

# **Completion Summary for City of Portland Outfall Basin M-3**

## **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 M-3.

This Completion Summary includes a weight-of-evidence evaluation to demonstrate that source identification is complete and a summary of source controls (implemented or planned) that will control future contaminant discharges to the Willamette River.

Basin M-3 is located on the east side of the Willamette River in the Mocks Bottom area, at the southeastern corner of Swan Island Lagoon. This area was undeveloped until World War II, when federal housing for shipyard workers was constructed. Industrial development in this area began in the early 1950s. An evaluation of inriver sediment in the vicinity of Outfall M-3 indicated the presence of sediment contamination in the vicinity of the outfall, prompting the City to evaluate whether there may be major sources in the basin. The City conducted source tracing in the basin and identified potential contaminant sources. Work included evaluation of contaminant discharges via the dry-weather flow pathway. In 2007, the City collected and analyzed stormwater data from the basin to verify that no further source tracing was needed.

Two DEQ Cleanup Program sites and small portions of two other Cleanup Program sites are located in the basin. Stormwater source control evaluations (SCE) are pending at two of these sites, and one is expected to include an evaluation of the preferential groundwater pathway to the basin. DEQ has determined that SCEs are not needed or are low priorities at the remaining two sites. The City concludes that no further City source investigation is warranted in the basin and that implementation of source control measures (SCM) at identified sources, together with current and future source control programs in the basin, are expected to provide necessary source control for Outfall M-3 discharges. Therefore, the City has met the remedial investigation (RI)/SCM objectives for Basin M-3.

## **2 Introduction**

This Completion Summary presents a weight-of-evidence evaluation of whether further source investigation is needed in Basin M-3, and the rationale for concluding that current and future discharges from the basin are not likely to be significant sources of contaminants to river sediment. The purpose of this report is to demonstrate that for Basin M-3 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 M-3 discharges to the southeastern corner of Swan Island Lagoon on the east side of the Willamette River at approximately River Mile 9.1. The drainage area for the Basin M-3 conveyance system is approximately 104 acres. Figure 1 shows the location of the outfall and drainage basin boundary and provides an overview of the associated stormwater conveyance system.

Additional detail on the Outfall M-3 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).

### **3.2 Land Use and Potential Upland Sources**

Basin M-3 is located in the Mocks Bottom industrial area. Land use in the basin is predominantly light industrial with some non-industrial uses (e.g., bank, restaurants, sales, etc.). Zoning includes an area zoned as general employment, which allows for integration of commercial and industrial activities (see Figure 1).<sup>1</sup> Tax lots in the Mocks Bottom area tend to be large, paved, and dominated by buildings, parking, and loading areas. Industrial activities include transportation-related operations (e.g., warehousing and trucking), a dairy plant, and manufacturing facilities. Most industrial operations occur indoors, with outdoor areas mostly used for truck and vehicle parking and movement.

Sites identified as potential sources in the basin include two sites, and small portions of two other sites, that are in the DEQ Cleanup Program, as listed in DEQ's Environmental Cleanup Site Information (ECSI) database. Table 1 lists these sites and indicates the associated contaminants of interest (COI) and the status of the SCEs. The Freightliner site was one of the earlier facilities to develop in the basin, and buildings and pavement cover the majority of the site. Historical metal scrapping activities took place at the Fred Meyer site, in an area that has since been capped. The portion of the Union Pacific Railroad (UPRR) site that is within the basin is currently leased to Swan Island Dairy for truck parking, and the portion of the End of Swan Island Lagoon site in the basin is used for public boat ramp parking.

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<sup>1</sup> General employment is a Portland zoning category that allows a range of employment opportunities but emphasizes industrial and industrial-support uses. The zones can allow for the transition to a less industrial overall nature.

**Table 1. DEQ Cleanup Program Sites in Basin M-3**

DEQ Cleanup Program Site	Site COIs <sup>(1)</sup>	Site Pathway Evaluations	
		Stormwater Pathway <sup>(2)</sup>	Preferential Groundwater Pathway <sup>(3)</sup>
Sites Within Basin			
Fred Meyer – Swan Island (ECSI #44)	PCBs <sup>(5)</sup>	Need for Source Control Evaluation to be Determined / Low Priority	Not Shown
Freightliner Parts Manufacturing Plant (ECSI #115)	Metals	Source Control Evaluation In Progress	Source Control Evaluation in Progress
Portions of Sites Within Basin			
End of Swan Island Lagoon (ECSI #3901)	Not listed <sup>(4)</sup>	Source Control Evaluation Not Needed	Source Control Evaluation Completed - Source Control Determination Pending
UPRR Albina Yard (ECSI #178)	PAHs, TPH, metals	Source Control Evaluation In Progress	Source Control Evaluation Completed - Source Control Determination Pending

Notes:

PAHs = polycyclic aromatic hydrocarbons; TPH = total petroleum hydrocarbons; COIs = contaminants of interest; PCBs = polychlorinated biphenyls; ECSI = Environmental Cleanup Site Information; DEQ = Oregon Department of Environmental Quality

- (1) Unless otherwise noted, site COIs are those identified in Appendix Q (Source Control Inventory Tables) of the Portland Harbor RI/FS Draft Feasibility Study (FS) (Anchor et al., 2012).
- (2) Source: DEQ Milestone Report, Figure 1b, “Status of Stormwater Source Control Evaluations, January 2013” (DEQ, 2013).
- (3) Source: DEQ Milestone Report, Figure 3, “Groundwater Source Control Evaluation Status, January 2013” (DEQ, 2013).
- (4) Only a small portion of the site is delineated within Basin M-3 and consists of a boat-ramp parking lot. The site is not listed in Appendix Q of the draft FS, Table 4.2-2 of the Draft Final RI, and site COIs are not listed in the ECSI database (DEQ, 2012).
- (5) Site is not listed in Appendix Q of the draft FS or Table 4.2-2 of the Portland Harbor RI/FS Draft Final Remedial Investigation Report (Integral et al., 2011). ECSI database (DEQ, 1992) lists PCBs in soil as site contaminants.

Industrial sites covered, or historically covered, by National Pollutant Discharge Elimination System (NPDES) stormwater regulations also were considered as potential sources of pollutants to the City conveyance system. Table 2 lists sites in the basin that currently hold, or historically had, NPDES permits to discharge to the Basin M-3 conveyance system. Figure 1 shows sites with current NPDES permits. Note that the City operates under an NPDES Municipal Separate Storm Sewer System (MS4) stormwater permit that also covers basin drainage areas.

**Table 2. Current<sup>(1)</sup> and Historical NPDES Permit Coverage in Basin M-3**

Address	Company	Permit Type	Time Period
4950 N Basin	Swan Island Dairy	Stormwater (1200-F)	1996
		Stormwater (1200-Z)	1998 – Present
5130 N Basin	Rose City Moving & Storage Co.	Stormwater (1200-Z)	1999 – 2012
5400 N Basin	Freightliner Trucks Manufacturing Plant II	Cooling water (100J)	1992 – 2008
	<b>Daimler Truck North America Corp 10</b>	Cooling water (100J)	2008 – Present
	Freightliner Trucks Manufacturing Plant II	Stormwater (1200-L)	1992 – 1996
		Stormwater (1200-Z)	1997 – 2008
	<b>Daimler Trucks North America Corp 10</b>	Stormwater (1200-Z)	2008 – Present
5550 N Basin	Nationsway Transport	Stormwater (1200-T)	1995 – 1996
		Stormwater (1200-Z)	1997 – 1999
	United Parcel Service	Stormwater (1200-Z)	2002 – 2008

Notes:

NPDES = National Pollutant Discharge Elimination System

(1) Current permits are indicated in bold.

### 3.3 Outfall Setting

Outfall M-3 discharges to an area of potential concern (AOPC 17b-Slip) identified by the U.S. Environmental Protection Agency (EPA) based on elevated concentrations of PCBs, pesticides, phthalates, PAHs, metals, and other contaminants in river sediment (EPA, 2010). In addition to Outfall M-3, four other City outfalls (Outfalls M-1, M-2, S-1, and S-2) and more than 50 non-City outfalls discharge to AOPC 17b-Slip.

Swan Island Lagoon is a sheltered off-channel area that generally is protected from natural disturbances, but anthropogenic disturbances (e.g. propwash from the public boat ramp adjacent to the outfall) may resuspend material into the water column during low water conditions. The pattern of sediment concentrations adjacent to the outfall may be influenced by adjacent sources (e.g., other non-municipal outfalls) and resuspension.

## 4 Basin Screening and Source Investigations

The City identified Basin M-3 as a Priority 1 for source tracing (CH2M HILL, 2004). Priority 1 basins are considered the highest priority for source tracing. The subsequent *Phase I Report for City of Portland Priority 1 Basins* identified PAHs and phthalates for source tracing based on further evaluation of the inriver sediment data (GSI, 2006a). The *Phase I Report* states that the spatial pattern of inriver sediment data suggests that the basin likely is not the source of PAHs and phthalates, but recommends source tracing to confirm there are no significant sources in the basin. In 2005, the City attempted to collect inline solids samples from a variety of locations in the basin for source tracing purposes. Inline samples were not collected because of the standing water in the lower portion of the basin (i.e., river backup) and the lack of solids

material in the upper portion of the basin. A dry-weather flow investigation was conducted at that time to identify potential metals sources to the basin via this pathway (BES, 2006).

In 2007, as part of the City's stormwater screening evaluation (BES, 2010), the City collected stormwater samples from the most accessible basin location near the downstream end of the basin; this location excludes discharges from one property (United Parcel Service) and a small portion of N. Basin Avenue drainage. 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 M-3 (BES, 2010).

Table 3 lists investigations and evaluations completed by the City in the Basin M-3 conveyance system.

**Table 3. Investigations in the Basin M-3 Stormwater Conveyance System**

<b>Data Collection Period</b>	<b>Party</b>	<b>Purpose</b>	<b>Documentation</b>
2000	City	Compile basin background information to identify potential sources.	Preliminary Evaluation of City Outfalls (Eastshore) (BES, 2000)
2002	City	Evaluate inriver sediment data near City outfalls to prioritize basins for source tracing.	Programmatic Source Control Remedial Investigation Work Plan (CH2M HILL, 2004)
2005	City	Evaluate existing data on groundwater plumes and identify the potential for City conveyance systems (including Basin 18) to act as preferential pathways.	Relationships Between Upland Shallow Groundwater Plumes and the City Stormwater and Combined Conveyance System with the Portland Harbor (GSI, 2006b)
2005	City	Investigate dry-weather flow entering the City's stormwater conveyance system.	City Outfall Basin M-3 Dry Weather Flow Sampling TM (BES, 2006)
2006	City	Compile existing information to focus source tracing activities based on evaluation of observed contaminants and identified sources.	Phase I Report for City of Portland Priority 1 Basins (GSI, 2006a)
2007	City	Evaluate stormwater data from City outfalls to identify additional source tracing needs.	Stormwater Evaluation Report, City of Portland Outfall Project (BES, 2010)

## 5 Completion of Source Identification

The lines of evidence evaluated to confirm that source tracing objectives have been met with regard to Basin M-3 include (1) results of source investigation activities conducted in the basin (and upland site information) and (2) land use at remaining upland areas not undergoing investigation. Findings from this evaluation are summarized below.

- *Source Investigation Results:* A City source investigation identified metals in dry-weather flow in the basin (BES, 2006). One ECSI site (Freightliner Parts Manufacturing Plant) is investigating the preferential groundwater pathway to Basin M-3 under DEQ oversight. Other contaminants identified for source tracing in the basin (i.e., polycyclic aromatic hydrocarbons and phthalates) also have been detected at this site during the site stormwater pathway evaluation (Bridgewater, 2011). The City's stormwater screening evaluation (BES, 2010) of data from the basin did not identify any analytes as potentially warranting further source tracing in Basin M-3.
- *Upland Investigation Coverage and Land Use:* Land use in Basin M-3 primarily consists of light industrial activities including transportation-related operations (e.g., warehousing and trucking), a dairy plant, and manufacturing facilities (see Figure 1). Figure 2 displays the spatial extent of upland site investigation and other programmatic stormwater source controls (see key to figures provided at beginning of this Appendix). As shown in Figure 2, one site and a small portion of another site in the basin are investigating the stormwater pathway and implementing SCMs under DEQ Cleanup Program authority. Two other sites in the basin have been designated by DEQ as not needing an SCE or as a low priority for completing an SCE. Approximately one third of the basin drainage area is covered by the DEQ Cleanup Program and/or NPDES industrial stormwater regulations. Land use at sites not covered by DEQ Cleanup or Water Quality Programs mostly consists of parking areas and large warehouse operations with minimal industrial exposure to stormwater. Current and future industrial activities that are exposed to stormwater at these sites will be addressed by the DEQ Water Quality NPDES Program; 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 M-3 source investigation is complete and there are no major contaminant sources in the basin.

## 6 Basin Source Controls

Source control in Basin M-3 includes SCMs completed (or planned) at contaminated sites under DEQ Cleanup Program agreements and ongoing City and DEQ programs that are described in the Municipal Report. Source controls implemented in Basin M-3 are summarized in this section and are displayed in Figure 2.

One type of programmatic source control is the elimination of stormwater exposures to industrial activities. Table 4 lists sites that hold, or historically held, an NPDES No Exposure Certification.

**Table 4. Sites with No Exposure Certification (NEC) in Basin M-3<sup>(1)</sup>**

Address	Company	NEC Time Period
<b>3004 N Wygant</b>	<b>Infiltrator Systems Inc</b>	2010 – Present
<b>5130 N Basin</b>	<b>Rose City Moving &amp; Storage Co.</b>	2012 – Present
5000 N Basin	Carpet Services, Inc.	2000 – 2010
<b>5550 N Basin</b>	<b>UPS Portland South</b>	2008 – Present
<b>4825 N Basin</b>	<b>Metro Paint Processing Facility</b>	2013 – Present

Notes:

(1) Current NECs are indicated in bold.

Table 5 summarizes additional site-specific, programmatic, and conveyance system source controls for Basin M-3. A small portion of the UPRR site listed in Table 5 discharges to the basin. This portion of the site is used for truck parking and was not a focus of the UPRR remedial investigation. The City does not anticipate that specific SCMs will be implemented in this area; an SCE is underway at the site to identify areas where additional controls are needed.

**Table 5. Basin M-3 Source Controls**

Site /Area	Source Controls	Implementation Timeframe
<b>Source Control Measures (SCM) at DEQ Cleanup Program Sites<sup>(1)</sup></b>		
Fred Meyer – Swan Island (ECSI #44)	An interim impervious cap has been placed over contaminated soil at the site.	1988
Freightliner – Parts Manufacturing Plant (ECSI #115)	Cleaning portions of the onsite stormwater lines. Erosion control best management practices.	2007 Ongoing
UPRR Albina Yard (ECSI #178)	To be determined	To be determined
<b>Other (Programmatic Source Controls)<sup>(2)</sup></b>		
United Parcel Service, PDX Development	<b>Stormwater Management Manual Requirements</b>	Ongoing
Rose City Moving & Storage Co., DSU Peterbilt	<b>City Discharge Authorization<sup>(3)</sup></b>	Ongoing
See listing in Table 2	<b>NPDES 1200-Z Stormwater Permit Requirements</b>	Ongoing
See listing in Table 4	<b>NPDES No Exposure Certifications</b>	Ongoing

Notes:

ECSI = Environmental Cleanup Site Information; DEQ = Oregon Department of Environmental Quality; NPDES = National Pollutant Discharge Elimination System

(1) For upland sites, description of SCMs are based on information in DEQ Milestone Report (DEQ, 2013), DEQ source control decisions, and/or reports on file with DEQ.

(2) Programmatic source controls are described in detail in the Municipal Report.

(3) Additional site-specific stormwater pollution controls required and implemented under City Code.

Other municipal programs (e.g., periodic inspection of and technical assistance to non-NPDES sites, illicit discharge monitoring, street sweeping, etc.) 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

The City completed source tracing in Basin M-3 and no major sources of contaminants to the City conveyance system were identified. Therefore, future discharges from Outfall M-3 are unlikely to represent a significant source of contaminants to the river. However, given the sensitive nature of the lagoon, the City will continue to look for opportunities with existing and future City stormwater programs to reduce suspended solids loading from the basin 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 M-3.

## 8 References

- Anchor et al. 2012. Portland Harbor RI/FS Draft Feasibility Study. Prepared for The Lower Willamette Group by Anchor QEA, LLC, Windward Environmental, LLC, Kennedy/Jenks Consultants, and Integral Consulting, Inc. February 2012.
- 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. 2006. City Outfall Basin M-3 Dry-Weather Flow Sampling, Technical Memorandum No. OFM3-1. City of Portland Bureau of Environmental Services. June 16, 2006.
- BES. 2010. Stormwater Evaluation Report. City of Portland, Bureau of Environmental Services. February 2010.
- Bridgewater. 2011. Source Control Evaluation Report. Daimler Trucks North America LLC Facility. Prepared for Daimler Trucks North America, LLC. Prepared by Bridgewater Group in association with Maul Foster & Alongi, Inc. June 10, 2011.
- CH2M HILL. 2004. Programmatic Source Control Remedial Investigation Work Plan of the City of Portland Outfalls Project. Prepared by CH2M HILL for the City of Portland Bureau of Environmental Services. March 19, 2004.
- DEQ. 1992. DEQ Site Summary Full Report – Details for ECSI Site ID 44, Fred Meyer – Swan Island. DEQ Environmental Cleanup Site Information Database (ECSI), updated June 1992; accessed February 14, 2013. <http://www.deq.state.or.us/lq/ECSI/ecsidetail.asp?seqnbr=44>
- DEQ. 2012. DEQ Site Summary Full Report – Details for ECSI Site ID 3901, End of Swan Island Lagoon. DEQ Environmental Cleanup Site Information Database (ECSI), updated



September 2012; accessed January 18, 2013.  
<http://www.deq.state.or.us/lq/ECSI/ecsidetail.asp?seqnbr=3901>

DEQ. 2013 Milestone Report, Upland Source Control at the Portland Harbor Superfund Site, January 2013. Prepared by the Oregon Department of Environmental Quality. January 2013.

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. 2006a. Phase I Report for City of Portland Priority 1 Basins. Prepared for the City of Portland Bureau of Environmental Services by Groundwater Solutions, Inc. August 2006.

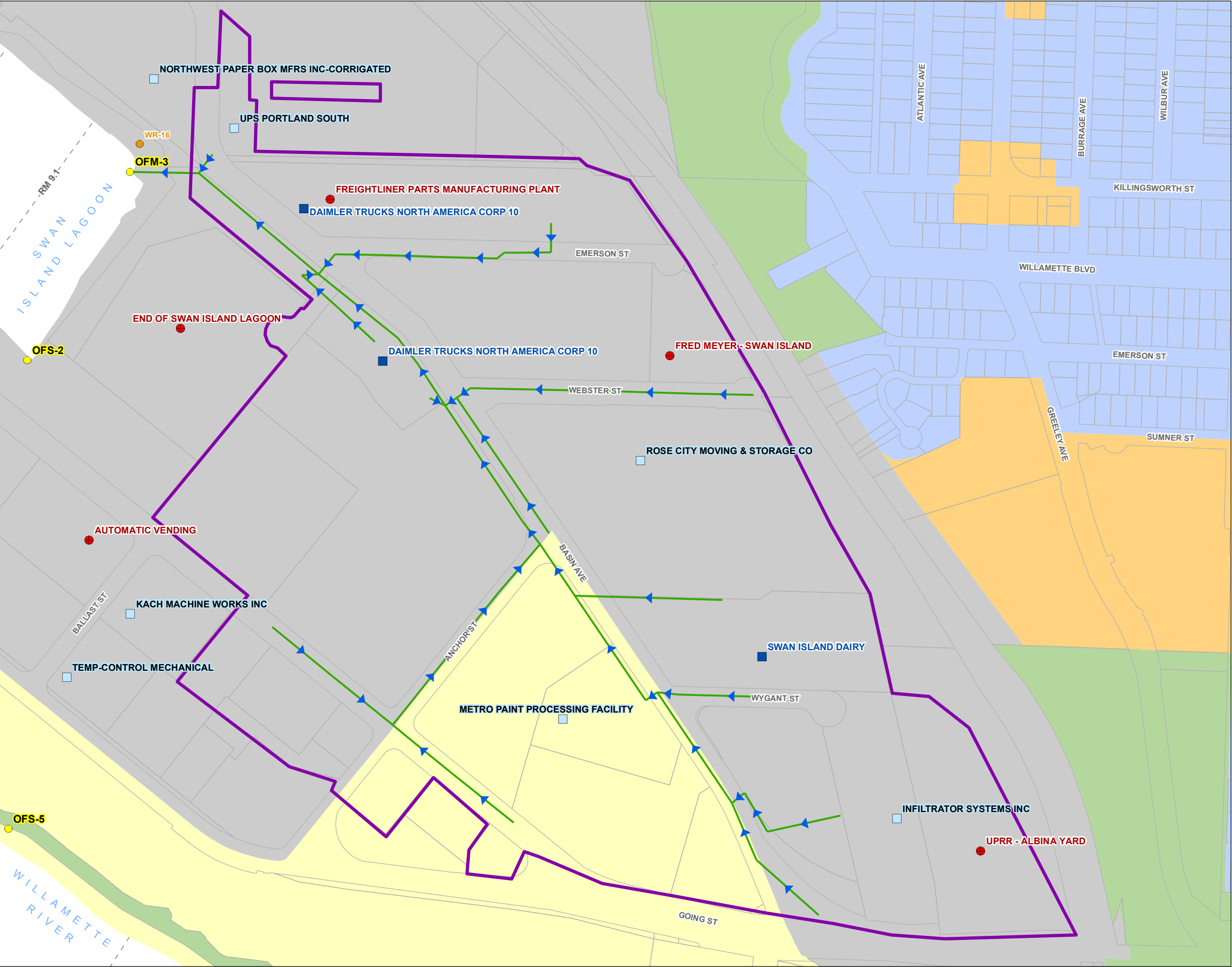
GSI. 2006b. Relationships Between Upland Shallow Groundwater Plumes and the City Stormwater and Combined Conveyance System within the Portland Harbor. Technical Memorandum prepared by Groundwater Solutions, Inc., for the City of Portland Bureau of Environmental Services. March 16, 2006.

Integral et al. 2011. Portland Harbor RI/FS, Draft Final Remedial Investigation Report. Prepared for the LWG. Prepared by Integral Consulting Inc., Windward Environmental LLC, Kennedy/Jenks Consultants, and Anchor QEA, LLC. August 29, 2011.

## List of Figures

Figure 1: Basin M-3 Overview

Figure 2: Basin M-3 Upland Site Source Controls



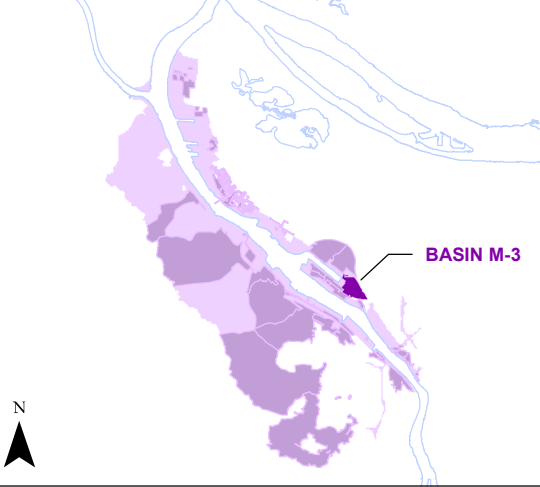
**FIGURE 1**  
**Basin M-3**  
**Overview**

- Basin M-3
- DEQ ECSI Site
- NPDES Stormwater Permit
- NPDES No Exposure Certification
- Conveyance System**
  - Storm Line
  - City Outfall
  - Non-City Outfall
- Land Use/Zoning**
  - Light Industrial
  - General Employment
  - Commercial
  - Residential
  - Parks and Open Space
- All Other Data**
  - River Mile (RM)
  - Tax Lot
  - Discharges to City Outfall
  - Portland Harbor Hydroboundary



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

ENVIRONMENTAL SERVICES  
CITY OF PORTLAND  
1120 SW Fifth Avenue, Room 1000  
Portland Oregon, 97204 -1912

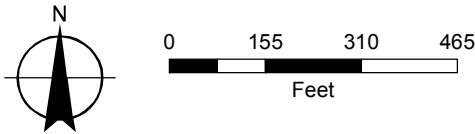






**FIGURE 2**  
**Basin M-3**  
**Upland Site Source Controls**

- Basin M-3
- Tax Lot
- DEQ Stormwater SCEs**
  - SCE implemented or pending
  - SCE not needed or low priority
- All Other Features**
  - NPDES Stormwater Discharge Permit
  - City Discharge Authorization
  - NPDES No Exposure Certification
  - >50% of Site Area Redeveloped Under City SWMM
  - Stormwater Treatment Facility
  - Site Inspection - BES Industrial Stormwater Program
  - Discharges to City Outfall
  - Portland Harbor Hydroboundary



**MAP NOTES:**  
Date: December 31, 2013  
Data Sources: BES, METRO, Aerial Photo Taken 2012

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