Second Periodic Review
Hansville Landfill Site

7791 NE Ecology Road, Kingston, Kitsap County
Facility Site ID: 2605, Cleanup Site ID: 695

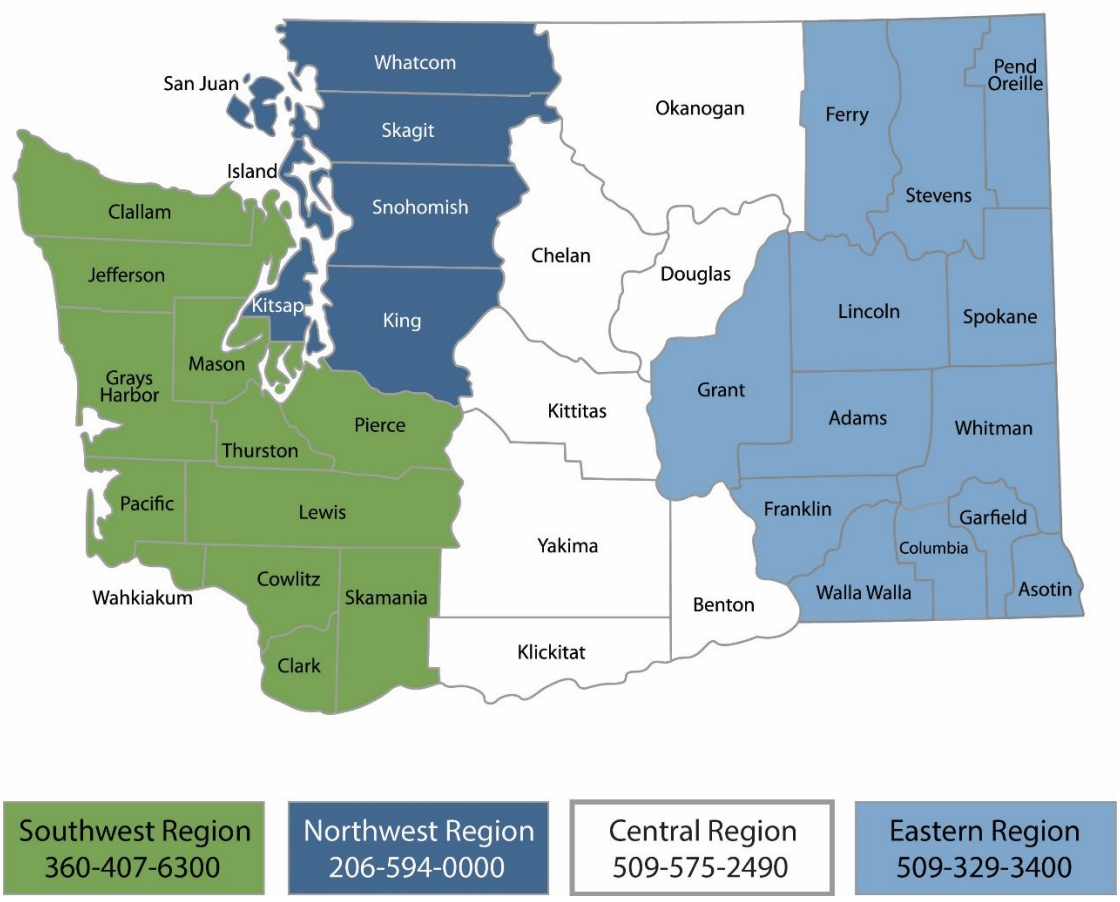
Toxics Cleanup Program, Northwest Region

Washington State Department of Ecology
Shoreline, Washington

May 2026

Department of Ecology's Regional Offices

Map of Counties Served



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 Hansville Landfill 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 May 2017.

Cleanup activities at this Site were completed under Consent Decree No. 95 2 03005 1, dated October 4, 1995, and amended August 5, 2011. Residual concentrations of arsenic, bis (2-ethylexyl) phthalate, cooper, lead, manganese, nickel, nitrate, silver, zinc, and vinyl chloride that exceeded MTCA cleanup levels remain on the property in soil and groundwater. 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 would be required as part of the cleanup action for the Site. The institutional controls include an environmental covenant (Covenant) with Kitsap County for the landfill portion of the Site, and a Protection Area managed by the Port Gamble S'Klallam Tribe for the portion of the Site on Tribal land. 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 Ecology approved the cleanup action under a consent decree where engineered and institutional controls were required as part of the cleanup.

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; and,

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

[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

Ecology published a notice of this periodic review in the *Site Register* and provided an opportunity for public comment.

Summary of Site Conditions

Site description and history

The closed Hansville Landfill is located on an approximately 73-acre parcel (Kitsap County Parcel No. 092702-1-005-2007) on the Kitsap Peninsula. The address is 7791 NE Ecology Road, Kingston, Kitsap County, Washington 98346. Bordering the landfill to the south and west is rural wooded land owned by the Port Gamble S'Klallam Tribe. Surrounding areas to the north and south are zoned low-density residential, rural wooded or light industrial, and are sparsely developed. The area immediately east of the landfill has been developed for light industrial use.

The Hansville Landfill Site includes the Hansville Landfill and the estimated extent of groundwater, surface water and sediment impacts from the landfill onto the Port Gamble S'Klallam Tribe Reservation (Tribal Protection Area). A vicinity map is in Appendix A, and a Site plan is in Appendix B.

The Hansville Landfill operated as a municipal landfill serving the northern portion of Kitsap County from about 1962 to 1989 when it was closed under WAC 173-304. The landfill includes three separate disposal areas, access roads, a soil borrow area, and wooded land.

The landfill contains the landfill and landfill property owned by Kitsap County. The landfill consists of three separate, inactive, disposal areas. These include the following:

- 13-acre municipal solid waste disposal cell in the central portion of the landfill property;
- 4-acre demolition disposal cell in the northeast corner of the landfill property, which accepted construction, demolition, and land clearing wastes; and,
- 1/3-acre septage lagoon located southwest of the demolition disposal area, which accepted residential septic tank waste until 1982. A second septage disposal area was also reportedly located near the northeast corner of the demolition disposal area.

The County currently operates a drop box for recycling and garbage on the eastern end of the landfill property. This portion of the Site has been used for solid waste transfer and/or recycling operations since the landfill ceased accepting refuse in 1989. Prior to development of the landfill, the Site was undeveloped forested land.

The landfill property is bordered to the south and west by the Port Gamble S'Klallam Tribe Reservation. Tribal lands within and in the immediate vicinity of the Site principally consist of woodland and recreational land, with scattered commercial (a Tribal casino) and rural residential development further to the south and southwest.

The Site is situated on the upper portions of several west sloping drainages with perennial creeks that ultimately discharge into Port Gamble Bay. The topography ranges between 310 and 390 feet above mean sea level (msl).

The regional near-surface geology in the vicinity of the Hansville Landfill is dominated by glacio-fluvial and glacio-lacustrine deposits associated with the Vashon glaciation.

Groundwater in the immediate vicinity of the landfill has been reported to occur within the upper aquifer at depths ranging between 41 feet bgs (at MW-1) to 104 feet bgs (at MW-5). The water table beneath the landfill was reported to range between 251 and 271 feet above msl. To the west (downgradient) of the landfill, groundwater within the upper aquifer reportedly occurred between 7 feet bgs (at MW-12I) and 45 feet bgs (at MW-8). The corresponding water table elevations recorded in these wells have historically ranged from approximately 238 to 260 feet above msl.

Groundwater flow in the upper aquifer in the vicinity of the Hansville Landfill has been consistently reported to be towards the west-southwest. Groundwater from the upper aquifer creates the headwaters of several perennial creeks west (downgradient) of the landfill that are located on Tribal land. These creeks reportedly include Little Boston Creek, Creek A, Creek B, Creek C, and Middle Creek.

The upper aquifer is underlain by a low-permeability clay unit known as the Kitsap Formation, a regionally extensive aquitard that greatly restricts downward vertical migration of groundwater to the Salmon Springs formation, a regional aquifer used for water supply. The Kitsap Formation is approximately 150 feet thick beneath the Hansville Landfill. The outcrop of the Kitsap Formation west of the Hansville Landfill is the discharge point for groundwater in the upper aquifer (Appendix B).

Site investigations

In 1991, Ecology performed a Site Hazard Assessment (SHA), which resulted in an initial ranking of 3. This ranking was subsequently changed to 1 (the highest rank on a scale of 1 to 5) in 1992.

In October 1995, Ecology signed a consent decree with the County and Kitsap County Sanitary Landfill, Inc. (now Waste Management of Washington, Inc.) to conduct a Remedial Investigation/Feasibility Study (RI/FS) for the Site. The RI was completed in 2007 and the FS was completed in 2009. The RI/FS identified arsenic and vinyl chloride in groundwater (and in seepage to surface water) as the primary contaminants of concern (COCs) related to the landfill. The highest concentrations of these COCs generally occurred adjacent to the waste disposal areas with decreasing concentrations at increasing distances from the landfill.

Groundwater monitoring was initiated at the Site in 1982 with the installation of three groundwater monitoring wells (MW-1 through MW-3). Three additional groundwater monitoring wells (MW-4 though MW-6) were added to the monitoring program in 1988.

Beginning in 1996, more groundwater wells were installed as part of a phased RI including wells MW-7 through MW-12 during Phase I, and five additional wells (MW-8D, MW-12I, MW-13S,

MW-13D, and MW-14) during Phase II. Some of these post-1996 wells were installed on the landfill property, and some were installed on the Port Gamble S'Klallam Tribe Reservation.

Monitoring of surface water commenced in 1991 at two locations on Middle Creek (SW-1 and SW-2). Two additional locations (SW-SB and SW-3) were added in 1992 and 1994, respectively. Seven new surface water sampling locations (SW-4, SW-5, SW-6, SW-7, SW-8, SW-9, and SW-10) were subsequently established during the 1996 RI. The surface water monitoring locations were located on the Port Gamble S'Klallam Tribe Reservation.

Four comprehensive quarterly RI sampling events for groundwater and surface water were conducted between August 1996 and June 1997. Ecology-directed quarterly monitoring was initiated in March 1998 using a subset of the groundwater and surface water locations established during the RI. In the first quarter of 2000, Ecology approved further streamlining of the monitoring program, which remained largely unchanged through the third quarter of 2011.

Beginning with the fourth quarter 2011 sampling event, the monitoring program was further modified to comply with the final Cleanup Action Plan (CAP) developed for the Site. The CAP-defined monitoring program includes quarterly monitoring of six groundwater compliance wells and four surface water monitoring stations.

Cleanup actions

Remedial actions included landfill closure and post-closure care completed under Chapter 173-304 WAC prior to 1991, interim actions completed under MTCA prior to 2011, and implementation of the 2011 CAP thereafter.

The remedial system is composed of landfill engineering controls including the following elements:

- Composite cover systems integrating a high-density polyethylene (HDPE) liner and surface water controls over three distinct disposal areas.
- LFG collection from a system of horizontal trenches, vertical wells, and conveyance piping to a flare compound for treating combustible LFG, and an associated liquid management system.
- Access controls (fencing and signage).

The remedial alternative selected in the 2011 Cleanup Action Plan was natural attenuation of groundwater with enhanced monitoring and institutional controls. Natural attenuation occurs through biological and chemical process that reduce contaminant concentrations over time. The groundwater and surface water monitoring program tracks the progress of natural attenuation.

The institutional controls include the environmental covenant for the landfill property and the Protection Area managed by Port Gamble S'Klallam Tribe. A Settlement Agreement (April 2007) between the Port Gamble S'Klallam Tribe, Kitsap County, and Waste Management of

Washington Inc. was developed pertaining to the Tribal lands that were impacted by the landfill to the west and south.

The closure consisted of final site grading, surface capping (including the installation of a high-density polyethylene [HDPE] liner over three distinct disposal areas), and the installation of surface water controls within the former landfill boundary. A passive LFG collection system, including horizontal piping installed beneath the HDPE liner and a flaring station, was also constructed. In 1991, an active LFG extraction and flaring system was installed within the municipal solid waste and demolition landfill units to better control methane migration and to enhance the removal of volatile organic compounds (VOCs) from subsurface soil and groundwater. Additional modifications to the LFG system were completed in 1994 to separate the perimeter LFG extraction well flow from the in-refuse LFG extraction well and trench flow. The perimeter LFG extraction system ceased operation in 1995.

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 common method for setting cleanup levels when sites are contaminated with substances not listed under Method A.

The CAP identified arsenic and vinyl chloride in groundwater and surface water as the primary COCs. Manganese was also identified as an additional COC in groundwater. Method B cleanup levels were used for the Site, with the exception of arsenic, where Method A was used.

The following are the conditional points of compliance (CPOC) for the Site:

1. The Upper Aquifer at the landfill property boundary.
2. The Upper Aquifer downgradient of the landfill property boundary and upgradient of the creek headwaters on Tribal land.
3. Groundwater discharge to surface water at the headwaters of Creek A, Creek B, and Middle Creek on Tribal land.

CPOC #1 is established per WAC 173-340-720(8)(c). Points of Compliance #2 and #3 are off property conditional CPOCs, per WAC 173-340-720(8)(d)(ii). The Tribe accepted the CPOCs, which are also stated in Section 5.4 of the Amended Consent Decree dated August 5, 2011.

The points of compliance for groundwater are evaluated at monitoring wells MW-5, MW-6, MW-7, MW-12I, MW-13D, and MW-14; and for surface water at sampling stations SW-1, SW-4,

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

SW-6, and SW-7 (see locations shown on Figure 2). Some of the monitoring wells are located on the landfill property and some are on Tribal land. The surface water monitoring stations are located on Tribal land.

The 2011 CAP indicates that the estimated restoration timeframe for the selected cleanup action to meet cleanup standards is 23 years.

Compliance monitoring

Groundwater and other landfill monitoring events at the Site have been occurring since 1982 under solid waste regulations (WAC 173-304). Beginning with the fourth quarter of 2011, the compliance monitoring program transitioned to that outlined in the final CAP. As specified in the compliance monitoring plan for the Site, the following water quality parameters have been analyzed quarterly for both groundwater and surface water: arsenic, manganese, chloride, ammonia, nitrate, nitrite, bicarbonate, carbonate, alkalinity, sulfate, total organic carbon (TOC), orthophosphate, and vinyl chloride.

The analytical results from the four quarterly monitoring events in 2024 are summarized below:

- Dissolved arsenic concentrations in monitoring well MW-14 and MW-13D generally exceeded the Site cleanup level of 5 micrograms per liter (µg/L) during the last four quarters, with concentrations up to 13.7 µg/L and 5.31 µg/L, respectively. Well MW-14 is on the landfill property and well MW-13D is on Tribal land. Dissolved arsenic was detected at concentrations below the cleanup level at the other groundwater wells. Dissolved arsenic was detected at concentrations below the Site cleanup level of 5 µg/L at all surface water monitoring locations.
- Dissolved manganese concentrations were less than the 2,240 µg/L cleanup level at all groundwater wells and surface water monitoring locations.
- The vinyl chloride concentrations at monitoring wells MW-6 and MW-12I exceeded the Site cleanup level of 0.025 µg/L during the last four quarters, with concentrations up to 0.053 µg/L and 0.12 µg/L, respectively. Well MW-6 is on the landfill property and MW-12I is on Tribal land. At monitoring well MW-14, the vinyl chloride concentration was detected just below the cleanup level, at 0.024 µg/L. Vinyl chloride was not detected above the laboratory reporting limit of 0.020 µg/L at other groundwater wells. Vinyl chloride has not been detected in surface water samples since the third quarter 2013.

Institutional Controls

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. The institutional controls include an environmental covenant with Kitsap County for the landfill portion of the Site, and a Tribal Protection Area managed by the Port Gamble S'Klallam Tribe for the portion of the Site on the Port Gamble S'Klallam Tribe Reservation.

Environmental Covenant on Landfill Property

On August 22, 2011, institutional controls in the form of a restrictive (environmental) covenant[8] (Covenant) were recorded for the landfill portion of the Site that is owned by Kitsap County.

The Covenant recorded for the Site imposes the following limitations:

1. No groundwater any be taken from the property for domestic, agricultural, or industrial use except for collection of samples from monitoring wells or maintenance activities of as otherwise provided for the in the Consent Decree and Cleanup Action Plan. The Property contains three former landfill units with caps. The Owner shall not alter, modify, or remove any existing cap in a manner that may result in the release or exposure to the environment contamination or create a new exposure pathway without prior approval from Ecology.
2. Any activity on the Property that may interfere with the integrity of the Remedial Action and continued protection of human health and the environment is prohibited.
3. Any activity on the Property that may result in the release or exposure to the environment of a hazardous substance that remains on the Property as part of the Remedial Action, or create a new exposure pathway, is prohibited without prior written approval from Ecology.
4. The Owner of the Property must give thirty (30) days advanced written notice to Ecology of the Owner's intent to convey an interest in the Property. No conveyance of title, easement, lease or other interest in the Property shall be consummated by the Owner without adequate and complete provision for continued monitoring, operation, and maintenance of the Remedial Action.
5. The Owner must restrict leases of uses and activities consistent with the Covenant and notify all lessees of the restriction on the use of the Property.
6. The owner must notify and obtain approval from Ecology prior to any use of the Property that is inconsistent with the terms of the Covenant. Ecology may approve any inconsistent use only after public notice and comment.
7. The Owner shall allow authorized representatives of Ecology the right to enter the Property at reasonable times for the purpose of evaluating the Remedial action; to take samples, to inspect remedial actions conducted at the Property, determine compliance with this Covenant, and to inspect records that are related to the remedial Action.
8. The Owner of the Property reserves the right under WAC 173-340-440 to record an instrument that provides that this Covenant shall no longer limit use of the Property or be of any further force or effect. However, such an instrument may be recorded only if Ecology, after public notice and opportunity for comment, concurs.

[8] https://apps.ecology.wa.gov/cleanupsearch/document/19446

Protection Area on Tribal Land

The Settlement Agreement between the Port Gamble S'Klallam Tribe, Kitsap County, and Waste Management of Washington Inc. was developed in September 2007 for the Tribal land that was impacted by the landfill. A Protection Area was established to restrict certain uses and access to protect Tribal resources and Tribal members. The restrictions were codified in the Port Gamble S'Klallam Tribe Law and Order Code - Title 24 Environmental Protection. The Port Gamble S'Klallam Tribe is responsible for enforcement of the restrictions.

Code 24.08.03 Surface Water and Groundwater Protection Area[9] imposes the following limitations:

1. The surface water within the Protection Area as described in Exhibit A shall not be used for any drinking water or agricultural purposes. The groundwater underlying the Protection Area down to the depth of the Kitsap Formation (as shown in Figure 2) shall not be used for any drinking water or agricultural purposes. Groundwater below the upper boundary of the Kitsap Formation may be used for any purpose, but such groundwater shall not be accessed by a well located in the Protection Area.
2. Within the Protection Area, no surface disturbances shall occur that would disturb any sampling locations used by the Landfill Parties or that would encounter groundwater and/or change the hydrology of the area.
3. Tribal members may access the Protection Area for recreational and other activities, such as the gathering of plants for traditional and medicinal uses, provided that such activities do not include the restricted uses listed in paragraphs 1 and 2 above, or as may be imposed by Ecology.
4. In determining the protection area, "Exhibit C, Map of Protection Area" is incorporated by reference as a part of this code.

Protection Area Signage

The 2007 Settlement Agreement indicates that the Landfill Parties (Kitsap County and Waste Management of Washington Inc.) will post signs in the Protection Area to notify the reservation population of the restrictions. The Settlement Agreement also indicates that the Port Gamble S'Klallam Tribe will maintain the signs.

Annual Reports

The 2007 Settlement Agreement indicates that the Port Gamble S'Klallam Tribe will provide the Landfill Parties (Kitsap County and Waste Management of Washington Inc.) with a report on the implementation of the institutional controls on an annual basis, and that both parties will work together to address any issues or concerns.

[9] https://apps.ecology.wa.gov/cleanupsearch/document/157587

Periodic Review

Effectiveness of completed cleanup actions

Ecology conducted a Site visit on March 5, 2025. The former Hansville Landfill property is currently operating as a closed landfill with a Kitsap County Solid Waste drop box for the transfer of recycling and garbage on the eastern portion of the landfill property. The western portion of the Site includes the estimated extent of groundwater, surface water, and sediment impacts from the landfill onto Port Gamble S'Klallam Tribe Reservation, which consists of rural wooded land.

A photo log is in Appendix C.

Direct contact

The cleanup actions were intended to eliminate exposure to contaminated soil and groundwater at the Site. Exposure pathways to contaminated soil by ingestion and direct contact were reduced by the installation of the composite cover systems integrating an HDPE liner and storm water controls over three distinct former disposal areas. The surface cap of the former landfill appeared to be in satisfactory condition, and no repair, maintenance, or contingency actions are required at this time.

Protection of groundwater

Contaminated materials in the landfill have been covered and capped, and LFG collection from a system of horizontal trenches, vertical wells, and conveyance piping to a flare compound for treating combustible LFG and associated liquid management has been implemented. Vinyl chloride and dissolved arsenic concentrations exceeding Site groundwater cleanup levels are trending down due to natural attenuation. On-going monitoring will be required until cleanup standards are met throughout the Site.

Institutional controls

Institutional controls (ICs) in the form of a Covenant were implemented in 2011 for the landfill portion of the Site that is owned by Kitsap County. The Covenant remains active and discoverable through the Kitsap County Auditor's Office. Ecology found no evidence that 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 Site 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.

The 2007 Settlement Agreement between the Port Gamble S'Klallam Tribe, Kitsap County, and Waste Management of Washington Inc. established a Protection Area on the Port Gamble S'Klallam Tribe Reservation to protect Tribal resources and Tribal members. The use and access

restrictions in the Protection Area were codified in the Port Gamble S'Klallam Tribe Law and Order Code - Title 24 Environmental Protection. The current version of the code is dated March 27, 2024, and can be found on the Tribe's website. Ground disturbing activities and the use of groundwater and surface water are restricted in the Protection Area.

The 2007 Settlement Agreement indicates that the Port Gamble S'Klallam Tribe will provide the Landfill Parties (Kitsap County and Waste Management of Washington Inc.) with a report on the implementation of the institutional controls on an annual basis. No annual reports have been provided to Ecology. The current consultant for Kitsap County (Geosyntec Consultants, Inc.) indicated that they are not aware of any annual reports.

Other ICs for the landfill and Tribal Protection Area include a locked gate at the main access point to the closed landfill, and no trespassing and restricted use signage throughout the former landfill property and Tribal Protection Area.

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

PFAS

Since the last Periodic Review of the Site in 2017, per- and polyfluoroalkyl substances (PFAS) are now considered an emerging contaminant as they have been widely detected in the environment, pose potential health and ecological risk, and are not yet fully regulated under many federal and state environmental laws. Testing for PFAS in groundwater and surface water at closed landfill such as this Site is essential due to their persistence, mobility, and potential health and environmental risks. Landfills, even those that are closed, can serve as long-term sources of PFAS contamination as these substances can leach from waste materials and migrate into surrounding water sources. Given the widespread historical use of PFAS during the operational acceptance of refuse at the Site in consumer products, industrial waste, and firefighting foams (circa 1962 to 1989), their presence in landfill leachate is a potential concern.

Since the Site has never been tested or monitored for PFAS, potential impacts to groundwater and/or surface water are unknown.

Ecology conducted a PFAS study at selected landfills in Washington (*PFAS in Landfill Leachate*, dated September 2022). The study had the following recommendations:

- When cleanup standards for PFAS are established, conduct at least one round of PFAS sampling in monitoring wells at landfill cleanup sites.
- Consider one round of leachate sampling at all municipal solid waste landfills and any other landfills that may serve as a reservoir for PFAS-containing substances.
- Consider at least one round of PFAS sampling in monitoring wells at landfills that have high PFAS values in leachate and indications of potential impacts to groundwater.

CLARC screening level updates

Ecology's Cleanup Levels and Risk Calculation (CLARC) database is periodically updated to reflect new information on risk factors and subsequent changes in formula values. The current CLARC screening levels are compared to Site-specific cleanup levels in Table 1 below. These CLARC screening levels are for comparison purposes only.

Table 1

Site-Specific Cleanup Levels vs. Current CLARC Screening Levels

Contaminant	Media	Site Cleanup Level (µg/L)	Current CLARC Screening Level (µg/L)
Arsenic	Groundwater	5	8 (Natural Background)
Manganese	Groundwater	2,240	50 (SMCL)
Vinyl Chloride	Groundwater	0.025	0.02 (WQC-HH for protection of groundwater discharging to surface water)
Arsenic	Surface Water	5	8 (Natural Background)
Vinyl Chloride	Surface Water	0.025	0.02 (WQC-HH)

CLARC = Cleanup Levels and Risk Calculations
µg/L = micrograms per liter
WQC-HH = Water Quality Criteria – Human Health
SMCL = secondary maximum contaminant level from Washington State Department of Health
Natural Background = per Ecology's 2022 Natural Background Groundwater Arsenic Concentrations in Washington State Study

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 that would affect decisions or recommendations made for the Site.

Current and projected Site and resource uses

Site use

The Site is currently a closed landfill, with a portion of the Site used for commercial purposes in the form of drop box and transfer of recycling and municipal garbage, and a portion rural wooded land owned by the Port Gamble S'Klallam Tribe Reservation. This portion of the Site includes the estimated extent of groundwater, surface water, and sediment impacted from the landfill. There have been no changes in current or projected future Site uses. The current Site use is not likely to have a negative impact on the protectiveness of the cleanup action.

Resource use

Installing water supply wells is prohibited within 1,000 feet of the landfill's property boundary, which is codified in WAC 173-160-171 (shown on the map in Appendix A).

However, the 1000-foot well restriction in WAC 173-160-171 only legally applies to areas on Washington State land and does not extend to Tribal land. Actions taken on Tribal land would be guided by Tribal codes and laws and Federal laws like the Clean Water Act.

The 2009 Feasibility Study notes that the Tribe may choose to adopt a similar restriction in Tribal law for Tribal land that is located northwest and south of the landfill property. However, there are no known impacts from the landfill in these areas.

The Tribal Protection Area in the Port Gamble S'Klallam Tribe Law and Order Code already restricts groundwater to the west of the landfill property, which is the area that is known to be impacted by the landfill.

Availability and practicability of more permanent remedies

The remedy implemented included containing hazardous substances, and it currently appears 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

- An assessment of the presence or absence of PFAS at the Site should be completed by the PLP prior to the next 5-year periodic review.
- Performance monitoring of groundwater and surface water continues to be performed at the Site to monitor natural attention processes and to evaluate compliance with cleanup standards. Site cleanup levels are not yet being met at the conditional points of compliance. The 2011 CAP indicates the estimated restoration timeframe for the selected cleanup action to meet cleanup standards is 23 years.
- Institutional controls are in place, including an environmental covenant with Kitsap County for the landfill portion of the Site, and a Protection Area managed by the Port Gamble S'Klallam Tribe for the portion of the Site on Tribal land. The institutional controls appear to be effective in protecting human health and the environment from exposure to hazardous substances and protecting the integrity of the cleanup action. However, no annual reports on the institutional controls from the Port Gamble S'Klallam Tribe have been provided (as agreed upon in the 2007 Settlement Agreement between the Port Gamble S'Klallam Tribe, Kitsap County, and Waste Management of Washington Inc.).
- Installing water supply wells is prohibited within 1,000 feet of the landfill's property boundary per WAC 173-160-171. This restriction only legally applies to areas on Washington State land and does not extend to Tribal land. The Tribe may choose to adopt a similar restriction in Tribal law for Tribal land that is located northwest and south of the landfill property. However, there are no known impacts from the landfill in these areas. The Tribal Protection Area already restricts groundwater to the west of the landfill, which is the area that is known to be impacted by the landfill.

Based on this periodic review, Ecology has determined the requirements of the institutional controls are likely being followed. Kitsap County and the Port Gamble S'Klallam Tribe are responsible for continuing to inspect the Site to ensure the integrity of the cleanup action is maintained (for example, the surface cover/cap for the former landfill and the signage in the Protection Area on Tribal land).

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.

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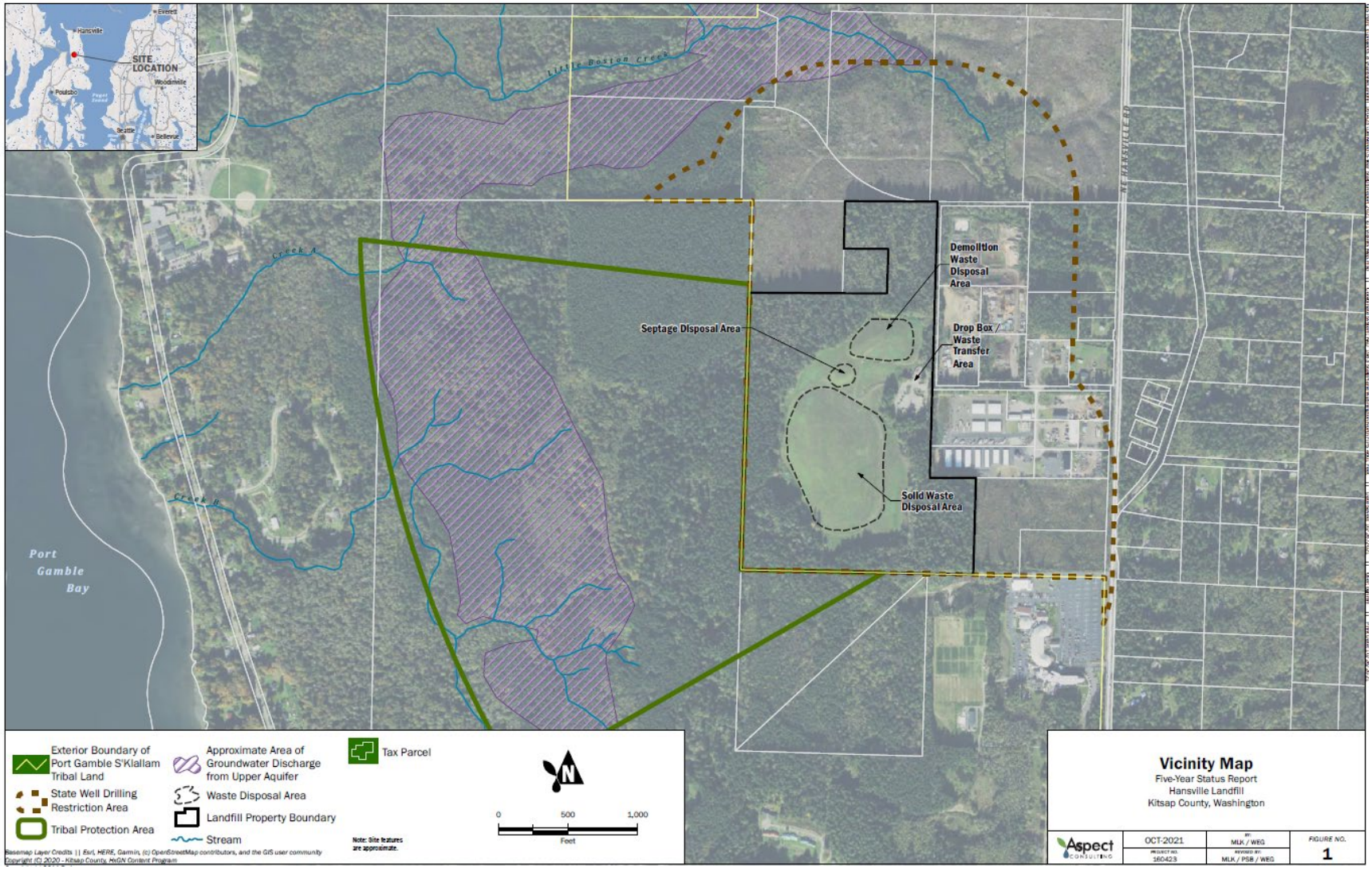
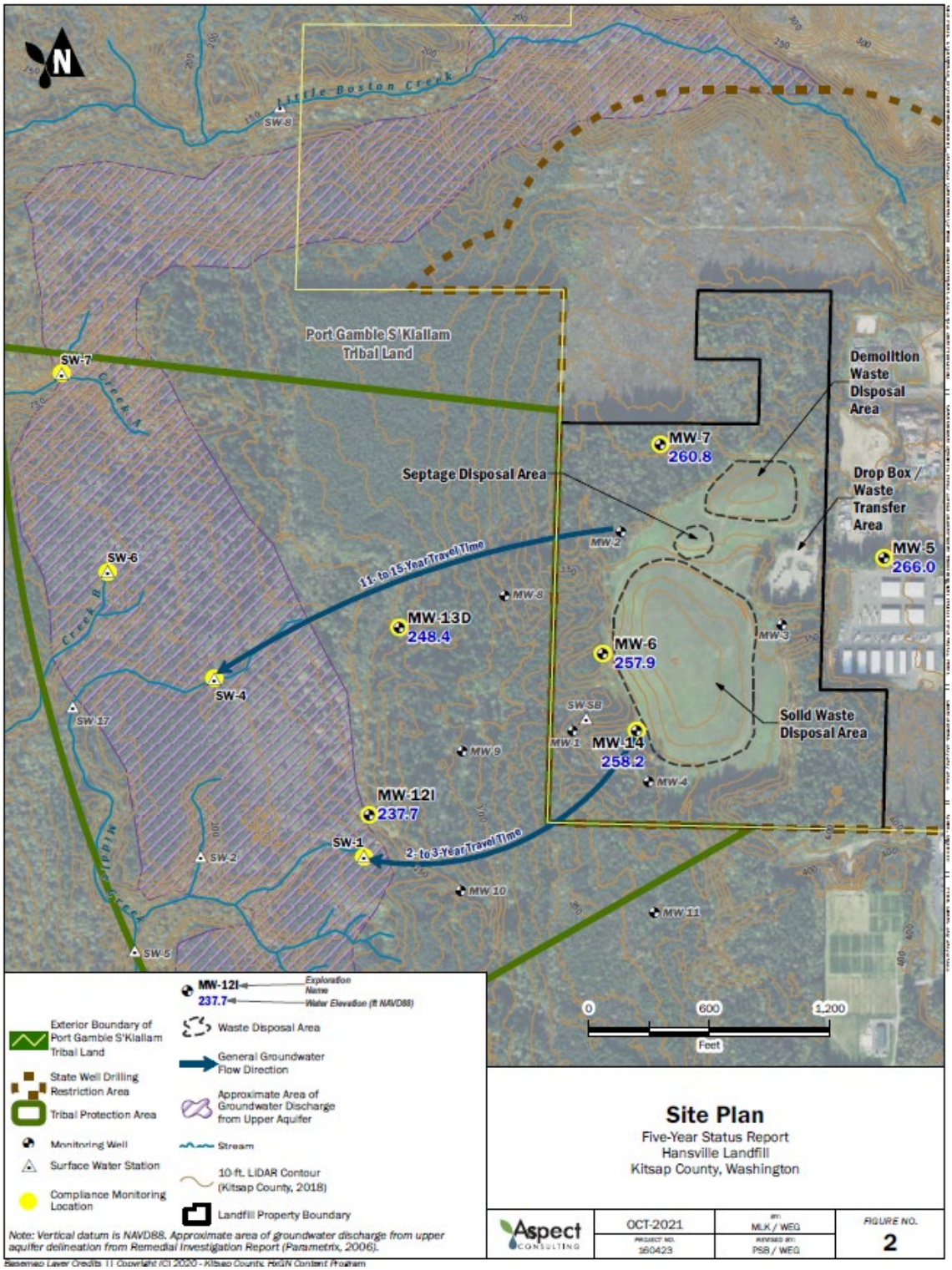
Port Gamble S'Klallam Tribe, Law and Order Code, Title 24 Environmental Protection, Revised March 27, 2024.

Settlement Agreement Among Kitsap County, Waste Management of Washington, Inc., and the Port Gamble S'Klallam Tribe, April 27, 2007.

Appendix A. Vicinity Map



Appendix B. Site Plan



Appendix C. Photo Log

Photo 1: Landfill cap surface cover; looking west



Photo 2: Landfill gas flare system



Photo 3: Performance monitoring well MW-6 on landfill property



Photo 4: Landfill gas extraction well GP-5 on landfill property



Photo 5: Surface Water Sampling Location SW-1 in the Tribal Protection Area (Aspect Consulting)



Photo 6: Restricted Use Signage in the Tribal Protection Area (Aspect Consulting)

