

Technical Memorandum

TO: Mr. Bryce Robbert

FROM: Ryan Reich, L.G. *RAR*
Tom Briggs, P.E. *TB*

DATE: January 3, 2019

RE: **2018 Annual O&M Site Inspection**
Hamilton Street Bridge Site
Spokane, Washington
Project No. 0236042.000

Introduction

On behalf of the Avista Corporation (Avista) and The Burlington Northern and Santa Fe Railway Company (BNSF), Landau Associates (LAI) has prepared this memorandum summarizing the operation and maintenance (O&M) activities completed for 2018 at the Hamilton Street Bridge site (site) at 111 North Erie Street in Spokane, Washington (Figure 1). 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). An Operations and Maintenance Plan (O&M Plan) was prepared for the site to meet the requirements of the Consent Decree and requirements of the Model Toxics Control Act (MTCA). The O&M Plan describes the requirements and procedures associated with maintenance of the remedial facilities described below by ensuring ongoing performance and maintenance of the intended design function (LAI, 2004b). In accordance with the Consent Decree, the remedial facilities require an annual O&M site inspection to identify problems or areas of concern, evaluate the appropriate mitigation measures, and coordinate repairs. The purpose of this technical memorandum is to document the results of the 2018 annual site inspection. The site boundary is shown on Figure 2.

Site Cleanup Action

In 2004, a cleanup action was completed at the site in accordance with the requirements of the Consent Decree and the FCAP to address soil contaminated with polycyclic aromatic hydrocarbons (PAHs). The cleanup construction components were presented in the site Engineering Design Report (EDR) (LAI 2003) and the cleanup action construction activities, completed in accordance with methods and procedures specified in the Plans and Specifications (LAI 2004a), are summarized in LAI's Cleanup Action Completion Report (LAI 2005). The primary facilities developed during the course of the cleanup action included the following:

- **Soil Cap.** A soil cap was placed site-wide to prevent direct contact with left-in-place PAH-contaminated soil and to control infiltration. The soil cap includes a minimum 6 inches of crushed rock at the surface to promote surface water runoff away from contaminated areas.

- **Stormwater Facilities.** Stormwater detention basins were constructed at the north, east, and west ends of the site (see Figure 2). The overall site grade was developed to direct surface water runoff toward these three unlined infiltration basins. The north detention basin includes two Type A drywells.
- **Bioengineering System.** The site bioengineering system included reconstruction of a riprap face with planted vegetation to control shoreline erosion at the Spokane River. A transition zone consisting of non-woven textile and 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 was established the irrigation system was removed.
- **Monitoring Wells.** The site includes 14 monitoring wells (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, and ATC7-20) used for measuring groundwater levels and collecting groundwater samples 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 by limiting access by the general public.

Site Improvements (2016 – 2018)

Starting in 2016, after acquiring an easement, the City of Spokane (City) began Phase 2A road construction on the east-west 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 the designed road grade and the central and east onsite portions 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 PVC well casing elevations were surveyed with respect to site monitoring well MW08-20 top-of-PVC casing by the City of Spokane 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 impermeable bio swales. Runoff captured by the swales is conveyed east towards a lined evaporation pond at the southeast corner of the site. The evaporation pond replaced the previously described south detention basin. All excess accumulation in the evaporation pond spills over to City of Spokane Sewer Service.

Starting in 2018, the City of Spokane, under Ecology's approval and oversight, began Phase 2B construction by extending MLK Jr Way to the east beyond the site boundary and to the northeast toward Trent Avenue. This portion of MLK Jr Way was also capped with asphalt pavement, concrete

curbing, and adjacent impermeable bio swales that convey road surface runoff to City of Spokane Sewer service.

Development of the Ben Burr Trail, east-west, along the site's Spokane River shoreline, was concurrently completed in 2018 on City of Spokane easements with Ecology's approval and oversight. The final grade for the asphalt-paved trail sits slightly above the established surrounding 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 lowered and refitted with flush-surface monuments. In October 2018, the adjusted top-of-PVC casing elevations were resurveyed with respect to site monitoring well MW8-20 top of PVC casing by the City of Spokane using a licensed surveyor.

2018 O&M Site Inspection

Consistent with procedures outlined in the site O&M Plan (LAI 2004b), LAI personnel conducted a site visit on November 2, 2018 to document the conditions of the remedial action components.

Observations were recorded on a field checklist form and documented with photographs, which are included as attachments to this memo. Site conditions and repairs are summarized as follows:

- **Soil Cap.** The soil cap was observed to be in good overall condition with no settlement or erosion. A single animal burrow was identified west of the James Keefe overpass (coordinates: latitude 47.65899983, longitude -117.39674965). The burrow was filled on November 27, 2018 with clean crushed rock.
- **Stormwater Facilities.** The north and west detention basins, were observed to be in good overall condition, with no vandalism or erosion. The two drywells located within the north detention basin appeared to be functional and in good conditions. The City's evaporation pond was dry, contained healthy growing vegetation, and appeared to be in good condition.
- **Shoreline Bioengineering System.** The shoreline riprap face, transition zone, and vegetative cover along the Spokane River appeared to be healthy and in good condition. No erosion, ponding, or loose boulders were observed, and mature trees growing from the bank appeared

stable and healthy. It was noted that a small abandoned transient camp was observed at the shoreline approximately 200ft west of James Keefe Bridge.

- **Monitoring Wells.** All monitoring wells were secure and observed to be in good condition; however, the above-ground monument of monitoring well MW08-100 was painted with graffiti. The graffiti was painted over with yellow matching paint on November 27, 2018.
- **Fencing.** A portion of fencing along the east site boundary, where MLK Jr Way meets North Erie Street, was permanently removed in 2018. The portion of roadway crossing the site has new fencing as a barrier on both sides, separating it from the surrounding site.

Summary and Recommendations

In general, the above described facilities were observed to be in good condition and operating in accordance with the design requirements; however site improvements by the City of Spokane for development of MLK Jr Way are ongoing and should be monitored. The remaining onsite Phase 2B work to be completed in 2019 includes installation of traffic control lights at the intersection of MLK Jr Way and North Erie Street, extending Ben Burr Trail to connect with North Erie Street, and finishing lined bio swales west of North Erie Street with landscaping.

The presence of a small, abandoned, transient camp along a portion of the site riverbank, west of the James Keefe Bridge will be also monitored to assess whether impacts result from increased foot traffic occur.

References

Ecology. 2001. Final Cleanup Action Plan. Hamilton Street Bridge Site, Spokane, Washington. Washington State Department of Ecology. August 10.

LAI. 2004a. Plans and Specifications for Hamilton Street Bridge Site Cleanup Action, Spokane, Washington. January 8.

LAI. 2004b. Operations and Maintenance Plan, Hamilton Street Bridge Site, Spokane, Washington. January 8.

LAI. 2005. Cleanup Action Completion Report, Hamilton Street Bridge Site, Spokane, Washington.

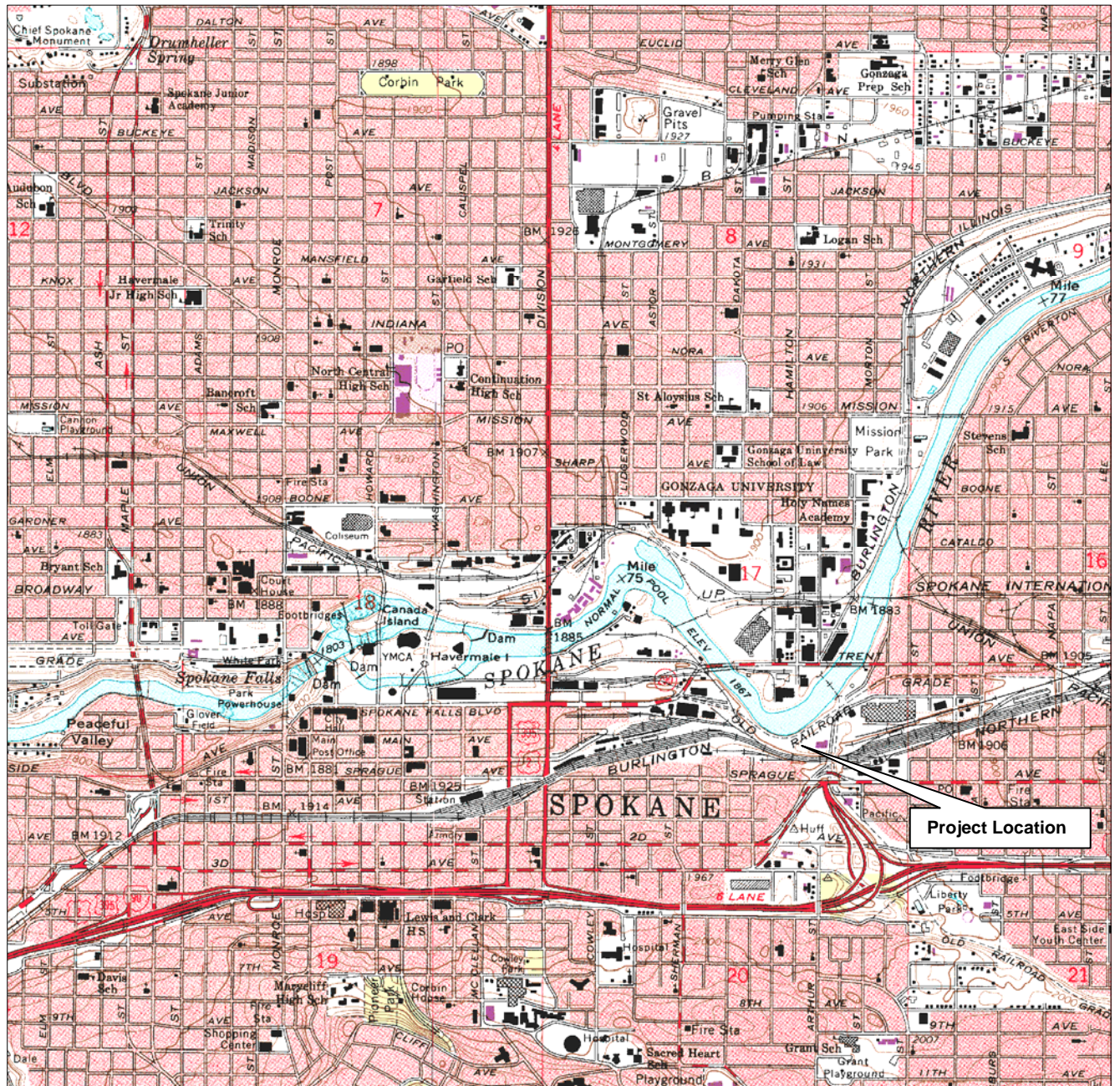
Attachments:

Figure 1. Site Location Map

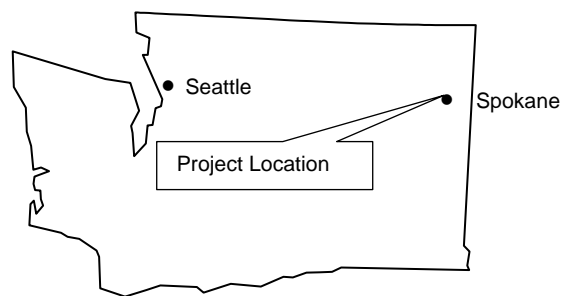
Figure 2. Site Map

2018 Inspection Log

Site Inspection Photographs



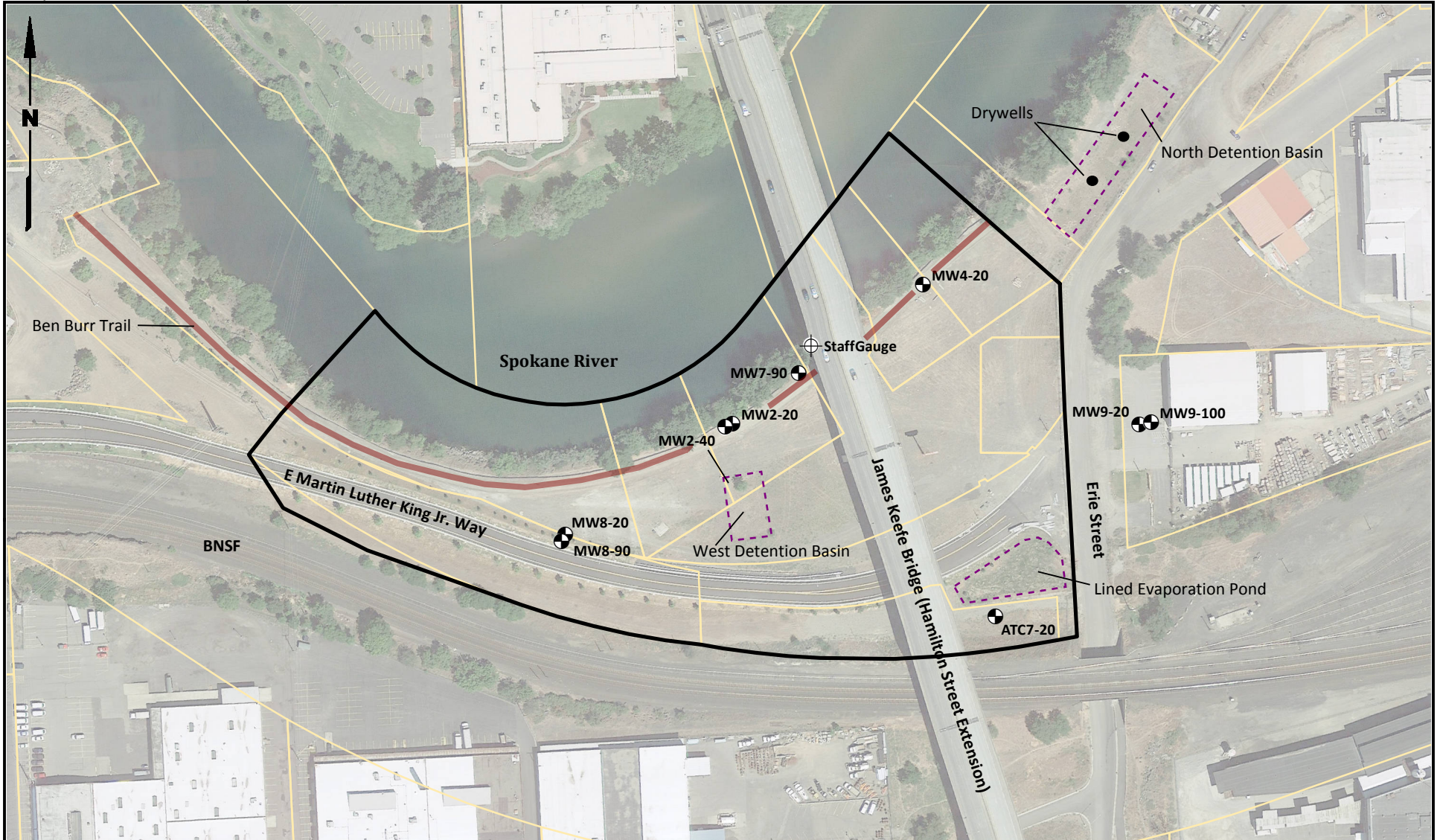
Source: USGS Spokane NW, WA Quad, 1974; PR 1986. Scale 1:24,000



Hamilton Street Bridge Site
Spokane, Washington

Site Location Map

Figure
1



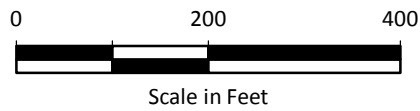
Legend

-  Current Monitoring Well
-  Staff Gauge
-  Hamilton Street Bridge Site
-  Tax Parcels

Note

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

Source: Google Earth Pro, July 2018; Spokane County GIS



| | | |
|--|-----------------|--------------------|
| Hamilton Street Bridge Site Spokane, Washington | Site Map | Figure 2 |
|--|-----------------|--------------------|

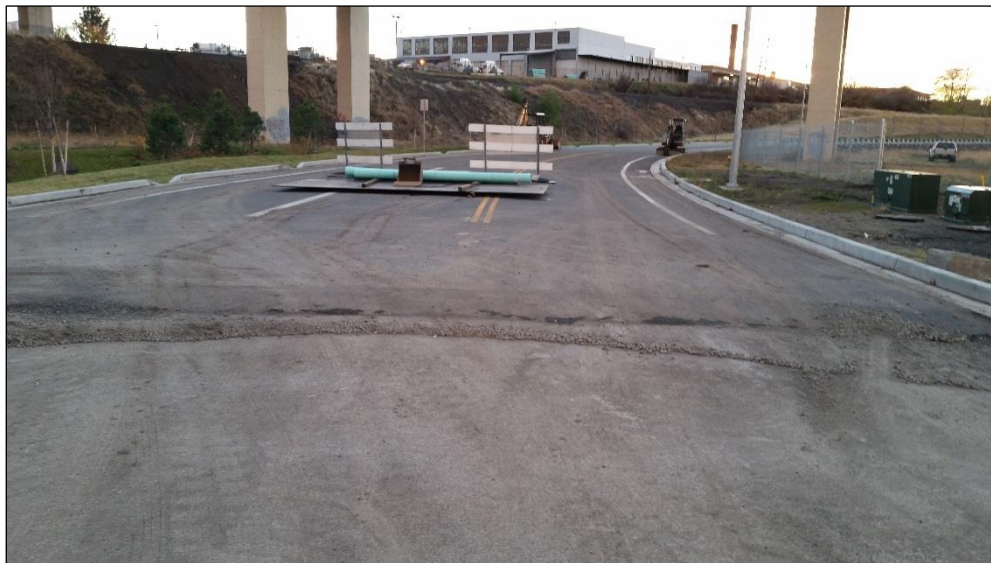
| ANNUAL INSPECTION LOG | | | | |
|--|-----|----------------------------|---|------------------------|
| Project: Avista/BNSF Hamilton Street Bridge Site North Erie Street at MLK Jr Way | | | Project Number: 0236042 | |
| | | | Date: 11-2-18 | |
| Staff Participating: R. Reich | | Temperature: low 50s F | | Arrival: 11:00 |
| Prepared by: R. Reich | | Weather Conditions: breezy | | Departure: 17:38 |
| SITE COMPONENT | Yes | No | Comments/Conditions | Recommended Action |
| Soil Cap | | | | |
| Excavations | X | | City of Spokane MLK Jr Way construction at Erie Street | |
| Settlement | | X | | |
| Soil/Gravel Erosion | | X | | |
| Poor Drainage/Puddles | | X | | |
| Animal Burrows | X | | At 47.659000 LAT -117.396750 LON | (backfilling required) |
| Refuse | | | Abandoned homeless camp at Riverbank ~200' west of bridge | |
| Stormwater Facilities | | | | |
| Vandalism | | X | | |
| Ponding/Erosion | | X | | |
| Detention Basin | | | North and west basins in good condition Southeast basin is gone | |
| Drywell Structures | | | good condition no garbage | |
| Bioengineering System | | | | |
| Riprap/Transition Zone | | | Riprap zone is stable | |
| Slope Stability | | | Slope is stable healthy trees | |
| Vegetation Stress | | X | | |

ANNUAL INSPECTION LOG
(Continued)

| SITE COMPONENT | Yes | No | Comments/Conditions | Recommended Action |
|---------------------------|-------------------------------------|-------------------------------------|---|-----------------------------|
| Fence | | | | |
| Damage | | | fence has temp openings for construction at N Eric Street | |
| Monitoring Wells | | | | |
| Secure | <input checked="" type="checkbox"/> | | | |
| Vandalism | | <input checked="" type="checkbox"/> | well MW8-100 has graffiti | color out with yellow paint |
| Casing/Monument Decay | | <input checked="" type="checkbox"/> | | |
| Settling/Subsidence | | <input checked="" type="checkbox"/> | | |
| Notes: | | | | |
| Signed: <i>R. Rybicki</i> | | Date: 11-2-13 | | |



1. View of new MLK Jr Way on Hamilton Street Bridge Site (looking east from west site boundary). New Ben Burr Trail is to the left.



2. View of unfinished MLK Jr Way on Hamilton Street Bridge Site (looking west from east site boundary at North Erie Street).



3. View of City of Spokane improvements, at east Site boundary, where MLK Jr Way intersects North Erie Street (looking south).



4. View of City of Spokane stormwater evaporation pond on southeast corner of Site (looking west from North Erie Street).



5. View of Ben Burr Trail and Spokane River shoreline at north Site boundary (looking west from northeast corner of site).



6. View of shoreline riprap and vegetation west of James Keefe Bridge (looking west from west side of James Keefe Bridge).