved by Ecology in writing, the Grantor shall promptly repair the damage and submit a report documenting this work to Ecology within thirty (30) days of completing the repairs.

b. **Monitoring**. Several groundwater wells are located on the Property to monitor the performance of the remedial action. The Grantor shall maintain clear access to these devices and protect them from damage. The Grantor shall report to Ecology within forty-eight (48) hours of the discovery of any damage to any monitoring device. Unless Ecology approves of an alternative plan in writing, the Grantor shall promptly repair the damage and submit a report documenting this work to Ecology within thirty (30) days of completing the repairs.

Periodic Review

Effectiveness of completed cleanup actions

During the Site visit Ecology conducted on December 17, 2024, the Site is currently operating as a gravel parking lot for boat trailers. A photo log is in Appendix C.

Direct contact

The cleanup actions were intended to eliminate exposure to contaminated soil at the Site. Exposure pathways to contaminated soils by ingestion and direct contact were reduced by use of surface cover and concrete/asphalt cap engineered controls. The engineered controls (e.g., paved sidewalk and roadway) appear to be in satisfactory condition, and no repair, maintenance, or contingency actions are required at this time.

Protection of groundwater

Soils with petroleum hydrocarbons, cadmium, benzene, and carcinogenic polycyclic aromatic hydrocarbons at concentrations exceeding MTCA Method A cleanup levels remain at the Site; however, most of the contaminated soil source material has been removed. As noted in the previous Groundwater Monitoring section, groundwater has been sampled for seven rounds (June and December 2015; March and June 2016; June 2017, 2018, and 2023) at monitoring wells GEI-MW-2, GEI-MW-4, GEI-MW-5, and GEI-MW-7. Sampling at monitoring wells GEI-MW-2 and GEI-MW-4 in were discontinued in 2017 accordance with Ecology's 2017 opinion letter (Ecology, 2017b). Sampling at monitoring well GEI-MW-5 was discontinued in 2018 in accordance with Ecology's 2018 opinion letter (Ecology, 2018).

Institutional controls

Institutional controls in the form of a Covenant were implemented at the Site in 2017. The Covenant remains active and discoverable through the Skagit County Auditor's office. Ecology found no evidence a new instrument has been recorded that limits the effectiveness or applicability of the Covenant. This Covenant prohibits activities that will result in the release of

contaminants contained as part of the cleanup action and prohibits any use of the property that is inconsistent with the Covenant, unless approved by Ecology in advance. This Covenant ensures the long-term integrity of the cleanup action will be protected.

New scientific information for individual hazardous substances or mixtures present at the Site

There is no new relevant scientific information for the hazardous substances remaining at the Site.

New applicable state and federal laws for hazardous substances present at the Site

There are no new applicable or relevant state or federal laws for hazardous substances remaining at the Site.

The cleanup at the Site was governed by WAC 173-340-702(12) (c) [2001 ed.] and provides that, "A release cleaned up under the cleanup levels determined in (a) or (b) of this subsection shall not be subject to further cleanup action due solely to subsequent amendments to the provision in this chapter on cleanup levels, unless the department determines, on a case-by-case basis, that the previous cleanup action is no longer sufficiently protective of human health and the environment."

Although cleanup levels changed as a result of modifications to MTCA in 2001, contamination remains at the Site above the new MTCA Method A and B cleanup levels. Even so, the cleanup action is still protective of human health and the environment. A table comparing MTCA cleanup levels from 2015 to 2025 is available below.

Table 4 – Cleanup Level Comparison Table

Analyte	2015 MTCA Method A Soil Cleanup Level (ppm)	2025 MTCA Method A Soil Cleanup Level (ppm)	2015 MTCA Method A Groundwater Cleanup level (ppb)	2025 MTCA Method A Groundwater Cleanup Level (ppb)
Gasoline	30/100	30/100	800/1,000	800/1,000
Diesel	2,000	2,000	500	500
Oil	2,000	2,000	500	500
Cadmium	1.2	2	8.8	5
Benzene	0.13	0.03	23	5
Benzo(a)anthracene	0.13	0.1	0.018	0.1
Chrysene	0.14	0.1	0.018	0.1
Benzo(b)fluoranthene	0.43	0.1	0.018	0.1
Benzo(k)fluoranthene	0.43	0.1	0.018	0.1
Benzo(a)pyrene	0.137	0.1	0.018	0.1
Indeno(1,2,3-cd)pyrene	1.3	0.1	0.018	0.1
Dibenzo(a,h)anthracene	0.65	0.1	0.018	0.1
Total carcinogenic PAHs - TEQ	0.137	0.1	0.1	0.1

MTCA = Model Toxics Control Act
ppb = parts per billion
ppm = parts per million
TPH = total petroleum hydrocarbons
TEQ = toxic equivalent concentration
PAHs – polycyclic aromatic hydrocarbons

In January 2024 the MTCA was updated; however, the updates do not modify cleanup levels or institutional controls related to the site.

Current and projected Site and resource uses

The Site is used for commercial purposes. There have been no changes in current or projected future Site or resource uses. The current Site use is not likely to have a negative impact on the protectiveness of the cleanup action.

Availability and practicability of more permanent remedies

The remedy implemented included containing hazardous substances, and it continues to be protective of human health and the environment. While more permanent remedies may be available, they are still not practicable at this Site.

Availability of improved analytical techniques to evaluate compliance with cleanup levels

The analytical methods used at the time of the cleanup action were capable of detection below the selected MTCA cleanup levels. The presence of improved analytical techniques would not affect decisions or recommendations made for the Site.

Conclusions

- The cleanup actions completed at the Site appear to be protective of human health and the environment.
- Soil cleanup levels have not been met at the Site; however, the cleanup action is determined to comply with cleanup standards under WAC 173-340-740(6)(f), since the long-term integrity of the containment system is ensured and the requirements for containment technologies have been met.
- Groundwater cleanup levels continue to remain below cleanup standards. Based on the recent (2023) groundwater monitoring results at monitoring well GEI-MW-7, it is suggested that groundwater monitoring be discontinued at this location.
- The Covenant for the property is in place and is effective in protecting human health and the environment from exposure to hazardous substances and the integrity of the cleanup action.

Based on this periodic review, Ecology has determined the requirements of the Covenant are being followed. No additional cleanup actions are required by the property owner at this time. The property owner is responsible for continuing to inspect the Site to ensure the integrity of the cleanup action is maintained.

Next review

Ecology will schedule the next review for the Site five years from the date of this periodic review. If additional cleanup actions or institutional controls are required, the next periodic review will be scheduled five years after those activities are completed.

References

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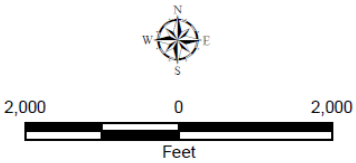
GeoEngineers, 2014. *Remedial Investigation/Feasibility Study – Former Shell Oil Tank Farm – Anacortes, Washington*. February 3.

GeoEngineers, 2015*. Construction Completion (As-Built) Report – Former Shell Oil Tank Farm Site – Anacortes, Washington*. June 26.

Appendix A. Vicinity Map



Notes:
1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. can not guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.
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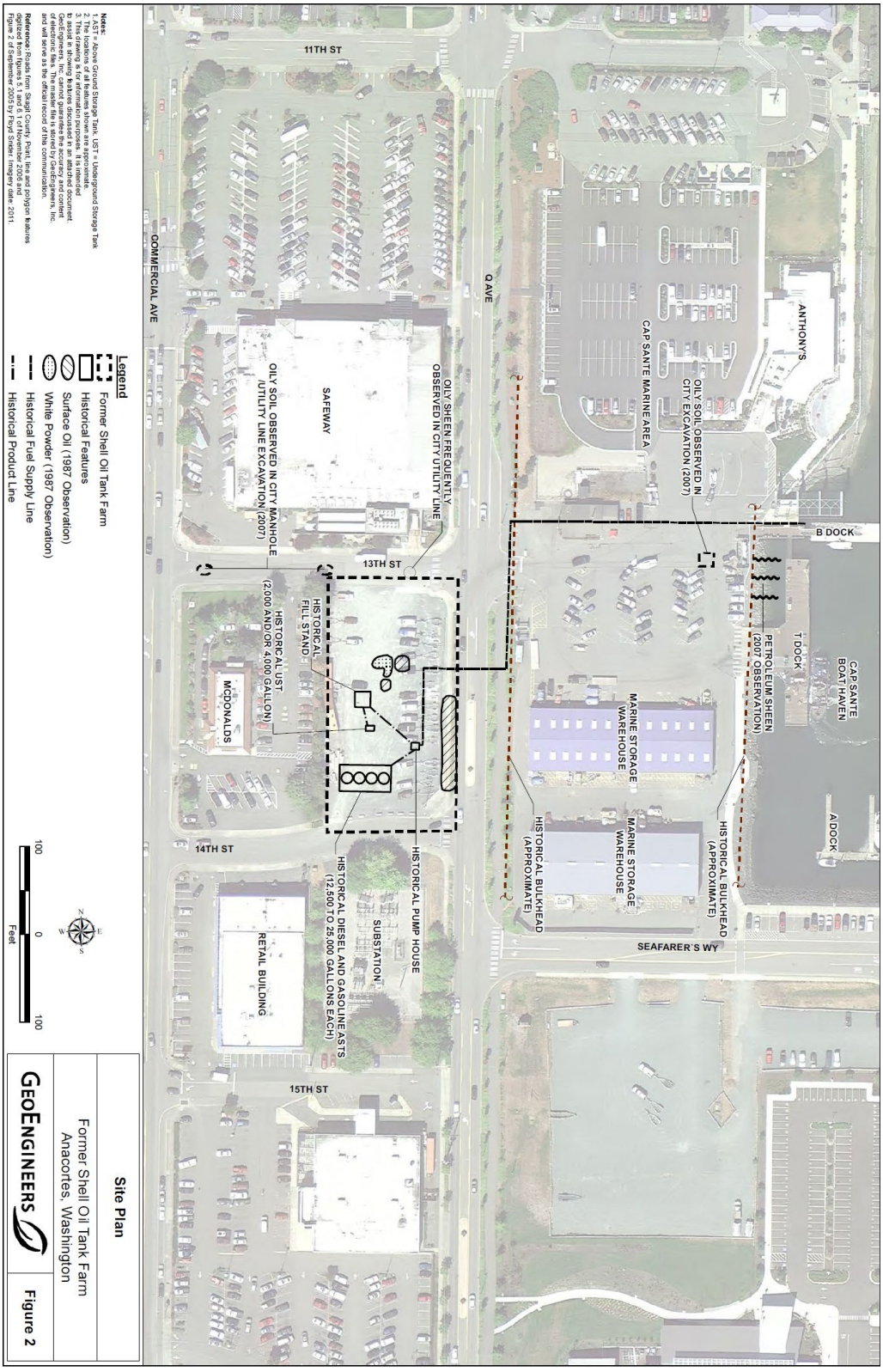
Data Sources: ESRI Data & Maps

Projection: NAD 1983 UTM Zone 10N

Vicinity Map	
Former Shell Oil Tank Farm Anacortes, Washington	
GeoEngineers	Figure 1

Appendix B. Site Plan



Appendix C. Photo Log

Photo 1: Taken at the northeast corner of the Site; looking south/southwest.

Photo 2: Taken from off-site at the north; looking south.

Photo 3: Taken from off-site at the south; looking north.

Photo 4: Taken from northeast corner of the Site; looking northeast.