LANDAU ASSOCIATES

TECHNICAL MEMORANDUM

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

FROM: Shane Kostka, LG

DATE: December 22, 2023

RE: 2023 Annual Operation and Maintenance Site Inspection
Hamilton Street Bridge Site
Spokane, Washington
Project No. 0236042.140

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 2023 operation and maintenance (O&M) and cap inspection activities completed at the Hamilton Street Bridge Site (Site; Cleanup Site ID No. 3509; Facility/Site ID No. 84461527) 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 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 2023 annual 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) MW2-40, an additional riprap face and a transition zone were constructed between MW2-40 and the Spokane River.
- **Monitoring Wells.** Fifteen groundwater monitoring wells installed during the preliminary Site investigation and remedial investigation are currently located at the Site (MW2-20, MW2-40, MW2-100, MW4-20, MW4-40, MW4-100, MW8-20, MW8-40, MW8-90, MW9-20, MW9-40,

MW9-100, MW7-90, ATC07-40, and ATC07-20). Monitoring wells MW2-20, MW2-40, MW4-20, MW7-90, MW8-20, MW8-90, MW9-20, MW9-100, 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 A. 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 MW8-40 and MW8-90, 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 MW8-20, 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 MW2-20, MW2-40, MW2-100, MW4-20, and MW7-90 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 MW8-20, 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 paving North Erie Street. The parking lot containing monitoring wells MW9-20, MW9-40, and MW9-100, 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 former 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 Site O&M Plan and the Compliance Monitoring Plan (CMP; Landau 2003b). Sagamore's redevelopment plan consists of four residential buildings to be constructed north of MLK Jr Way; two of which (buildings 2A and 2B) are planned to be constructed on micropile or helical pile foundations.

Prior to beginning redevelopment, Sagamore fenced their portion of the Site and, in March of 2021, installed construction groundwater monitoring wells AMW-1A and AMW-1B (Figure 2), which are intended to monitor groundwater adjacent to the piles installed for buildings 2A and 2B. A baseline construction groundwater monitoring event was conducted by Sagamore in April 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 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 MW2-40, 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 MW2-40 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 MW2-40, 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. 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 were 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. During the Site visit, Ecology observed that openings had been cut in the northeast portion of Site fencing, site debris (bricks) were 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 2023a). 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 the PPCD Article VI Work to be Performed, Sagamore must protect all existing Site remedial structures that are 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 at a minimum every seven days 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 there is no schedule set by this date, then Sagamore must backfill the subgrade excavations at proposed buildings 2A and 2B back to its original grade to be able 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 was not to start by April 14, 2023, Sagamore would notify Ecology of the proposed schedule in an additional corrective action notice response letter.

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, 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.

2023 OPERATION AND MAINTENANCE SITE INSPECTION

Consistent with procedures outlined in the Site O&M Plan, Landau personnel conducted a Site visit on November 3, 2023 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.

Soil Cap

The 2023 Site inspection indicated that the soil cap 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. It appeared 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. 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 cap inspection Site visit. No evidence of animal burrows was observed within the former SGP boundary.

Additional Site observations made in the November 3, 2023 annual O&M inspection visit 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. An open

excavation, advanced to a depth of approximately 3 ft and approximately 81 square ft in area, exposing Site development infrastructure piping and containing site debris (bricks), was observed to the north of the building 2A footprint, outside of the area of cPAH-impacted soil.

- **Test Piles.** Test piles were observed within the footprint of buildings 2A and 2B during Landau's Site visit. Test piles within the area of cPAH-impacted soil were observed to be open to as deep as 3.8 ft below ground surface (bgs), and test piles observed outside of the area of cPAH-impacted soil were open to depths greater than 25 ft bgs (Figure 2).
- **Stockpiles.** Stockpiles were observed at various locations throughout the Site. A stockpile, mostly covered by plastic, was present at the southwest end of the north detention basin. The following uncovered stockpiles were observed at the Site.
    a. A stockpile containing dirt, 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 dirt was present underneath the James E. Keefe Bridge toward the south end of the former SGP property.
    c. A stockpile containing dirt, 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 dirt 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 a west infiltration gallery was excavated in 2022. Observations made during the 2023 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, with the exception of an apparent small fire pit near the southwest corner. Overall, the City right-of-way, which included 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 cap inspection Site visit.

- **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 geotextile fabric overlying drain rock in the entirety of the 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 north detention basin at the time of Landau's cap inspection Site visit. 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.

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 MW2-40 in 2022.

- **Cleanup Action Shoreline Armoring and Bioengineering.** The shoreline riprap face and transition zone beneath and adjacent to the James E. Keefe Bridge along the Spokane River appeared to be in good condition. No erosion, ponding, or loose boulders were observed. During Landau's November 3, 2023 cap inspection Site visit, a transient camp was observed approximately 375 ft east of the James E. Keefe Bridge. It also appeared that additional trees had been cut in the area surrounding the James E. Keefe Bridge. The majority of the remaining

mature trees growing from the bank appeared stable and healthy, with the exception of a few dead trees approximately 225 ft east of the James E. Keefe Bridge.

- **Shoreline Armoring near MW2-40.** The shoreline riprap face and transition zone adjacent to monitoring well MW2-40 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 MW2-40 and approximately 250 ft west of the James E. Keefe Bridge.

Monitoring Wells

All 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 MW4-20 located in the former Ben Burr Trail, has been removed. A traffic drum has been placed over monitoring well MW4-20, and the well appeared to be in good condition. Abundant refuse and debris were present along the shoreline near monitoring well MW2-20, and the fencing near monitoring wells MW8-20 and MW8-90 was observed to be damaged; 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 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 for travel along the riverbank. Additionally, fencing extending down to the riverbank has been removed along an adjacent property to the northeast, allowing access to the SGP portion of the Site.
- During construction of the shoreline armoring near MW2-40 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 cap inspection and again during Landau's 2023 cap inspection.

- Additional holes in the fencing around the former SGP portion of the Site were observed to the southwest of the north detention basin, approximately 100 ft to the northeast of MW4-20, and by the MW8 cluster of monitoring wells.

SUMMARY

The 2023 O&M Site inspection was conducted on November 3, 2023 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. Observations made during the 2023 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 2023 O&M 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.

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 15, 2023 cap inspection Site visit 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 2023 O&M 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.
    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 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 inspection Site visit.

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 MW2-40 were observed to be in generally good condition. Several cleanup action bioengineering system trees were observed to have been cut down.

  a. Cleanup Action Shoreline Armoring and Bioengineering. The cleanup action shoreline armoring was generally observed to be in good condition and operating in accordance with the FCAP; however, several trees near the western extent of the cleanup action shoreline armoring and bioengineering had been cut down adjacent to transient camps observed along the shoreline.

  b. Shoreline Armoring near MW2-40. The shoreline armoring near MW2-40 was observed to be in good condition. The unauthorized excavation between MW2-40 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. A transient camp and several downed trees were observed to the east, and a transient camp was observed west of the erosion repair.

- **Monitoring Wells.** All monitoring wells were secure and observed to be in good condition.
- **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 near the north detention pond, southwest of the North Detention Basin, approximately 100 ft to the northeast of MW4-20, and by the MW8 cluster of monitoring wells were observed. The observed holes present in the SGP fencing appear to allow access to the SGP portion of the Site and the shoreline.

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.

LANDAU ASSOCIATES, INC.

Shane Kostka, LG
Project Geologist

WMB/SRK/DHF/tac
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Attachments

Figure 1. Site Location Map
Figure 2. Site Map
Figure 3. Cleanup Action Grading Plan and Crushed Surface Soil Cover (Installed 2023)
Attachment 1. Site Inspection Photographs

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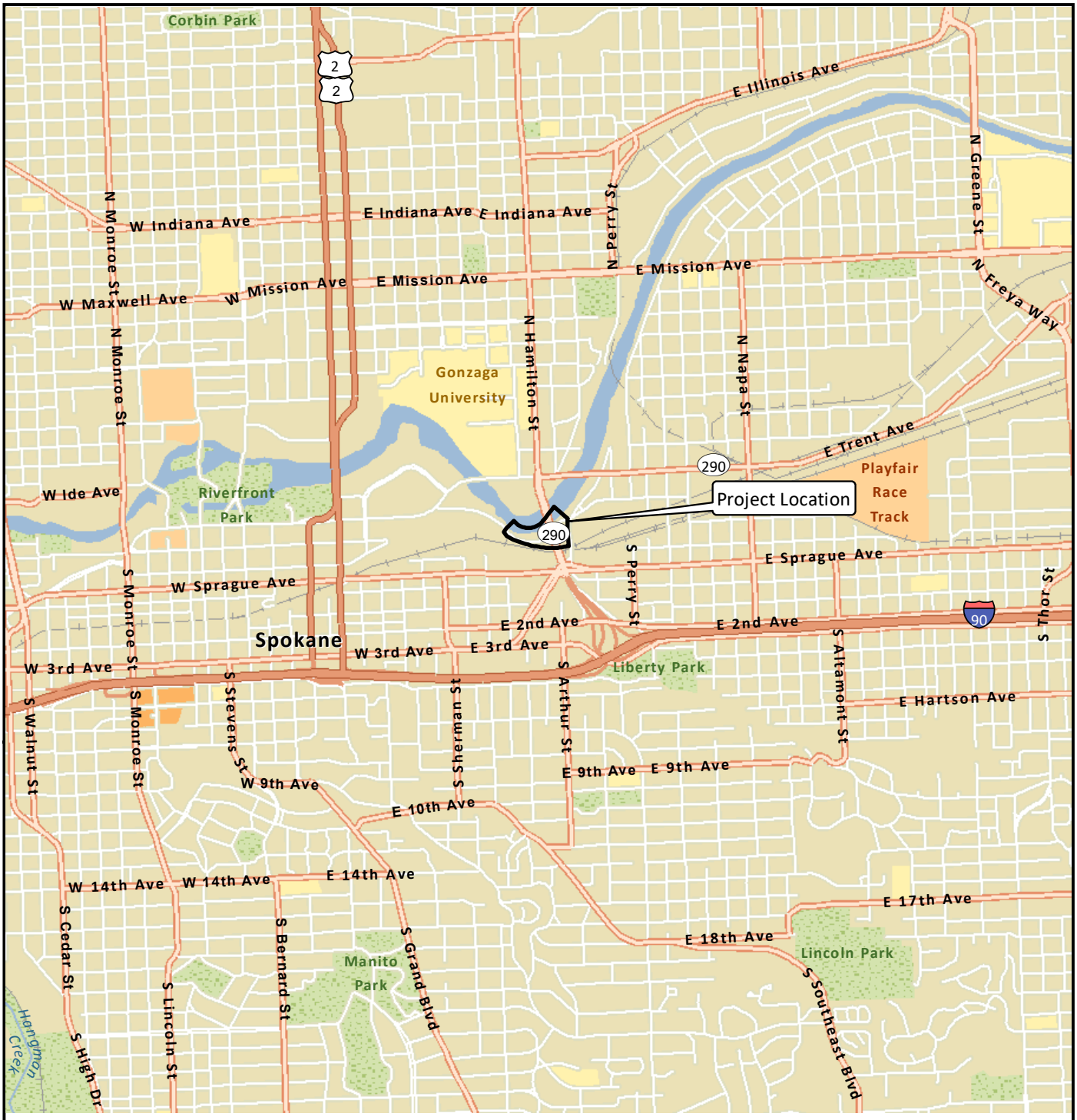

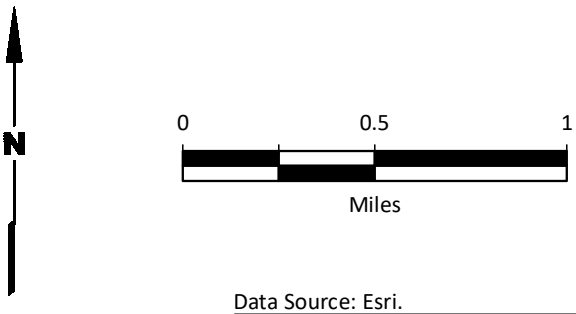

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Hamilton Street Bridge Site Spokane, Washington	**Vicinity Map**	Figure 1

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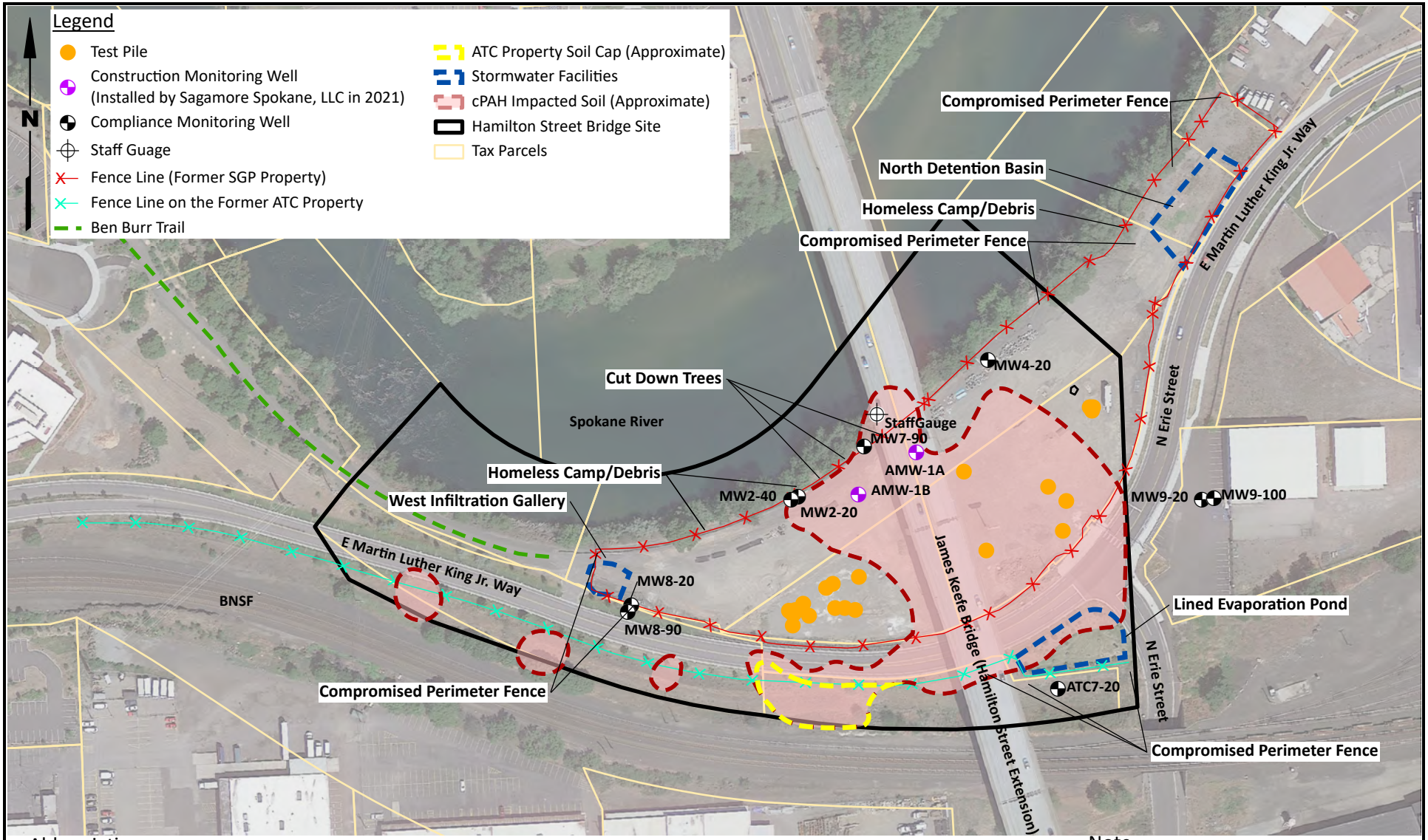

Abbreviations

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

0 200 400

Scale in Feet

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

Note

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

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Hamilton Street Bridge Site
Spokane, Washington

Site Area and Site Features

Figure
2

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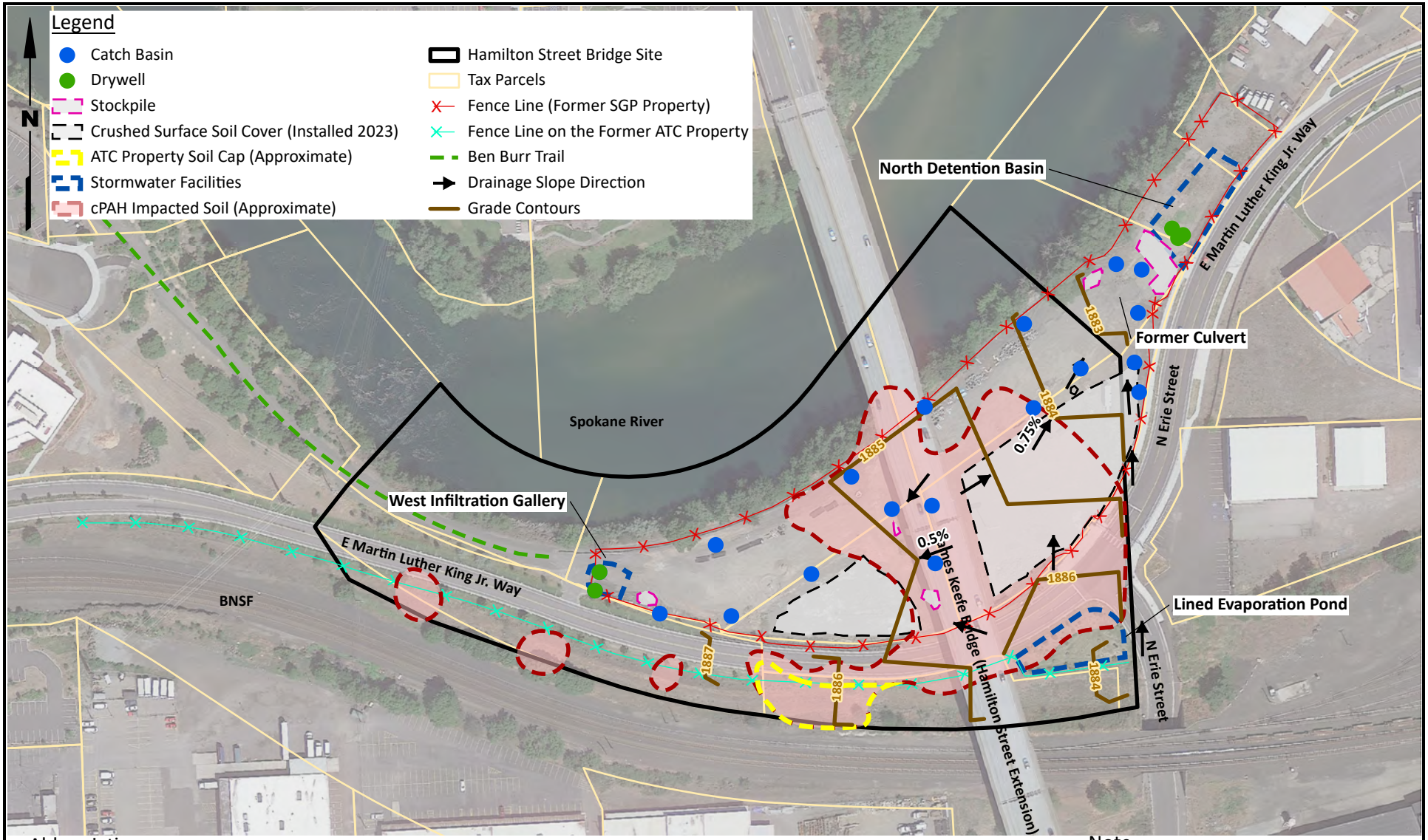

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Hamilton Street Bridge Site
Spokane, Washington

Cleanup Action Grading Plan and Crushed Surface Soil Cover (Installed 2023)

Figure 3

ATTACHMENT 1

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 west).

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Hamilton Street Bridge Site
Spokane, Washington

2023 Annual O&M Site Inspection Photographs

Figure
1-1

1. View of former SGP property with ponding from rainfall within cPAH impacted soil footprint. (looking east).

2. View of recently re-graded area in the footprint of Building 2A on former SGP property (looking west).

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Hamilton Street Bridge Site
Spokane, Washington

2023 Annual O&M Site Inspection Photographs

Figure
1-2

1. View of the east end of the recently re-graded area in the footprint of Building 2A sloped to sumped basin in center of photo on former SGP property (looking east).

2. View of recently re-graded area in the footprint of Building 2B on former SGP property (looking east).

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Hamilton Street Bridge Site
Spokane, Washington

2023 Annual O&M Site Inspection Photographs

Figure
1-3

1. View of test pile within the cPAH impacted soil footprint on the former SGP property.

2. View of north detention basin and stockpile to the southwest of the north detention basin on former SGP property (looking west).

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Hamilton Street Bridge Site
Spokane, Washington

2023 Annual O&M Site Inspection Photographs

Figure
1-4

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

2. View of cleanup action shoreline armoring transition zone with cut down tree on the former SGP property (looking north).

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Hamilton Street Bridge Site
Spokane, Washington

2023 Annual O&M Site Inspection Photographs

Figure
1-5

1. View of shoreline armoring transition zone and transient refuse near MW2-40 on the former SGP property (looking northeast).

2. View of monitoring well cluster MW4. MW4-20 is located beneath the traffic barrel on the right (looking west).

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Hamilton Street Bridge Site
Spokane, Washington

2023 Annual O&M Site Inspection Photographs

Figure
1-6

1. View of monitoring well cluster MW8 and compromised perimeter fence (right side) on the former SGP property (looking southwest).

2. View of the new west infiltration gallery (looking west).

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Hamilton Street Bridge Site
Spokane, Washington

2023 Annual O&M Site Inspection Photographs

Figure
1-7

1. View of hole in fencing near north detention basin at the eastern end of the SGP portion of the site (looking north).

2. View of hole in fencing, leading to transient camp on shoreline, to the southwest of the north detention basin on former SGP property (looking west).

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Hamilton Street Bridge Site
Spokane, Washington

2023 Annual O&M Site Inspection Photographs

Figure
1-8

1. View of compromised perimeter fencing at the western boundary of the former SGP property (looking east).

2. View of camouflaged transient camp to the east of the riprap slope installed near MW2-40 (looking west).

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Hamilton Street Bridge Site
Spokane, Washington

2023 Annual O&M Site Inspection Photographs

Figure
1-9

1. View of damaged perimeter fencing at the southwest corner of the lined evaporation pond on the former ATC property (looking north).

2. View of damaged perimeter fencing paralleling North Erie Street near ATC07-20 on the former ATC property (looking west).

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Hamilton Street Bridge Site
Spokane, Washington

2023 Annual O&M Site Inspection Photographs

Figure
1-10

1. View of debris pile at the east end of the soil cap on the former ATC property (looking south).

2. View of transient camp and related debris approximately 250 ft west of the James E. Keefe Bridge on the former SGP property (looking northeast).

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Hamilton Street Bridge Site
Spokane, Washington

2023 Annual O&M Site Inspection Photographs

Figure
1-11

1. View of debris pile including bricks along the southern end of the Building 2B footprint on the former SGP property (looking southeast).

2. View of stockpile underneath the James E. Keefe Bridge toward the south end of the former SGP property (looking north).

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Hamilton Street Bridge Site
Spokane, Washington

2023 Annual O&M Site Inspection Photographs

Figure
1-12

1. View of stockpile to the west of the north detention basin on the former SGP property (looking northwest).

2. View of stockpile adjacent to the James E. Keefe Bridge to the northeast of the Building 2B footprint on the former SGP property (looking southwest).

1. View of the elevated area of soil observed in the western portion of the former SGP property (looking southwest).

2. View of apparent small fire pit near the southwest corner of the lined evaporation pond on the former ATC property (looking south).