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February 7, 2025

Mr. Christer Loftenius  
State of Washington Department of Ecology  
4601 North Monroe Street  
Spokane, Washington 99205-1295

**RE: 2024 ANNUAL OPERATIONS AND MAINTENANCE SITE INSPECTION FOR THE HAMILTON STREET BRIDGE SITE**

Dear Mr. Loftenius:

Enclosed with this e-mail is the 2024 Annual Operation and Maintenance Site Inspection for the Hamilton Street Bridge site. Feel free to call me at (509) 495-4086 with any questions.

Sincerely,

Bryce Robbert  
Senior Environmental Scientist

C: Scott McDonald, BNSF  
David Cook, Aspect (Geosyntec)



## TECHNICAL MEMORANDUM

**TO:** Mr. Bryce Robbert, Avista Corporation  
Mr. Scott MacDonald, Burlington Northern and Santa Fe Railway Company

**FROM:** Weston Boardman, GIT, and Shane Kostka, LG

**DATE:** February 3, 2025

**RE:** 2024 Annual Operation and Maintenance Site Inspection  
Hamilton Street Bridge Site  
Spokane, Washington  
Project No. 0236042.150

## INTRODUCTION

On behalf of Avista Corporation (Avista) and the Burlington Northern and Santa Fe Railway Company (BNSF), Landau Associates, Inc. (Landau) prepared this technical memorandum to summarize 2024 operation and maintenance (O&M) inspection activities completed at the Hamilton Street Bridge Site (Site; Cleanup Site ID No. 3509; Facility/Site ID No. 84461527) located at 111 North Erie Street in Spokane, Washington (Figure 1). The Site is adjacent to the Spokane River and on the southwestern edge of the Spokane Valley-Rathdrum Prairie aquifer. The Site was historically used to manufacture coal gas and carbureted water gas and process coal tar. The Site includes the BNSF property (including the portion that was formerly leased to the American Tar Company [ATC]), the former Spokane Manufactured Gas Plant (SGP) property, and the former Chicago Milwaukee and St. Paul Railroad (CM&SPR) property.

Avista and BNSF entered into Consent Decree No. 02205445-0 (Consent Decree) with the Washington State Department of Ecology (Ecology) to complete a cleanup action at the Site in accordance with Ecology's final cleanup action plan (FCAP; Ecology 2001). Landau prepared an O&M Plan for the Site to meet the requirements of the Consent Decree and the O&M Plan requirements listed in Section 173-340-400(4)(c) of the Washington State Model Toxics Control Act (MTCA). The O&M Plan describes the management, inspection, repair, and reporting requirements associated with the long-term operation and maintenance of the cleanup action facilities (Landau 2004a).

In accordance with the O&M Plan, the cleanup action facilities are inspected annually to confirm that the facilities are maintaining compliance with the requirements of the FCAP. The annual inspection consists of conducting a Site visit to identify problems or areas of concern, evaluating the appropriate mitigation measures if needed, and coordinating maintenance and repairs as necessary. The purpose of this technical memorandum is to document the condition of the cleanup action facilities outlined in the FCAP, as observed during the 2024 annual O&M Site inspection. A brief summary of the original cleanup

action, as well as changes in Site conditions associated with ongoing improvement and recent redevelopment activities, is also included.

## CONSTRUCTION OF CLEANUP ACTION FACILITIES

The primary objective of the cleanup action was to contain, prevent disturbance of, and prevent contact with subsurface soil impacted with carcinogenic polycyclic aromatic hydrocarbons (cPAHs); implement stormwater management measures to reduce onsite infiltration and prevent leaching of contaminants to groundwater; and implement shoreline stabilization measures to prevent erosion that could expose impacted soil. Cleanup action construction activities were completed in 2005 in accordance with the criteria outlined in the Engineering Design Report (EDR; Landau 2003a) and the methods and procedures specified in the Plans and Specifications (Landau 2004b). The cleanup action is documented in the Cleanup Action Completion Report (Landau 2006). The Site area and Site features are shown on Figure 2. The primary cleanup action facilities constructed at the Site include the following.

- **Soil Cap.** A soil cap was constructed at both the former SGP and ATC portions of the Site. A soil cap consisting of 6 inches of crushed rock was placed over the surface of the former SGP property to prevent direct contact and to control infiltration and contaminant leaching by directing stormwater runoff away from areas where impacted soil remains. The extent of the surface cap extended beyond the boundaries of the impacted soil. A soil cap consisting of a minimum of 2 feet (ft) of soil plus a minimum of 6 inches of top course fill was placed over the exposed contaminated soils on the ATC property to prevent direct contact with the contaminated soil. As described below, the soil cap on the SGP portion of the Site was removed in 2022 during redevelopment activities, and a soil cap was constructed on portions of the Site where the original soil cap was located in 2023. The original grading plan for the soil cap on the SGP portion of the Site is shown on Figure 3.
- **Stormwater Facilities.** Stormwater detention basins were constructed at the north, east, and west ends of the Site. The overall Site grade was developed to direct surface water runoff toward these three unlined infiltration basins. The north detention basin is outside the Site boundaries but was included as part of the Site remedy, as defined in the FCAP, and included two Type A drywells. As described below, modifications have been made to the stormwater facilities since construction; the east detention basin was replaced with a lined evaporation pond, and the west detention basin was removed during redevelopment activities. Excavation for a new west infiltration gallery was performed in 2022 (Aspect 2022).
- **Shoreline Armoring and Bioengineering.** The Site shoreline armoring and bioengineering system included construction of a riprap face with planted vegetation near the James E. Keefe Bridge to control shoreline erosion. A transition zone consisting of non-woven textile overlying sandy gravel and cobbles separates the Site's crushed gravel cover from the shoreline riprap face. The early growth of planted vegetation in the riprap, such as willow trees and cottonwood trees, was enhanced with an irrigation system. After healthy and mature vegetation had been established, the irrigation system was removed. As described below, several trees planted as part of the bioengineering system have been cut down adjacent to transient camps along the shoreline. Also, in response to manmade erosion resulting from unauthorized excavation into the shoreline slope near Site monitoring well (MW) MW02-40, an additional riprap face and a transition zone were constructed between MW02-40 and the Spokane River.

- **Monitoring Wells.** Fifteen groundwater monitoring wells installed during the preliminary Site investigation and remedial investigation (MW02-20, MW02-40, MW02-100, MW04-20, MW04-40, MW04-100, MW08-20, MW08-40, MW08-90, MW09-20, MW09-40, MW09-100, MW07-90, ATC07-40, and ATC07-20) are currently located at the Site. Monitoring wells MW02-20, MW02-40, MW04-20, MW07-90, MW08-20, MW08-90, MW09-20, MW09-100, and ATC07-20 are shown on Figure 2 and are used for measuring depth-to-groundwater and for collecting groundwater samples during semiannual compliance monitoring. In addition, a fixed, surveyed staff gauge is attached to a pier of the James E. Keefe Bridge and is used to record the Spokane River stage during semiannual compliance monitoring.
- **Fencing.** A chain-link fence was installed at the east Site boundary, along North Erie Street, to help prevent direct contact with cPAH-impacted soils by limiting access by the general public. As described below, additional fencing was installed in 2017 and 2021.

## Site Improvements (2016-2019)

Starting in 2016, after acquiring an easement, the City of Spokane (City), with Ecology's approval and oversight, began Phase 2A road construction on the east-west Martin Luther King Jr. Way (MLK Jr Way) thoroughfare across the south portion of the Site, with Ecology's approval and oversight. Fill soil was imported to the west end of the Site to accommodate construction of an elevated road grade in this area, while the central and east onsite portions of the thoroughfare were constructed at the approximate existing Site grade. In preparation for road construction, the casing and monuments for Site monitoring wells MW08-40 and MW08-90, located in the shoulder of MLK Jr Way, were raised to accommodate road fill. The adjusted top of polyvinyl chloride (PVC) well casing elevations at each location were resurveyed by the City relative to the top of the PVC casing at monitoring well MW08-20, using a licensed surveyor.

In 2017, MLK Jr Way was extended east, just short of Erie Street, and capped with asphalt pavement, concrete curbing, and adjacent lined bioswales. Runoff from the paved road surface is captured by the swales and conveyed east to a lined evaporation pond constructed at the southeast corner of the Site. The lined evaporation pond replaced the previously described east detention basin. Any overflow from the evaporation pond is transferred to the City combined sewer overflow (CSO) service through the elevated grate catch basins within the pond. Additional fencing was installed north of MLK Jr Way to limit access to the general public.

In 2018, under Ecology's approval and oversight, Phase 2B construction extended MLK Jr Way northeast beyond the Site boundary to Trent Avenue, and construction of MLK Jr Way through the Site was completed. This portion of MLK Jr Way was also paved with asphalt and finished with concrete curbing and adjacent lined bioswales that convey road surface runoff to the City CSO service.

Development of the Ben Burr Trail east-west, along the Site's Spokane River shoreline, was completed in 2018 within City easements, with Ecology's approval and oversight. The final grade for the asphalt-paved trail sits slightly above the established Site grade and was completed with minimal disturbance to the soil cap. To accommodate trail construction, Site monitoring wells MW02-20, MW02-40, MW02-100, MW04-20, and MW07-90 were refitted with flush-surface monuments. In October 2018, the adjusted

top-of-PVC casing elevations were resurveyed by the City relative to the top-of-PVC casing elevation of Site monitoring well MW08-20, using a licensed surveyor.

In continuation of the City's Site development, onsite and offsite Phase 2B work was completed in 2019 by connecting MLK Jr Way from the west to North Erie Street and by paving North Erie Street. The parking lot containing monitoring wells MW09-20, MW09-40, and MW09-100, east of North Erie Street, was repaved in 2019; however, the flush-mount monument wells were not affected and did not require modifications for ongoing monitoring. North Erie Street was completed with curbside landscaping and additional lined bioswales that convey runoff from North Erie Street to the City CSO service. The Ben Burr Trail, near the northeast Site boundary, was also extended from the Spokane River shoreline to North Erie Street and completed with asphalt pavement. A portion of fencing near the east Site boundary, where Ben Burr Trail meets North Erie Street, was permanently removed in 2019 and replaced with bollards to restrict vehicle access to the Site. A culvert was installed beneath the trail extension to allow potential Site runoff to flow toward the north detention basin. A locked gate, for limited vehicle access to the Site, was installed north of the intersection of MLK Jr Way and North Erie Street.

## Site Improvements (2022)

Sagamore Spokane, LLC (Sagamore) is redeveloping the SGP portion of the Site. Redevelopment of the Site includes additional cleanup actions as outlined in Ecology's Cleanup Action Plan Amendment 1 ("CAP Amendment" or "CAP Amendment 1"; Ecology 2020). Sagamore entered into Prospective Purchaser Consent Decree No. 21200059-32 (PPCD; Spokane County Superior Court 2020) with Ecology for the former SGP and CM&SPR properties in 2021, which required Sagamore to improve and expand the existing cleanup action in conjunction with property redevelopment under the CAP Amendment as well as to produce and comply with addendums to the existing Site O&M Plan and the Site Compliance Monitoring Plan (CMP; Landau 2003b). In addition, in accordance with Article XII of the PPCD, Sagamore is required to submit monthly progress reports to Ecology describing the actions taken during the previous month to implement the requirements of the PPCD. Sagamore's redevelopment plan consists of four residential buildings to be constructed north of MLK Jr Way; two of which (buildings 2A and 2B) were planned to be constructed on micropile or helical pile foundations.

Prior to beginning redevelopment, Sagamore fenced their portion of the Site and, in March 2021, installed construction groundwater monitoring wells AMW-1A and AMW-1B (Figure 2), which were intended to monitor groundwater adjacent to the piles installed for buildings 2A and 2B. Monitoring well AMW-1B was screened in free product, potentially coal tar. A baseline construction groundwater monitoring event was conducted by Sagamore in April 2021 (Aspect 2021). In March 2022, Sagamore began redevelopment on their portion of the Site; the SGP portion of the Site (excluding the shoreline) was cleared and grubbed of vegetation, and the soil cap over the former SGP property was removed. Sagamore also removed the portion of the asphalt-paved Ben Burr Trail located on their property; installed test micropiles and helical piles for buildings 2A and 2B; performed subgrade excavations for building 1A and 1B foundations; and installed project sewer, stormwater, and water supply

infrastructure. Installation of stormwater infrastructure included excavation for the west infiltration gallery between July 5, 2022 and August 5, 2022 (Aspect 2022).

On November 9, 2021, Landau observed mild erosion of the shoreline near MW02-40, likely connected to the presence of transient camps on the shoreline adjacent to the monitoring well. On January 24, 2022, Landau observed that a section of the shoreline, between MW02-40 and the Spokane River, had undergone degradation and erosion as a result of unauthorized manmade excavation into the slope. Sagamore's consultant was notified of the erosion issue on March 24, 2022. The erosion resulted in the formation of localized steep scarp faces extending down to the Spokane River that encroached to within approximately 2 ft of Site monitoring well MW02-40, which is used for compliance groundwater monitoring in accordance with the Site CMP.

Landau designed a slope repair and observed construction of the slope repair on October 11 and 12, 2022. The construction was completed using riprap blocks with backfill behind the riprap, and restoration of a crushed rock surface layer overlying geotextile fabric. Following construction Landau installed temporary fencing east and west of the repair, perpendicular to the river and connecting to the fence on Sagamore's portion of the Site. Landau prepared a geotechnical evaluation for the repair (Landau 2022a) and prepared a construction completion report documenting project permitting, best management practices, as-built conditions, and construction observations, including Spokane River elevation and turbidity field measurements (Landau 2022b). During construction, a transient camp was observed near the western extent of the cleanup action armoring and bioengineering system. Several trees next to this camp, which had been planted as part of the cleanup action, had been cut down.

## Site Improvements (2023)

Sagamore's 2023 Site activities appeared to be primarily in response to corrective actions issued by Ecology. On January 23, 2023 Ecology issued a Corrective Action Notice to Sagamore following a Site visit by Ecology's project coordinator (Ecology 2023a). During the Site visit, Ecology observed that openings had been cut in the northeast portion of Site fencing, Site debris (bricks) was exposed in 2- to 3-ft-deep pits adjacent to foundation test piles installed in late 2022 at the proposed location of building 2A, damage to trees and shrubs along the shoreline in the vicinity of the James E. Keefe Bridge and the western Site boundary had occurred, and the subgrade for proposed buildings 2A and 2B has been excavated, resulting in 2- to 3-ft-deep depressions at those locations with no ongoing construction work. Ecology requested the following actions be taken:

- Repair and strengthen the northeast fence that is supposed to prevent Site entry along the riverbank. Additionally, when the water levels in Spokane River decrease: extend the west and northwest fences into the river to prevent access along the riverbank.
- Backfill all pits excavated around the foundation test piles immediately up to grade.
- In accordance with PPCD Article VI Work to be Performed, Sagamore must protect all existing Site remedial structures not affected by the construction work in accordance with the PPCD. As part of this increased protection, the site security guard must check all Site fences, including the ones blocking access along the riverbank; check for damage along the riverbank; and check for illegal camping. The security guard must perform these checks every 7 days at minimum and

report any observed damages and potential Site endangerments to Sagamore promptly. Sagamore must report any observed damages to Ecology in writing within one business day after being informed by project security of damage and potential Site endangerments.

- Sagamore must inform Ecology about the proposed foundation piling schedule by February 15, 2023. If no schedule has been set by this date, then Sagamore must backfill the subgrade excavations at proposed buildings 2A and 2B back to the original grade to reduce the risk for stormwater infiltration into contaminated debris and soil.

According to Sagamore's February 7, 2023 Corrective Action Notice Response Letter (Aspect 2023a), the following actions were taken in response to Ecology's Corrective Action Notice:

- The northeast Site fence was repaired, along with two other locations where the fencing had been compromised.
- Depressions in the vicinity of test piles were filled.
- Sagamore contracted with a Washington State-licensed security company to complete a weekly walking review of the redevelopment area, including evaluating the integrity of Site fencing, checking for damage to the engineered shoreline and riverbank vegetation, and looking for signs of recent illegal camping.
- In response to Ecology's request for a proposed piling schedule by February 15, 2023, Sagamore stated that additional pile testing and construction were expected to begin within the next couple of weeks but that, if construction work were not scheduled to start by April 14, 2023, Sagamore would notify Ecology of the proposed schedule in an additional corrective action notice response letter.

During Landau's O&M Site inspection conducted on November 3, 2023, holes and/or openings were observed in the SGP property fencing along the riverbank, in the fence sections leading from the top of the bank to the river at the eastern and western extents of the shoreline fence at the Site; at the western end of the SGP portion of the Site, allowing access to the riverbank and into the main area of the SGP portion of the Site; to southwest of the north detention basin; and approximately 100 ft to the northeast of MW04-20. At the time of the inspection, no depressions containing Site debris (bricks) were observed in the footprint of building 2A adjacent to foundation test piles.

On July 11, 2023 Ecology issued an additional Corrective Action Notice (Ecology 2023b) to Sagamore requiring that:

- *"Sagamore must restore the Site to the original pre-construction grade using the materials described in the February 2, 2006, Cleanup Action Report within 90 days of receipt of this letter.*
- *Or, Sagamore may propose an alternative plan to manage and divert stormwater from contaminated soils, instead of restoring the Site surface to its original grade. Sagamore must submit a plan to Ecology describing this alternative within 30 days of receipt of this letter and must complete the installation of the alternative within 30 days of receiving Ecology's written approval of the alternative plan."*

Ecology also noted that, as of the date of the July 11, 2023 Corrective Action Notice, Ecology had not received an updated foundation piling schedule.

In response to the July 11, 2023 Corrective Action Notice (Ecology 2023b), Sagamore outlined the following elements in their Alternative Stormwater Plan Memo (Aspect 2023b) as an alternative plan to manage and divert Site stormwater:

- *"Grading building footprint areas to slope at 0.5 to 0.75 percent away from the impacted area and placing 6 inches of 1 and 1/4-inch minus rock (crushed surfacing) cover across the building 2A and 2B footprints.*
- *Routing collected stormwater to infiltration basins located outside of the Site contamination zone."*

The alternative plan was scheduled to be implemented by October 15, 2023. During Landau's O&M Site inspection conducted on November 3, 2024, a crushed surface soil cover was observed at the footprints of buildings 2A and 2B and appeared to be sloped away from the cPAH-impacted soil boundary. A sumped stormwater collection basin was observed at the northeast end of the building 2A footprint, outside the boundary of cPAH-impacted soil; a stormwater collection basin was not observed at building 2B. Evidence suggesting that stormwater was being discharged onto the Site, within the cPAH-impacted soil boundary, from the James E. Keefe Bridge was also observed during Landau's 2023 O&M Site inspection.

## 2023 Operation and Maintenance Site Inspection

Landau personnel conducted an O&M Site inspection on November 3, 2023. In addition to the aforementioned observations, the following summarizes the general observations recorded during Landau's November 3, 2023 O&M Site inspection. Based on observations made during the 2023 O&M Site inspection, Sagamore has made significant modifications to cleanup action facilities at the Site. It is Landau's understanding that these modifications are guided by CAP Amendment 1; however, modifications have been made that appear to potentially threaten the effectiveness of the final cleanup action at the SGP portion of the Site.

- The original cleanup action facilities that have not been modified by redevelopment activities conducted by Sagamore were in place and generally functioning as intended.
- The soil cap overlying the former SGP property was removed in March 2022, and the SGP portion of the Site grade has been altered. Based on observations made during the 2023 O&M Site inspection, it does not appear that stormwater within the footprint of building 2B is managed in accordance with Sagamore's Alternative Stormwater Plan Memo. No facilities were observed to be in place to direct stormwater and snowmelt runoff away from areas of impacted soil on the remainder of the SGP portion of the Site, and ponding was observed throughout the remainder of the former SGP portion of the Site. Additionally, previously installed test piles open to as deep as 3.8 ft within the cPAH-impacted soil boundary were observed. Based on these observations, soil cap conditions on the former SGP property do not appear to be consistent with the requirements of CAP Amendment 1.
- The cleanup action included stormwater facilities to control infiltration and contaminant leaching by directing stormwater runoff away from areas where impacted soil remains. Stormwater was not being directed to areas outside the footprint of cPAH-impacted soil and ponding was observed on much of SGP portion of the Site. Stormwater facility conditions on the

former SGP portion of the Site do not appear to be consistent with the requirements of CAP Amendment 1.

- The cleanup action shoreline riprap face and shoreline armoring near MW02-40 were observed to be in generally good condition. Several cleanup action bioengineering system trees were observed to have been cut down.
- All Site compliance monitoring wells were secure and observed to be in good condition.
- Compromised fencing was observed on the SGP portion of the Site, allowing access to the Site and the shoreline. Because the soil cap has been removed from the SGP portion of the Site, the lack of Site security may result in the general public coming into contact with cPAH-impacted soil. Sections of fencing on the ATC portion of the Site paralleling North Erie Street, at the southwest corner of the lined evaporation pond and underneath the James E. Keefe Bridge, were observed to be damaged. The soil cap on the ATC portion of the Site was observed to be in good condition and operating in accordance with the FCAP.
- No significant changes were observed in the ATC portion of the Site, and Site improvements by the City appeared to have been completed. A debris pile consisting of trees and dirt was observed near the east end of the ATC soil cap.

## 2024 Site Activities and Correspondence

No Site improvements were made during 2024; however, the following outlines the correspondence and subsequent activities that occurred during 2024 related to corrective action notices issued to Sagamore by Ecology.

On January 16, 2024 Sagamore submitted a Construction Stormwater Cover Completion Report to Ecology that documented implementation of Sagamore's Alternative Stormwater Plan (Aspect 2023b) at the Site (Aspect 2024a). The Construction Stormwater Cover Completion Report has not been made available on the Site's Ecology webpage or otherwise made available to Landau.

On February 26, 2024 Ecology issued a Response to Ecology Corrective Action Notice Dated January 23, 2023: Site Security and Soil Stockpile Covers letter (Ecology 2024a). During a Site visit conducted by Ecology on February 13, 2024, Ecology noted that there were openings in the temporary construction fence, that the permanent fence perpendicular to the riverbank at the northeastern boundary of the SGP property had not been repaired, and that trespassing and camping along the riverbank was ongoing. Additionally, Ecology stated that they are *"extremely concerned about the integrity of the riverbank Site remedy installed in accordance with the 2001 Cleanup Action Plan (CAP)"* and that *"Sagamore must take immediate actions to protect and secure the current on-Site remedies implemented in accordance with the 2001 CAP."* Ecology requested that Sagamore take the following actions within 90 days of receipt of the February 26, 2024 letter:

- *"Install a permanent fence with lockable entry gates.*
- *Improve security of Sagamore's portion of the Site with frequent checks and immediate repairs of broken fences.*
- *Inspect and repair any damages from trespassers along the riverbank.*

- *Consult with a security company to implement measures to prevent camping along the riverbank.*
- *Consult with a landscape architect to look into measures to prevent trees along the riverbank to be cut or otherwise damaged.*
- *Improve the soil stockpile covers to keep them in place or alternatively remove the stockpiles from the Site before the summer of 2024."*

On March 5, 2024 Ecology issued a Response to Ecology Corrective Action Notice Dated July 11, 2023, Stormwater Management and Construction Schedule Extension Request letter. The March 5, 2024 letter stated that Ecology is of the opinion that their concerns regarding construction area stormwater management have been addressed (Ecology 2024b). Ecology requested that Sagamore submit to Ecology a formal request to extend the construction period in accordance with Article XVII of the PPCD by March 31, 2024.

Sagamore's Progress Report No. 31, District on the River Redevelopment, February 2024 reported that representatives from Sagamore and Ecology visited the Site on February 12, 2024 to evaluate the fencing around the Site and ponding occurring as a result of stormwater being discharged from the James E. Keefe Bridge onto the Site (Aspect 2024b). The ponding from stormwater discharged from the James E. Keefe Bridge is within the cPAH-impacted soil boundary. Progress Report No. 31 also states that Sagamore understood that Ecology was in communication with the Washington State Department of Transportation (WSDOT) regarding potential repairs to the James E. Keefe Bridge to manage stormwater.

On April 1, 2024 Sagamore submitted a Schedule Extension Request to Ecology requesting that the start of construction deadline be extended, with a project restart goal of June 2024 and project construction completion in 2026 or 2027 (Aspect 2024c). Sagamore outlined the following reasons for the extension:

- *"changing market dynamics" and*
- *"complex soil conditions requiring additional pile pilot testing to design adequate building foundations."*

Sagamore's Schedule Extension Request also stated that *"because of the difficult soil conditions, the project has been redesigned by eliminating Building 2A and utilizing a more conventional spread footing foundation with piles only utilized beneath a portion of Building 2B"* and that the construction timeline may change depending on the timing of permits being approved by the City for the redesigned project.

Sagamore's Progress Report No. 37, District on the River Redevelopment, August 2024, reported that according to communication with Ecology, a WSDOT repair project had been funded to remedy the issue detailed above of stormwater discharging from the James E. Keefe Bridge to the Site. The Project was reported to be scheduled for the last 2 weeks of July 2024 (Aspect 2024d).

On August 26, 2024, Sagamore submitted a Fence, Trespass and Camping Mitigation, District on the River Redevelopment letter to Ecology as an attachment to Sagamore's Progress Report No. 37 that outlined suggested changes to Sagamore's management of Site security and riverbank access (Aspect

2024d). Sagamore states that *“fence fixes, and trespassing/camping mitigation is an ongoing and possibly unsustainable management issue”* and suggests that they discourage trespassing and camping along the riverbank within the area where shoreline armoring and bioengineering were installed in the vicinity of the James E. Keefe Bridge as detailed in the Site Cleanup Action Completion Report (Landau 2006). The following suggested actions are put forth in the letter:

- *“Put up signs on the slope on both sides of the bridge that say ‘Stay Out – Remediation Area – Move Upstream of This Area’ (put this east of the bridge) and ‘Stay Out – Remediation Area – Move Downstream of this Area’ (put this west of the bridge).”*
- *Move the north portion of the fence 1 to 2 feet in towards the south. This will partially expose the old path and make enough room for trespassers to walk behind the fence from the old trail on the west side to access the desired gathering site on that end.*
- *Create a 3-to-4-foot walking path near the east side of the project area that leads to the riverfront area where the camps are located, but east of the exclusion/remediation zone.*
- *Continue with security and police visits and notification of camping to the City.”*

Sagamore’s letter states that the placement of the “Stay Out – Remediation Area” signs are outside of the boundary of the cPAH-impacted soil.

Sagamore's Progress Report No. 38, District on the River Redevelopment, September 2024, reported that repairs by WSDOT to the James E. Keefe Bridge were scheduled for July but were not evident during Sagamore’s August Site visit (Aspect 2024e). Progress Report No. 38 also states that *“Sagamore has been working on the logistics around a building design change, by eliminating one of the two buildings along MLK. The design, lending, partnerships are coming together for this revised project and more information should be available from Sagamore in the coming weeks. A revised construction schedule will be included in the EDR Amendment transmitted to Ecology if/when this change is finalized.”* At the time that this report was prepared, no additional Sagamore Progress Reports were available on the Site’s Ecology webpage.

## 2024 OPERATION AND MAINTENANCE SITE INSPECTION

Consistent with procedures outlined in the Site O&M Plan, Landau personnel conducted an O&M Site inspection on November 6, 2024 to document Site conditions and to confirm that the cleanup action facilities were in compliance with the requirements of the FCAP. Observations of cleanup action activities being performed by Sagamore under CAP Amendment 1 were also included. Observations were documented with photographs (Attachment 1). Conditions of the soil cap, stormwater detention facilities, shoreline armoring and bioengineering, monitoring wells, and fencing are summarized in the following sections. Current cleanup action facilities, as well as selected Site development features completed by Sagamore, are shown on Figure 2. According to Sagamore’s April 1, 2024 Schedule Extension Request, building 2A has been eliminated from the project design for construction at the Site (Aspect 2024c). However, Site redevelopment activities completed to date by Sagamore were based on building 2A being included in the project design. It should be noted that numerous transient camps and

trespassers were observed, including a trespasser sleeping on top of Sagamore monitoring well AMW-1A, and a campfire was burning under the James E. Keefe Bridge at the top of the riverbank at the time Landau arrived at the Site for the November 6, 2024 inspection.

## Soil Cap

The 2024 O&M Site inspection indicated that the soil caps constructed at both the former SGP and ATC properties as part of the cleanup action are either intact or have been modified by redevelopment activities conducted by Sagamore.

- **ATC Soil Cap.** The soil cap overlying the ATC portion of the Site was observed to be intact and in good condition. No evidence of animal burrows was observed within the ATC property boundary. At the east end of the ATC soil cap, a debris pile consisting of trees and soil was observed. This debris pile was first observed during the 2023 O&M Site inspection. It appears that this debris may have resulted from the removal of several telephone or power poles that were observed to be downed and lying on the slope at the south end of the ATC soil cap. It does not appear that the ATC soil cap was compromised by these activities.
- **SGP Soil Cap.** The SGP soil cap was removed, and the subgrade for buildings 2A and 2B was excavated as part of Sagamore's redevelopment in March 2022. It is Landau's understanding that the removal of this soil cap was conducted under CAP Amendment 1. As outlined in Sagamore's Alternative Stormwater Plan Memo and Response to Ecology Comments (Aspect 2023b), a crushed surface soil cover over the building 2A and 2B excavations, with sumped stormwater collection basins at the low points of each excavation, were to be installed. At the time of the inspection, a crushed surface soil cover was observed at the footprints of buildings 2A and 2B and appeared to be sloped away from the cPAH-impacted soil boundary. A sumped stormwater collection basin was observed at the northeast end of the building 2A footprint, outside the boundary of cPAH-impacted soil; a stormwater collection basin was not observed at building 2B. The area of the crushed surface soil cover installed by Sagamore is shown on Figure 3. Limited stormwater infiltration controls were present on the remainder of the SGP portion of the Site at the time of Landau's O&M Site inspection. No evidence of animal burrows was observed within the former SGP boundary.

Additional observations made at the former SGP portion of the Site during the November 6, 2024 annual O&M Site inspection are listed below:

- **Grading.** Grading at the footprints of buildings 2A and 2B was observed to be generally sloped away from the cPAH-impacted soil boundary, and a sumped stormwater collection basin was observed near the northeast corner of the building 2A footprint. An elevated area of soil, approximately 2.5 ft above the surrounding grade, was observed in the western portion of the Site between the building 2B footprint, the riverbank, and the west infiltration gallery.
- **Test Piles.** Test piles, which were open to various depths, were observed within the footprint of buildings 2A and 2B, both inside and outside the area of cPAH-impacted soil, during Landau's Site visit.
- **Stockpiles.** Stockpiles were observed at various locations throughout the Site. The stockpile at the southwest end of the north detention basin was partially covered by plastic at the time of Landau's O&M Site inspection. The following uncovered stockpiles were observed at the Site.

- a. A stockpile containing soil, Site debris (bricks), concrete, and boulders was present to the west of the north detention basin.
- b. A stockpile containing boulders, concrete, Site debris (bricks), and soil was present underneath the James E. Keefe Bridge toward the south end of the former SGP property.
- c. A stockpile containing soil, boulders, concrete, wood debris, and scrap metal debris was present adjacent to the James E. Keefe Bridge to the northeast of the building 2B footprint.
- d. A stockpile containing large boulders was present to the southeast of the new west infiltration gallery.
- e. An elongated mound containing soil and Site debris (bricks) was present along the southern boundary of the building 2B footprint.

## Stormwater Facilities

Stormwater management facilities completed as part of the Site cleanup action included construction of stormwater detention basins at the north, east, and west ends of the Site (outside the boundaries of cPAH-impacted soil) and regrading of the Site to direct surface water runoff toward the stormwater facilities. As discussed above, construction of the lined evaporation pond in 2017 replaced the east detention basin. The west detention basin was removed by Sagamore as part of Site development, and the west infiltration gallery was excavated in 2022. Observations made during the 2024 O&M Site inspection indicated that the existing stormwater facilities and general Site grading are either intact and functioning as designed or have been modified by Sagamore redevelopment activities.

- **Evaporation Pond.** The City's lined evaporation pond contained healthy growing vegetation and appeared to be in good condition. Overall, the City right-of-way, which includes the lined evaporation pond, was observed to be in good condition.
- **West Infiltration Gallery.** The west detention basin was removed as part of Sagamore's redevelopment activities. The west infiltration gallery, located approximately 130 ft west of the former west detention basin, was excavated by Sagamore in 2022 and contains two drywells. It is Landau's understanding that the removal of the west detention basin and excavation of the west infiltration gallery was conducted under CAP Amendment 1. According to Sagamore's Engineering Design Report (Aspect 2021), stormwater collected from buildings on the western portion of the former SGP portion of the Site will be transferred to drywells installed outside the extents of cPAH-impacted soil, replacing the west detention basin. Due to the grade on the SGP portion of the Site not being developed to direct surface water runoff toward the stormwater facilities, it did not appear that infrastructure was in place to transfer stormwater to the infiltration gallery/drywells at the time of the O&M Site inspection.
- **North Detention Basin.** It is Landau's understanding that the modifications to this detention basin are being conducted under CAP Amendment 1. According to the EDR, stormwater collected from buildings on the eastern portion of the former SGP Site and from the Ben Burr Trail is intended to be routed to the north detention basin. Landau observed modifications to the north detention basin system, including drain rock in the entirety of the basin partially overlain by geotextile fabric. Due to the grade on the SGP portion of the Site not being developed to direct surface water runoff toward the stormwater facilities, it did not appear that

infrastructure was in place to transfer stormwater to the north detention basin at the time of Landau's O&M Site inspection. In addition, a large, mostly covered soil stockpile was present to the west of the north detention basin. No silt fence was present between the soil stockpile and the Spokane River.

- **Site Grading.** Site grading was observed on the former SGP and ATC portions of the Site.
  - Site Grading on the ATC portion of the Site. The grade at the ATC portion of the Site appears to promote stormwater being conveyed to the City's lined evaporation pond. No ponding was observed.
  - Site Grading on the former SGP portion of the Site. As part of Sagamore's redevelopment of the Site, the grade on the former SGP portion of the Site has been altered. Stormwater at the footprints of buildings 2A and 2B appears to be directed away from cPAH-impacted soil by the sloped crushed surface cover, and a sumped stormwater collection basin was observed near the northeast corner of the building 2A footprint, outside the area of cPAH-impacted soil. No ponding was observed at the footprints of buildings 2A and 2B. Stormwater throughout the remainder of the former SGP portion of the Site appears to infiltrate, including in areas containing cPAH-impacted soil. Ponding from rainfall was observed throughout the remainder of the SGP portion of the Site. Evidence of stormwater discharging from the James E. Keefe Bridge was observed in the form of moist to wet soil and surface staining.

## Shoreline Armoring and Bioengineering

The shoreline armoring and bioengineering system was constructed near the James E. Keefe Bridge as part of the original cleanup action and included construction of a riprap face with planted vegetation and a transition zone separating the Site's crushed gravel cover from the shoreline riprap face. In response to manmade erosion resulting from unauthorized excavation into the shoreline slope, an additional riprap face with a transition zone composed of crushed surfacing overlying geotextile fabric was constructed by Avista and BNSF near Site monitoring well MW02-40 in 2022.

- **Cleanup Action Shoreline Armoring and Bioengineering.** Erosion was observed in the upper portion of the shoreline riprap face and transition zone beneath the James E. Keefe Bridge along the Spokane River. The observed erosion appeared to be related to a transient camping area underneath the James E. Keefe Bridge at the top of the riverbank. No ponding or loose boulders were observed and no Site debris (i.e. bricks) was observed; however, the top of the slope had been significantly eroded by foot traffic, and it appeared that riprap had been moved to a small area on the uphill side of the east bridge pier to create a level platform for a camping area. No additional trees were observed to have been cut in the area surrounding the James E. Keefe Bridge since Landau's November 3, 2023 O&M Site Inspection. The majority of the remaining mature trees growing from the bank appear stable and healthy, with the exception of a few dead trees approximately 225 ft east of the James E. Keefe Bridge.
- **Shoreline Armoring near MW02-40.** The shoreline riprap face and transition zone adjacent to monitoring well MW02-40 along the Spokane River appeared to be in good condition. No erosion, ponding, or loose boulders were observed. The temporary fencing installed on both sides of the shoreline repair appeared to be damaged, likely due to transient foot traffic through the area. Transient camps were observed adjacent to the east of the riprap slope installed near

MW02-40, at the top of the riprap slope at the location of MW02-40, and approximately 280 ft west of the James E. Keefe Bridge.

## Compliance Monitoring Wells

All Site compliance monitoring wells were secure and observed to be in good condition. No vandalism, casing or monument damage, or settling was observed. The asphalt-paved Ben Burr Trail on the former SGP portion of the Site, including the asphalt surrounding monitoring well MW04-20 located in the former Ben Burr Trail, has been removed by Sagamore. A traffic drum has been placed over monitoring well MW04-20, and the well appeared to be in good condition. Abundant refuse and debris were present along the shoreline on top of monitoring wells MW02-20 and MW02-40. However, the monitoring wells appeared to be in good condition.

## Fencing

As part of the original cleanup action, a chain-link fence was installed at the east Site boundary, along North Erie Street, to help prevent direct contact with cPAH-impacted soils by limiting access by the general public. Additional fencing was installed in 2017 and 2021. Fencing along the ATC portion of the Site paralleling North Erie Street near ATC07-20, at the southwest corner of the lined evaporation pond, and underneath and west of the James E. Keefe Bridge was observed to be damaged.

Sagamore installed temporary chain-link fencing around the former SGP property to provide security during redevelopment activities. Additional observations regarding former SGP property fencing are as follows:

- The fencing installed by Sagamore on the former SGP property near the Spokane River is generally located at the top of the bank, and sections of fencing leading from the top of the bank to the river are present at the eastern and western extents of the fence line. Both sections of fence leading from the top of the bank to the river were observed to allow access to the Site and the riverbank as a result of holes having been cut into the fence or portions of the fence removed. At the western end of the SGP portion of the Site, the fencing was observed to be taken down, allowing access along the riverbank and into the main area of the SGP portion of the Site. At the eastern end of the SGP portion of the Site, the fencing extending down to the riverbank has a large hole cut in it, allowing pedestrian access to the riverbank. A large portion of fence, approximately 210 ft long, east of the James E. Keefe bridge had been laid down and partially disconnected from the adjacent fencing at the time of Landau's O&M Site inspection, allowing for access to the riverbank and the Site. Additionally, fencing extending down to the riverbank has been removed along the boundary with the adjacent property to the northeast, allowing access to the SGP portion of the Site.
- During construction of the shoreline armoring near MW02-40 on October 11 and 12, 2022, a large hole cut into the portion of fence leading to the river near the north detention pond was observed, which allowed access to the shoreline between the river and the fencing at the top of the slope. This hole was observed during Landau's 2022 and 2023 O&M Site inspections and again during Landau's 2024 O&M Site inspection.

- Additional holes in the fencing around the former SGP portion of the Site were observed to the northeast and northwest of the north detention basin and at the south end of the Site underneath the James E. Keefe bridge.

Figure 2 shows the locations of the compromised perimeter fencing at the Site.

## SUMMARY

The 2024 O&M Site inspection was conducted on November 6, 2024 in accordance with the O&M Plan. Sagamore purchased the former SGP property parcels in 2021 and began redevelopment of that portion of the Site in 2022. Sagamore installed a crushed surface soil cover over sections of the SGP portion of the Site in 2023. No Site improvements were made during 2024. Observations made during the 2024 O&M Site inspection indicated the original cleanup action facilities that have not been modified by redevelopment activities conducted by Sagamore were in place and generally functioning as intended. Based on observations made during the 2024 O&M Site inspection, Sagamore has made significant modifications to cleanup action facilities at the Site. It is Landau's understanding that these modifications were guided by CAP Amendment 1; however, modifications have been made that appear to potentially threaten the effectiveness of the final cleanup action at the SGP portion of the Site.

No significant changes were observed in the ATC portion of the Site, and Site improvements by the City appeared to have been completed. The following summarizes Landau's November 6, 2024 O&M Site inspection observations. Any additional Site activities will be closely monitored as Site access allows.

- **Soil Cap.** Observations of the cleanup action ATC and SGP soil caps are summarized below.
  - a. SGP Soil Cap. The soil cap overlying the former SGP property was removed in March 2022, and the SGP portion of the Site grade has been altered. A crushed surface soil cover at the footprints of buildings 2A and 2B appears to direct stormwater away from the cPAH-impacted soil boundary, with a sumped stormwater collection basin at the northeast end of the building 2A footprint, located outside the cPAH-impacted soil boundary; a stormwater collection basin was not observed at building 2B. Based on observations made during the 2024 O&M Site inspection, it does not appear that stormwater within the footprint of building 2B is managed in accordance with Sagamore's Alternative Stormwater Plan Memo. No facilities were observed to be in place to direct stormwater and snowmelt runoff away from areas of impacted soil on the remainder of the SGP portion of the Site, and pooling was observed throughout the remainder of the former SGP portion of the Site. Additionally, previously installed open test piles within the cPAH-impacted soil boundary were observed. Based on these observations, soil cap conditions on the former SGP property do not appear to be consistent with the requirements of CAP Amendment 1.
  - b. ATC Soil Cap. The ATC soil cap was observed to be in good condition and operating in accordance with the FCAP. A debris pile consisting of trees and dirt was observed near the east end of the ATC soil cap.
- **Stormwater Facilities.** Observations of the current Site stormwater facilities are summarized below. Based on Landau's observations that stormwater is not being directed to areas outside the footprint of cPAH-impacted soil on much of the SGP portion of the Site, stormwater facility

conditions on the former SGP portion of the Site do not appear to be consistent with the requirements of CAP Amendment 1.

- a. West Infiltration Gallery. The west infiltration gallery was excavated by Sagamore in 2022. The west detention basin was removed during Sagamore's redevelopment of the Site.
  - b. North Detention Basin. The north detention basin was in the process of being reconstructed by Sagamore at the time of Landau's O&M Site inspection.
  - c. Lined Evaporation Pond. The lined evaporation pond was observed to be in good condition and operating in accordance with the FCAP.
- **Shoreline Armoring and Bioengineering**. The cleanup action shoreline riprap face and shoreline armoring near MW02-40 were observed to be in generally good condition. Several cleanup action bioengineering system trees were observed to have been cut down during Landau's 2023 O&M Site inspection.
  - a. Cleanup Action Shoreline Armoring and Bioengineering. Significant erosion was observed in the upper portion of the shoreline riprap face and transition zone beneath the James E. Keefe Bridge. The observed erosion appeared to be related to a transient camping area underneath the James E. Keefe Bridge at the top of the riverbank. The majority of the mature trees growing from the bank, aside from those observed to be cut down at the time of the 2023 O&M Site Inspection, appear stable and healthy, with the exception of a few dead trees approximately 225 ft east of the James E. Keefe Bridge.
  - b. Shoreline Armoring near MW02-40. The shoreline armoring near MW02-40 was observed to be in good condition. The unauthorized excavation between MW02-40 and the Spokane River was due to transient activity near the riverbank and required slope repairs, which Avista and BNSF implemented, to prevent further erosion and discourage continued unauthorized excavation into the slope. The temporary fencing installed on both sides of the shoreline repair appeared to be damaged, indicating transient foot traffic through the area is still occurring. Transient camps were observed adjacent to the east of the riprap slope installed near MW02-40, at the top of the riprap slope at the location of MW02-40, and approximately 280 ft west of the James E. Keefe Bridge.
- **Compliance Monitoring Wells**. All Site compliance monitoring wells were secure and observed to be in good condition, MW02-20 and MW02-40 being covered by refuse and debris likely related to transient camps.
- **Fencing**. Observations of Site fencing are summarized below.
  - a. ATC fencing. Sections of fencing on the ATC portion of the Site paralleling North Erie Street, at the southwest corner of the lined evaporation pond and underneath the James E. Keefe Bridge, were observed to be damaged.
  - b. SGP Fencing. Both sections of temporary construction fencing leading from the top of the bank to the river have been compromised. Additional holes in the fencing at the northwest corner of the Site, northeast and northwest of the north detention pond, and at the south end of the Site underneath the James E. Keefe Bridge were observed. A large portion of fence, approximately 210 ft long, east of the James E.

Keefe Bridge had been laid down and partially disconnected from the adjacent fencing. The observed holes present in the SGP fencing appear to allow access to the SGP portion of the Site and the shoreline. Because the soil cap has been removed from the SGP portion of the Site, the lack of Site security may result in the general public coming into contact with cPAH-impacted soil.

## USE OF THIS TECHNICAL MEMORANDUM

This Technical Memorandum has been prepared for the exclusive use of Avista and BNSF for specific application to the Hamilton Street Bridge Site project. No other party is entitled to rely on the information, conclusions, and recommendations included in this document without the express written consent of Landau. Further, the reuse of information, conclusions, and recommendations provided herein for extensions of the project or for any other project, without review and authorization by Landau, shall be at the user's sole risk. Landau warrants that within the limitations of scope, schedule, and budget, our services have been provided in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing in the same locality under similar conditions as this project. We make no other warranty, either express or implied.

This document has been prepared under the supervision and direction of the following key staff.

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Associate Geologist

WMB/SRK/tac  
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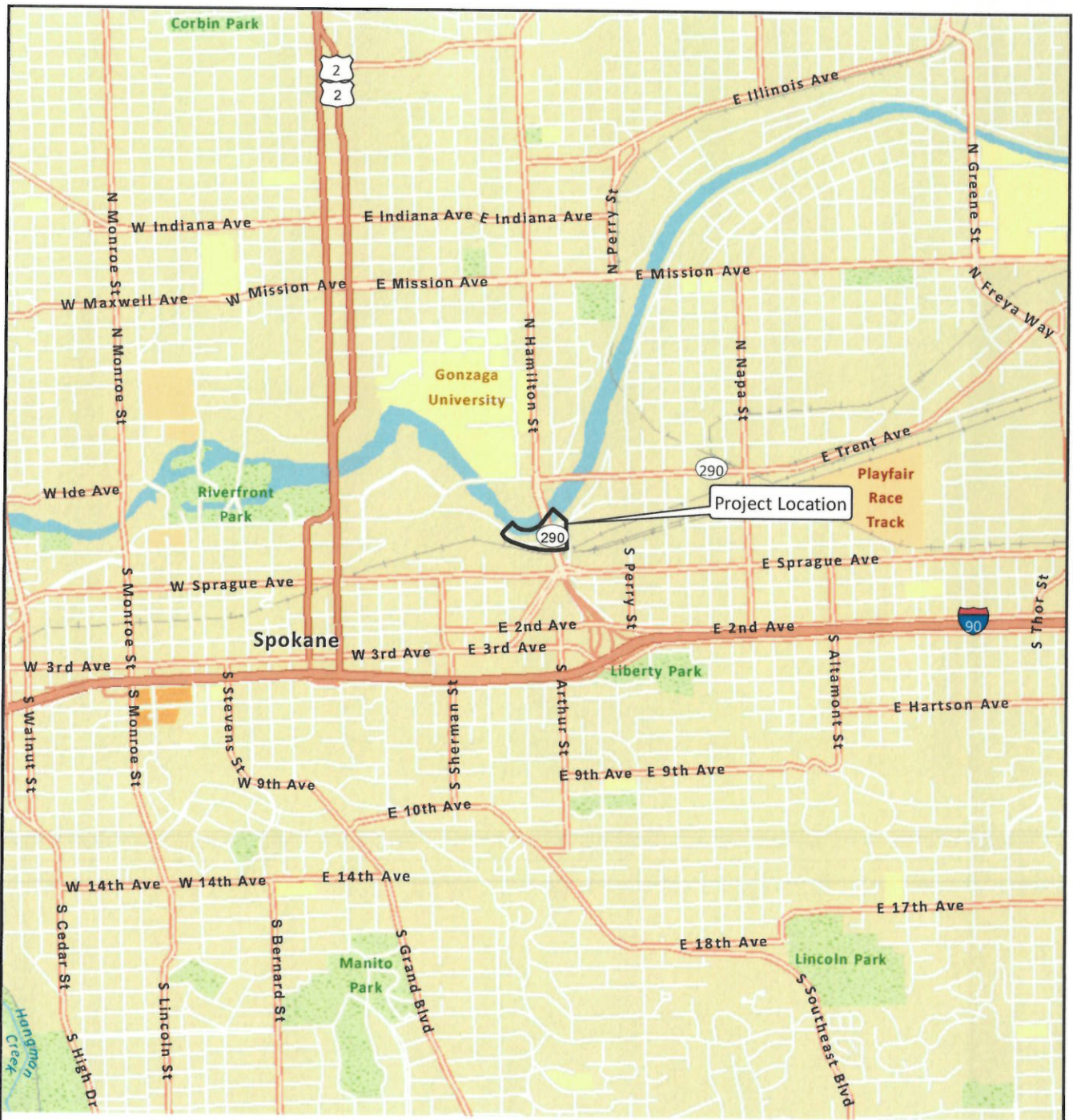
### Attachments

- Figure 1. Vicinity Map
- Figure 2. Site Area and Site Features
- Figure 3. Cleanup Action Grading Plan (Landau 2006) and Crushed Surface Soil Cover (Sagamore 2023)
- Attachment 1. Site Inspection Photographs

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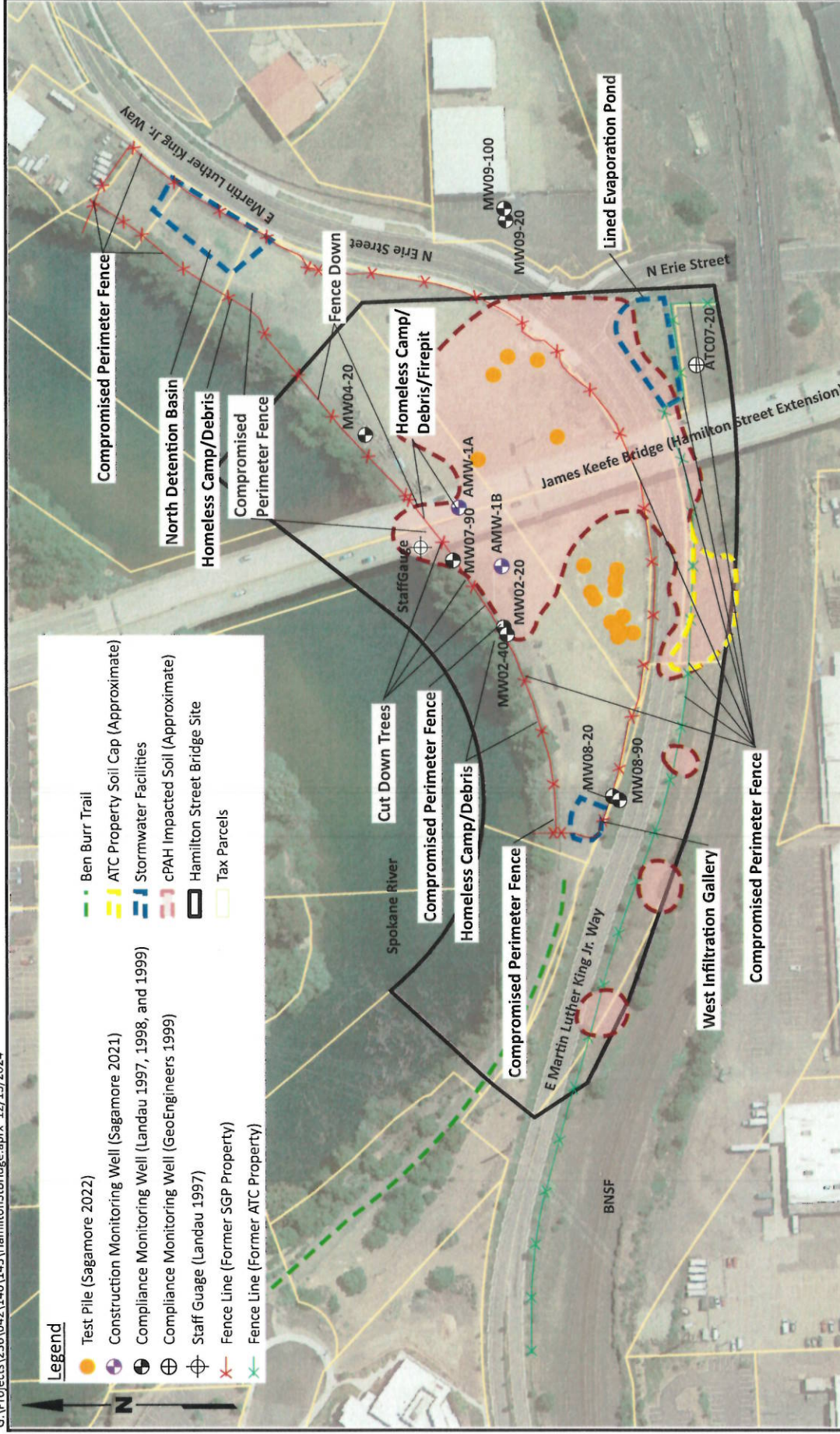
Data Source: Esri.

Hamilton Street Bridge Site  
Spokane, Washington

Vicinity Map

Figure  
1

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#### Abbreviations

ATC = American Tar Company  
BNSF = BNSF Railway  
cPAH = Carcinogenic Polycyclic Aromatic Hydrocarbons  
Sagamore = Sagamore, LLC  
SGP = Spokane Manufactured Gas Plant

Scale in Feet

Source: Google Earth Pro, July 2022; Spokane County GIS

Hamilton Street Bridge Site  
Spokane, Washington

#### Site Area and Site Features

Figure

2

ATC = American Tar Company  
BNSF = BNSF Railway  
cPAH = Carcinogenic Polycyclic  
Sagamore = Sagamore, LLC  
SGP = Spokane Manufactured

**1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.**

Source: Google Earth Pro, July 2022; Spokane County GIS

<p><b>Cleanup Action Grading Plan (Landau 2006) and Crushed Surface Soil Cover (Sagamore 2023)</b></p>	<p>Figure 3</p>
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Hamilton Street Bridge Site  
Spokane, Washington

Figure 3

ATTACHMENT 1

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## Site Inspection Photographs



1. View of former SGP portion of the site (looking northeast).



2. View of ATC portion of the site and ATC monitoring wells (looking east).



1. View of the partially covered stockpile adjacent to the north detention pond containing Site debris (bricks) on the former SGP property (looking east).

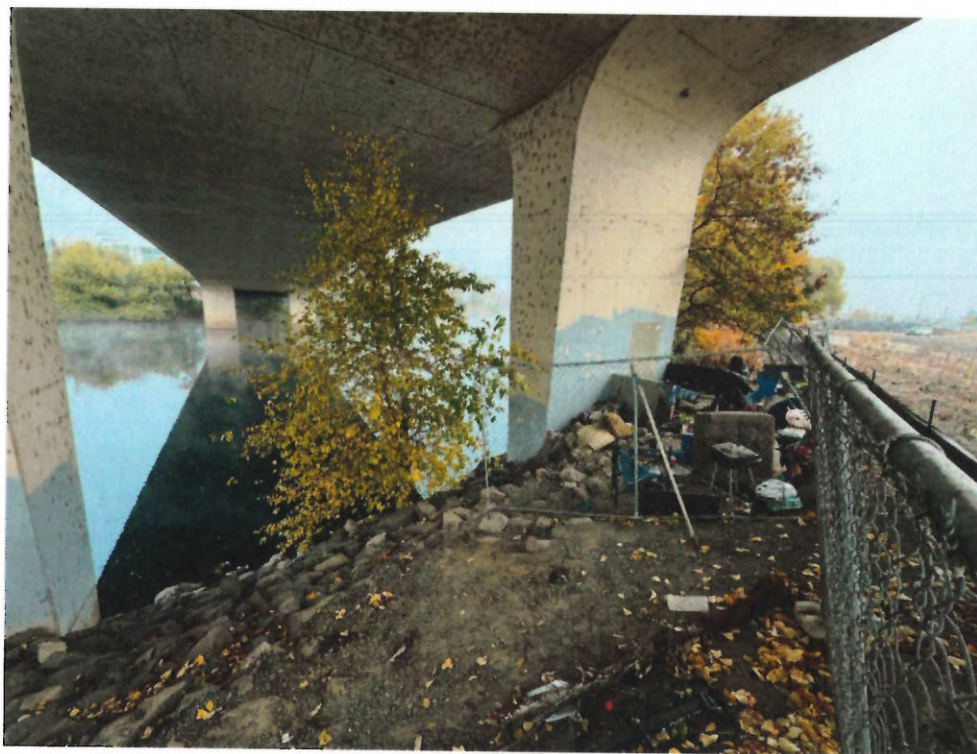


2. View of laid down fence along the top of the riverbank east of the James E. Keefe Bridge on the former SGP property (looking west).

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1. View of the MW4 monitoring well cluster on the former SGP property (looking south).



2. View of transient camp and shoreline armoring erosion underneath the James E. Keefe Bridge on the former SGP property (looking east).

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1. View of compromised perimeter fence at the south end of the former SGP property (looking south).



2. View of regraded area in the footprint of Building 2A on the former SGP property (looking northeast).

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1. View of ponding within the cPAH-impacted soil boundary on the former SGP property (looking southeast).



2. View of MW7-90 on the former SGP property (looking northeast).

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1. View of transient refuse and compromised perimeter fence at the location of monitoring well MW2-40 on the former SGP property (looking north).



2. View of monitoring well MW2-20 on the former SGP property (looking north).

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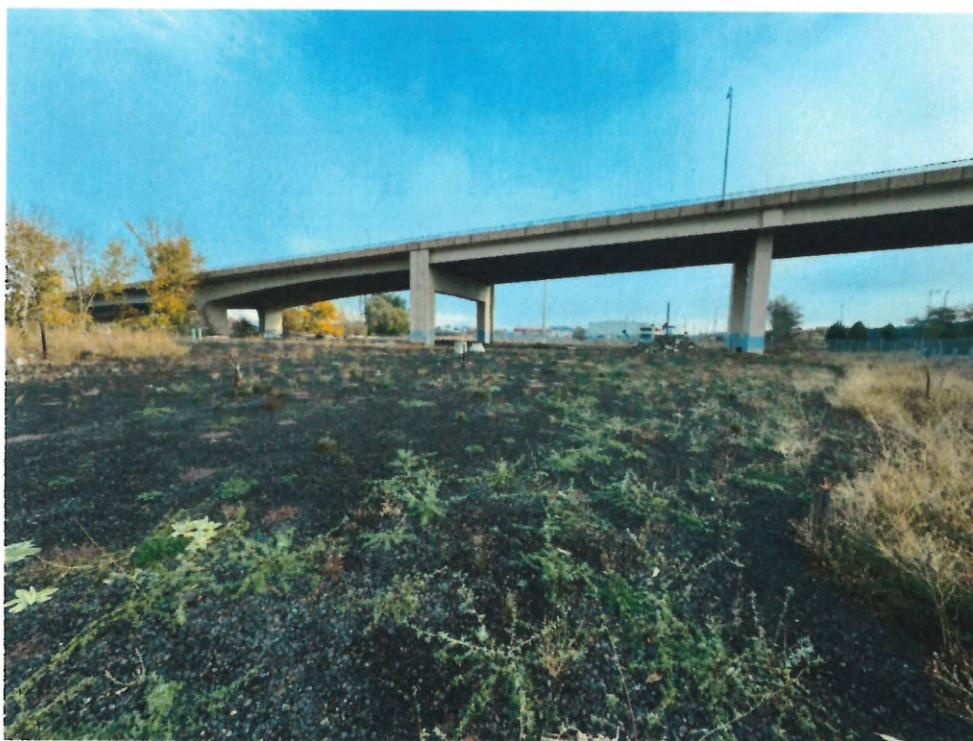


1. View of MW8 monitoring well cluster on the former SGP property (looking southwest).



2. View of the new west infiltration gallery and compromised perimeter fencing on the former SGP property (looking west).

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1. View of regraded area in the footprint of Building 2B on the SGP portion of the site (looking east).



2. View of the MW9 monitoring well cluster in the parking lot east of North Erie Street (looking east).



1. View of lined evaporation pond on the former ATC property (looking west).



2. View of compromised perimeter fence at the northeast end of the former SGP property (looking west).

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1. View of north detention pond on the former SGP property (looking west).



2. View of compromised riverbank fencing and abundant debris on the former SGP property (looking west).

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