Completion Summary for City of Portland Outfall Basin 48

1 Summary

The City of Portland (City) has been addressing source control concerns related to the City conveyance systems for more than four decades, and several City programs have evolved to meet changing regulatory requirements and watershed health objectives. Following the 2000 listing of Portland Harbor on the National Priorities List, the City initiated a new partnership with the Oregon Department of Environmental Quality (DEQ) Cleanup Program to identify specific sources of contaminants to City stormwater conveyance systems in the harbor that were not being adequately controlled. This report summarizes the results of this collaborative effort in Outfall Basin 48.

This Completion Summary includes a weight-of-evidence evaluation to demonstrate that source identification is complete and that there are no current (or anticipated future) major sources of contaminants to the Willamette River via the Basin 48 conveyance system.

Basin 48 is located on the east side of the river in the St. Johns area. The basin is relatively small and consists almost entirely of paved streets in a residential neighborhood above the river bluff. The majority of stormwater flow from the basin is conveyed through a treatment pond and swale that were constructed in 1995. The outfall discharges at approximately River Mile (RM) 7.2 into a small embayment located adjacent to the McCormick & Baxter and Triangle Park environmental cleanup sites.

No known or suspected contaminant sources to the Basin 48 stormwater conveyance system have been identified. Evaluation of inriver sediment data collected in 2002 indicated elevated metals concentrations in sediment near the outfall; however, the adjacent McCormick & Baxter and Triangle Park sites were identified as likely sources of the contamination. The City collected and analyzed inline solids and stormwater from the basin and confirmed that additional source tracing was not warranted. The City concludes that major contaminant sources are not present and that ongoing programmatic source control measures (SCM) in the basin are sufficient for ensuring that discharges from Outfall 48 are protective of the river. Therefore, the City has met the remedial investigation (RI)/SCM objectives for Basin 48.

2 Introduction

This Completion Summary presents a weight-of-evidence evaluation of whether further source investigation is needed in Basin 48, and the rationale for concluding that current and future discharges from Basin 48 are not likely to be a significant source of contaminants to river sediment. The purpose of this report is to demonstrate that, for Basin 48, the City has met the joint RI/SCM objectives of the August 13, 2003, intergovernmental agreement (IGA) between the City and DEQ.

This report is included in Appendix A of the *Municipal Stormwater Source Control Report for Portland Harbor* (Municipal Report), which provides additional background and detail regarding

the City's harborwide source control efforts, including regulatory and non-regulatory programs to address current and future sources and to minimize recontamination potential.

3 Outfall and Basin Setting

3.1 Basin Location and Configuration

Outfall 48 discharges to the east side of the Willamette River near RM 7.2, in the St. Johns area. The outfall basin drains approximately 7.5 acres. Figure 1 shows the location of the outfall and drainage basin boundary and provides an overview of the associated stormwater conveyance system. As shown in Figure 1, stormwater discharge from most of the basin is routed through an engineered treatment pond and swale before discharging to the river. The City constructed this stormwater facility in 1997 as part of its Combined Sewer Overflow (CSO) Abatement Program. The system is designed to treat storm flows that fall within the 20-year storm design standard.

Additional detail on the Outfall 48 stormwater conveyance system and associated drainage basin is included in the *Programmatic Source Control Remedial Investigation Work Plan for the City of Portland Outfalls Project* (CH2M HILL, 2004) and the *Outfall Basin 48 Inline Solids Sampling, Technical Memorandum No. OF48-1* (BES, 2008).

3.2 Land Use and Potential Upland Sources

Land use in the majority of the basin is residential, consisting of the N. Willamette Boulevard right-of-way and other nearby residential streets located above the river bluff. The remaining area of the basin that includes the Basin 48 stormwater treatment facility is zoned open space. The City constructed the stormwater facility in 1995 as part of its CSO Abatement Program. Construction of the treatment facility, in an area formerly used for industrial purposes, included soil removal, installation of a geomembrane, and placement of new soil to support wetland vegetation. This precluded any legacy contamination from affecting stormwater quality in the facility.

There are no industrial facilities located within the basin and no potential pollutant sources have been identified in Basin 48. No DEQ Cleanup Program sites, as identified in DEQ's Environmental Cleanup Site Information (ECSI) database, are located in the basin, although two ECSI sites are located in the vicinity of the Basin 48 stormwater treatment facility. Remediation has been completed or is underway at both of these sites. Remediation of the McCormick & Baxter site (ECSI #74) included soil removal and capping and was completed in 2005. Remediation and redevelopment of the Triangle Park site (ECSI #277) is underway under U.S. Environmental Protection Agency (EPA) oversight. Both of these shoreline sites have associated groundwater contaminant plumes, and review of groundwater data from these sites indicates the Basin 48 stormwater system may intersect one or more of the plumes (GSI, 2006). Groundwater contamination at both sites is being evaluated by DEQ and/or EPA as part of the site remedial investigations.

3.3 Outfall Setting

Outfall 48 discharges to an area of potential concern (AOPC 15) identified by EPA based on elevated concentrations of metals and other contaminants in river sediment (EPA, 2010). AOPC 15 is a relatively small area consisting of a shallow water embayment adjacent to the McCormick & Baxter Superfund Site. Significant amounts of timber, debris, and sand accumulation have been observed on the riverbank in the immediate vicinity of Outfall 48, confirming that the embayment is subject to back eddies and potential redeposition of sediment from both upstream and downstream of the outfall (CH2M HILL, 2004). Remediation of the McCormick & Baxter site included construction of an inwater cap in the vicinity of Outfall 48.

4 Basin Screening and Source Investigations

The City identified Basin 48 as a Priority 3 for source tracing, based on elevated concentrations of metals in the surface sediment samples collected by the City near Outfall 48 in 2002 (CH2M HILL, 2004). Priority 3 designations were assigned to basins where significant concentrations of contaminants have been detected in sediment near the outfall and the contaminants likely are attributable to known upland sources that currently are being investigated under DEQ or EPA oversight. Although no potential sources were identified within Basin 48, the two properties adjacent to the outfall, the McCormick & Baxter Superfund Site and the Triangle Park DEQ Cleanup Program site, were identified as likely sources of the metals detected in the inriver sediment based on known site contaminants of interest (CH2M HILL, 2004).

To confirm that significant sources of metals or other contaminants were not present in the basin, the City collected and analyzed inline solids in 2006 (BES, 2008). Sufficient solids were not present for sampling in the system downstream of the Basin 48 stormwater treatment facility, so the City collected a sample from the treatment facility bypass line to represent solids contributions from the majority of the drainage basin. Analytical results did not indicate major sources of metals or other contaminants (BES, 2008).

Subsequently, as part of the City's stormwater screening evaluation, the City collected stormwater samples in 2007 from the downstream end of the basin (i.e., representing all collective discharges to the system). Based on the evaluation of these data and using a conservative screening approach, no analytes were identified as potentially warranting further source tracing in Basin 48 (BES, 2010).

Table 1 lists investigations and evaluations completed by the City in the Basin 48 conveyance system.

Table 1. City Investigations in the Basin 48 Stormwater Conveyance System

Data Collection Period	Purpose	Documentation
2000	Compile basin background information to identify potential sources.	Preliminary Evaluation of City Outfalls (Eastshore) (BES, 2000)
2002	Evaluate inriver sediment data near City outfalls to prioritize basins for source tracing.	Programmatic Source Control Remedial Investigation Work Plan (CH2M HILL, 2004)
2005	Evaluate existing data on groundwater plumes and identify the potential for City conveyance systems (including Basin 48) to act as preferential pathways.	Relationships Between Upland Shallow Groundwater Plumes and the City Stormwater and Combined Conveyance System Within the Portland Harbor (GSI, 2006)
2006	Collect and analyze inline solids within the Basin 48 conveyance system to evaluate whether the basin contains sources of contaminants detected in inriver sediment near the outfall.	City Outfall Basin 48 Inline Solids Sampling Technical Memorandum (BES, 2008)
2007	Evaluate stormwater data from City outfalls to identify additional source tracing needs.	Stormwater Evaluation Report, City of Portland Outfall Project (BES, 2010)

The City's investigation and data evaluation did not identify any current major sources of contaminants in Basin 48.

5 Completion of Source Identification

The lines of evidence evaluated to confirm that source tracing is complete include (1) results of source investigation activities conducted in the basin and (2) basin land use. Findings from this evaluation are summarized below.

- *Source Investigation Results*. Results of the inline solids investigation and stormwater evaluation did not indicate the presence of major contaminant sources in the basin (BES, 2008 and 2010).
- *Land Use:* The basin consists primarily of residential streets (see Figure 1). Although a small portion of the basin is on industrial-zoned land, the basin does not include industrial land uses. Land use in this area is the Basin 48 stormwater treatment facility. Non-industrial activities are not a known or suspected major source of contaminants to the City stormwater conveyance system.

Based on these lines of evidence, the City concludes that the Basin 48 source evaluation is complete and no additional source tracing is warranted.

6 Basin Source Controls

The primary source control in the basin is the stormwater treatment facility constructed in 1995, which treats basin stormwater and reduces suspended solids loading to Outfall 48. The City also has a National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) stormwater permit that covers basin drainage areas.

Ongoing municipal programs (e.g., street sweeping) likely provide additional source control benefits in the basin and will help to address minor sources for which specific control measures have not been required. City programs that control current and future contaminant discharges to the conveyance system are described in the Municipal Report.

7 Conclusion

Based on the information summarized above, there are no major sources of contaminants in Basin 48 and future discharges from Outfall 48 are unlikely to represent a significant source of contaminants to the river. The City concludes that it has met the RI/SCM objectives of the IGA and requests a source control decision from DEQ for Basin 48.

8 References

BES. 2000. Preliminary Evaluation of City Outfalls. Portland Harbor Study Area. Notebook 1: Eastshore Stormwater and CSO Outfalls. City of Portland, Bureau of Environmental Services. December 2000.

BES. 2008. City Outfall Basin 48 Inline Solids Sampling. Technical Memorandum No. OF48-1. To K. Tarnow (DEQ) from L. Scheffler and D. Sanders (BES). January 17, 2008.

BES. 2010. Stormwater Evaluation Report. City of Portland, Bureau of Environmental Services. February 2010.

CH2M HILL. 2004. Programmatic Source Control Remedial Investigation Work Plan for the City of Portland Outfalls Project. Prepared for the City of Portland, Bureau of Environmental Services, March 19, 2004.

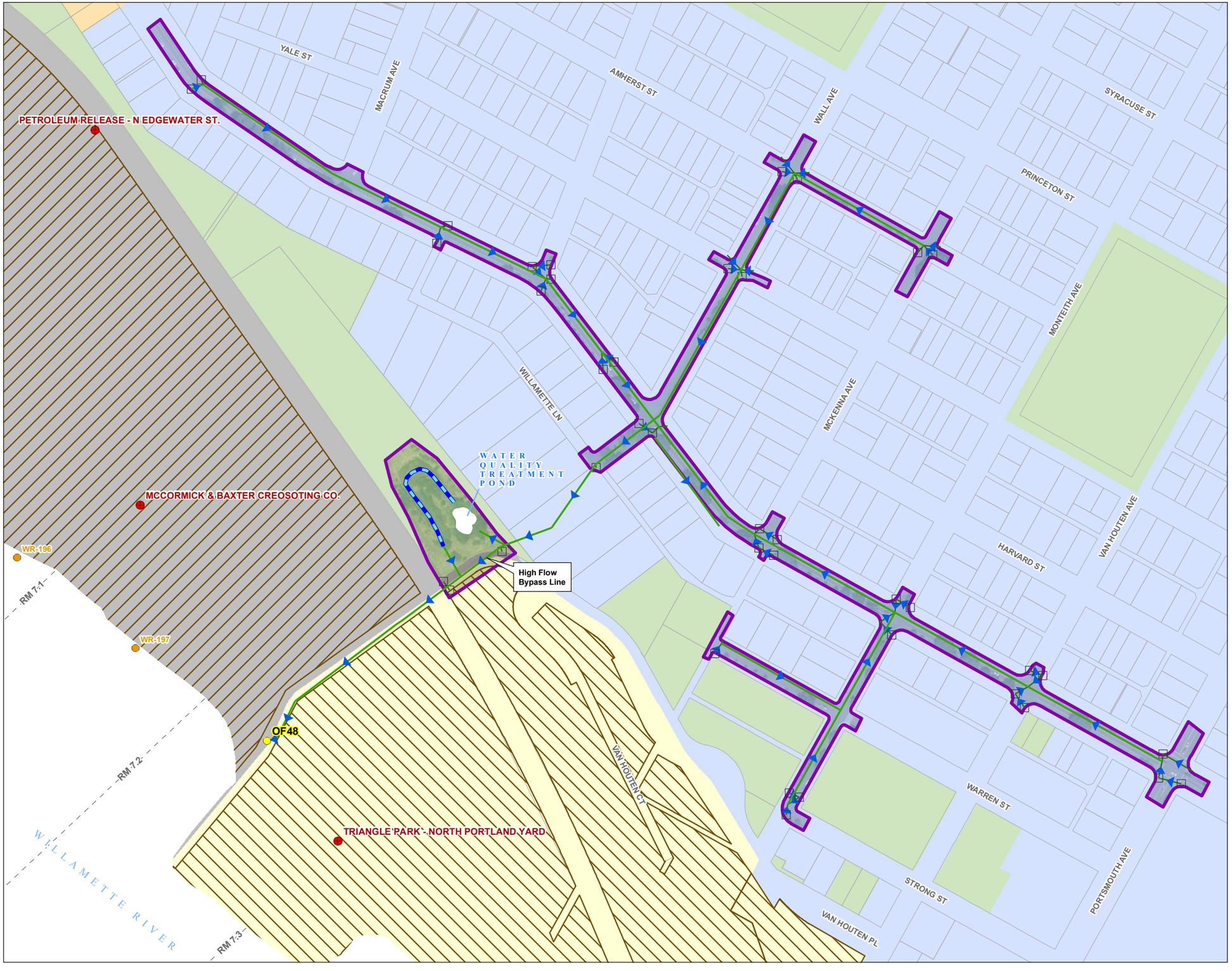
EPA. 2010. Re: Portland Harbor Superfund Site; Administrative Order on Consent for Remedial Investigation and Feasibility Study; Docket No. CERCLA-10-2001-0240. Portland Harbor Feasibility Study Source Tables. Letter from EPA to Mr. Bob Wyatt, Chairman, Lower Willamette Group. November 23, 2010.

GSI. 2006. Relationships Between Upland Shallow Groundwater Plumes and the City Stormwater and Combined Conveyance System with the Portland Harbor. Technical Memorandum prepared by Groundwater Solutions, Inc., for the City of Portland Bureau of Environmental Services. March 16, 2006.

List of Figures

FIGURE 1

Basin 48
Overview and Conveyance System Source Controls



- Basin 48
- DEQ ECSI Site

Conveyance System

- Storm Line
- Water Quality Swale
- Catch Basin
- City Outfall
- Non-City Outfall

Land Use/Zoning

- Heavy Industrial
- General Employment
- Residential
- Parks and Open Space

DEQ Stormwater SCE

- SCEs implemented or pending
- SCE not needed or low priority

All Other Data

- River Mile (RM)
- Tax Lot
- Discharges to City Outfall
- Portland Harbor Hydroboundary

N

0 140 280 420

Feet

MAP NOTES:
Date: December 31, 2013
Data Sources: BES, METRO

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