

**APPENDIX A - HISTORICAL
SEDIMENT INVESTIGATIONS AND
HISTORICAL SEDIMENT SAMPLING
LOCATIONS
(LWG AND OTHER STUDIES)**

FIELD AND DATA REPORT

**DOWNTOWN PORTLAND
SEDIMENT CHARACTERIZATION**

**WILLAMETTE RIVER
PORTLAND, OREGON**

JANUARY 2009

Table A-1: Historical Sediment Investigations
Downtown Portland Sediment Characterization
Field and Data Report
January 2009

Year	Sample Location Prefix	Client	Task Description	Analyte Group(s)	Method(s)
1987-1988	PGERAP88	Hart Crowser, Inc.	Portland General Electric RA Plan Station L	Aroclors	Unknown
1988-1989	CLBC8494	EPA	Columbia Basin Contaminant Data	Conventionals, Metals, Pesticides, PAHs, PCB Congeners, SVOCs	SW8080, SW8270, Unknown
1992	WBWRIR98	USGS	USGS - Bonn	Conventionals, Dioxins & Furans, Dioxin & Furan Homologs	SW8290, Unknown
1994	WRSTRM94	EPA	Characterization of Stormwater Outfalls	Aroclors, Conventionals, Metals, Pesticides, Phenols, Phthalates, PAHs, SVOCs, VOCs	E160.3M, SW6010A, SW7060, SW7471, SW7740, SW7841, SW8080, SW8240A, SW8270
1995	WLCRFE95	City of Portland	Rose Festival Fleet Moorage	Aroclors, Butyltins, Conventionals, Grainsize, Metals, Pesticides, PAHs	D422, D4129, E160.3M, E200.8, KRONE, SW6010A, SW7471, SW8080, SW8310M
1995-2003	WLCZDI00	ZRZ Realty Company	Zidell Waterfront Property RI	Aroclors, Butyltins, Conventionals, Grainsize, Metals, Petroleum, PAHs, SVOCs	KRONE, NWTPH-Dx, NWTPH-Gx, SW8270, Unknown
1997-1998	WLCWQH99	USGS	Organochlorine and PAH by SPMD	Dioxins & Furans, Dioxin & Furan Homologs, Pesticides, PAHs, PCB Congeners, SVOCs	GCECD, GCHRMS, GCMS
1999	WLCRIJ99	Oregon DEQ	Ross Island Lagoon Baseline	Aroclors, Butyltins, Conventionals, Grainsize, Metals, Pesticides, Phenols, Phthalates, PAHs, SVOCs,	E160.3M, E200.8, KRONE, KRONEPW, PSEP, SW6020, SW7471A, SW8081A, SW8082, SW8270-SIM
1999	WLCRIL99	Port of Portland	Ross Island Phase I	Aroclors, Butyltins, Conventionals, Grainsize, Metals, Pesticides, Petroleum, Phenols, Phthalates, PAHs, SVOCs, VOCs	D422, E200.8, KRONEPW, ORHCID, SW7471A, SW8081, SW8082, SW8270, SW9060, Unknown
1999	WLCRIV99	Landau Associates, Inc	Ross Island Phase 1 (Landau)	Aroclors, Butyltins, Conventionals, Grainsize, Metals, Pesticides, Petroleum, Phenols, Phthalates, PAHs, SVOCs, VOCs	D4129, E160.3M, E200.8, KRONE, NWTPH-Dx, PSEP, SW7471A, SW8015B, SW8081A, SW8082, SW8260B, SW8270C, SW8270-SIM, SW9060M
2001	WLCRIF01	Oregon DEQ	RI/RA Ross Island Phase 2 (Landau)	Aroclors, Butyltins, Metals, Pesticides, Petroleum, Phenols, Phthalates, PAHs, SVOCs	KRONEPW, UNKMET, Unknown
2001	WLLRSH01	USACE-Portland District	Willamette Ref Area P1	Aroclors, Conventionals, Grainsize, Pesticides, Petroleum	D422, E160.3M, E160.4M, SW8015, SW8081A, SW8082
2001	WLLRSI01	USACE-Portland District	Willamette Ref Area P2	Aroclors, Butyltins, Conventionals, Grainsize, Metals, Pesticides, Phenols, Phthalates, PAHs, SVOCs,	D422, D4129, E160.4M, E200.8, KRONE, SW7471A, SW8081A, SW8082, SW8270C
2003	WLLOBI03	City of Portland	Oaks Bottom Wildlife Refuge Sediment and Water Quality Evaluation	Aroclors, Metals, Pesticides, Phenols, Phthalates, PAHs, SVOCs, VOCs	SW6020, SW7471, SW8081A, SW8082, SW8260B, SW8270C
2004	LW2-U1 or LW2-U2	LWG	Round 2a sediment grabs	Aroclors, Conventionals, Dioxins & Furans, Dioxin & Furan Homologs, Grainsize, Metals, Pesticides, Phenols, Phthalates, PAHs, PCB Congeners, SVOCs	E1613, E1668, PLUMB, PSEP, SW6010B, SW6020, SW7471A, SW7742, SW8081A, SW8082, SW8151, SW8270C, SW8270-SIM, SW9030B
2004	WLCDRIO3	USACE-Portland District	Willamette O&M Sediment Characterization	Aroclors, Butyltins, Conventionals, Grainsize, Pesticides, Phenols, Phthalates, PAHs, SVOCs	D4129, E160.4M, E350.1, KRONEPW, PSEP, SW6020, SW7471A, SW8081, SW8082, SW8270, Unknown
2004	WLCZDH04	ZRZ Realty Company	Zidell Waterfront Property RI: Riverbank Characterization	Aroclors, Butyltins, Metals, PAHs	KRONE, SW6010, SW7471, SW8082, SW8270-SIM
2005	WLCDRD05	USACE-Portland District	2005 O&M Dredge Sediment Characterization	Aroclors, Butyltins, Conventionals, Dioxins & Furans, Dioxin & Furan Homologs, Grainsize, Herbicides, Metals, Pesticides, Petroleum, Phenols, Phthalates, PAHs, SVOCs, VOCs	D422, E160.3M, E160.4M, E350.1M, E1613, KRONE, KRONEPW, NWTPH-Dx, NWTPH-Gx, PSEP, SW6010B, SW6020, SW7471A, SW7742, SW8081A, SW8082, SW8151A, SW8260B, SW8270C, SW8270-SIM, SW9030M
2007	LW3-G	LWG	Round 3B sediment grabs	Aroclors, Conventionals, Grainsize, Metals, Pesticides, Petroleum, Phenols, Phthalates, PAHs, SVOCs, VOCs	ASTM D 854-83, E160.3M, NWTPH-Dx, NWTPH-Gx, PSEP, SW6010B, SW6020, SW7471A, SW7742, SW8081A, SW8082, SW8151M, SW8260B, SW8270C, SW8270-SIM,
2007	LW3-GCA	LWG	Round 3B Biota - Co-located Sediments	Aroclors, Butyltins, Conventionals, Dioxins & Furans, Dioxin & Furan Homologs, Grainsize, Metals, Pesticides, Phenols, Phthalates, PAHs, PCB Congeners, SVOCs	E160.3M, E1613B, E1668, KRONE, PSEP, SW6010B, SW6020, SW7471A, SW7742, SW8081A, SW8082, SW8151M, SW8270C, SW8270-SIM,
2007	LW3-UC or LW3-UG	LWG	Round 3 sediment from upstream and downstream	Aroclors, Conventionals, Grainsize, Metals, Pesticides, Petroleum, Phenols, Phthalates, PAHs, SVOCs	ASTM D 854-83, E160.3M, E350.1M, NWTPH-Dx, PSEP, SGT, SW6010B, SW6020, SW7471A, SW8081A, SW8082, SW8151M, SW8270C, SW8270-SIM, SW9030B
2008	LW3-C	LWG	Round 3B sediment cores	Aroclors, Conventionals, Grainsize, Metals, Pesticides, Petroleum, Phenols, Phthalates, PAHs, SVOCs	ASTM D 854-83, E160.3M, NWTPH-Dx, PSEP, SGT, SW6010B, SW6020, SW7471A, SW8081A, SW8082, SW8151M, SW8270C, SW8270-SIM,

Note:

DEQ = Department of Environmental Quality

EPA = Environmental Protection Agency

LWG = Lower Willamette Group

PGE = Portland General Electric

USACE = United States Army Corps of Engineers

USGS = United States Geological Survey

Source: Information compiled from LWG SCRA Database dated August 28, 2008

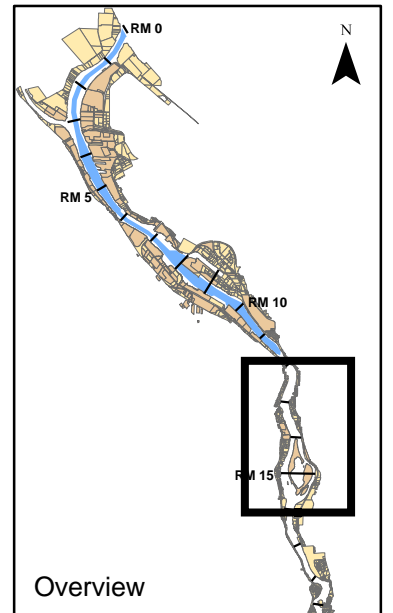
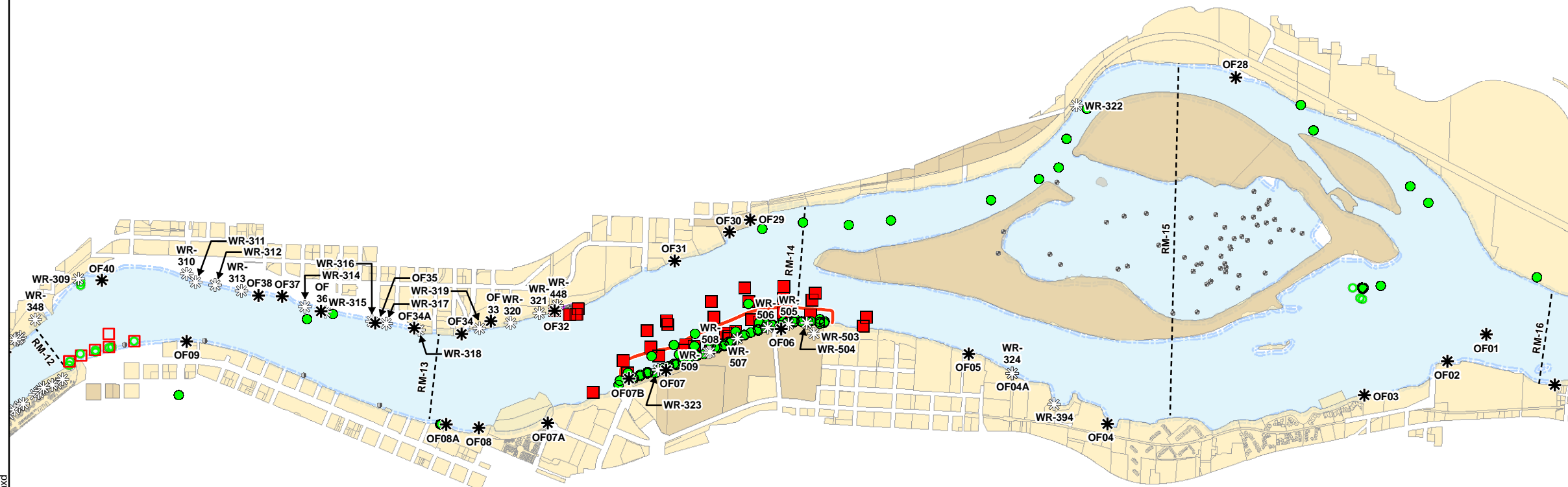
**Figure A-1
Historical Sediment Sampling Locations
(LWG and Other Studies)**

**Downtown Portland
Sediment Characterization
Field and Data Report**

River Mile 12 to 16
Willamette River
Portland, Oregon

LEGEND

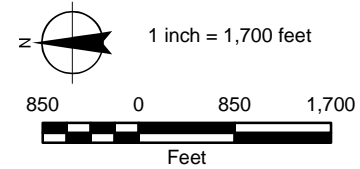
- LWG Core Sample Location
- LWG Grab Sample Location
- Other Core Sample Location
- Other Grab Sample Location
- Capped or Dredged Sample Location**
- Capped
- Dredged
- * City Outfall
- ⊗ Other Outfall
- PGE Station L Sediment Cap, Approximate
- Zidell - DEQ Sediment Management Area
- - - River Mile (RM)
- CSM Taxlots (2006-03-13)
- Waterfront Taxlots
- COE Navigation Channel



Path: P:\21211602501\GIS\MXD\PortlandHarbor_Sediment_DPSC_ProposedSample_RM12_16.mxd

MAP NOTES:
 Projection: Oregon State Plane North
 Datum: NAD 83
 Date: January 6, 2009
 1. The locations of all features shown are approximate.
 2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers and will serve as the official record of this communication.
 3. LWG = Lower Willamette Group.
 4. Core and grab information obtained from LWG SCRA Combo as of August 28, 2008.

5. PGE Station L sediment cap boundary approximated based on PGE Station L Phase II Final Report (CH2MHill, 1991).
 6. Zidell-DEQ Sediment Management Area (SMA) boundary provided by Maul, Foster, Alongi (November 3, 2008).
 7. Coordinates for CLBC8494BSED50 are incorrect.
 8. Outfall data obtained from the LWG's GIS shapefile entitled "Outfall_Oct_08.shp". Original source of information provided by the City of Portland in June of 2005. Stormwater pipeline data were provided to GSI Water Solutions by the City of Portland in February of 2008. As data were compiled from a variety of sources, no warranty is made as to the accuracy, reliability, or completeness of these data. Conveyance system information can be accessed at www.portlandmaps.com.

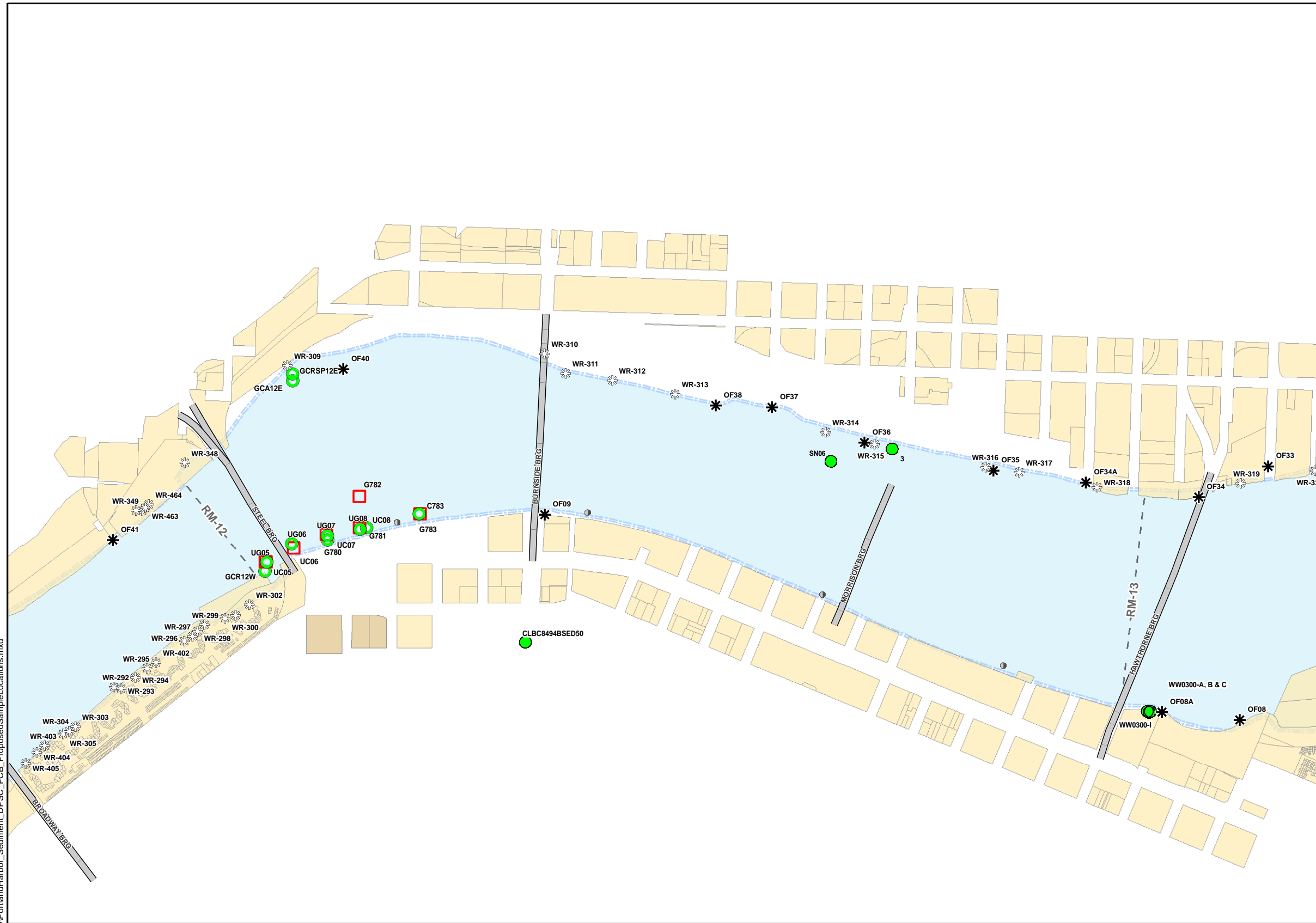


**Figure A-2
Historical Sediment Sampling Locations
(LWG and Other Studies)**

**Downtown Portland
Sediment Characterization
Field and Data Report**

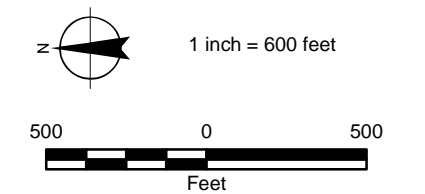
River Mile 12 to 13

Willamette River
Portland, Oregon



Legend

- LWG Core Sample Location
- LWG Grab Sample Location
- Other Core Sample Location
- Other Grab Sample Location
- Capped or Dredged Sample Location**
- Capped
- Dredged
- ✱ City Outfalls
- ✱ Other Outfalls
- PGE Station L Sediment Cap, Approximate
- Zidell - DEQ Sediment Management Area
- River Miles (RM)
- Portland Harbor RI CSM Taxlots (2006-03-13)
- Waterfront Taxlots



MAP NOTES:

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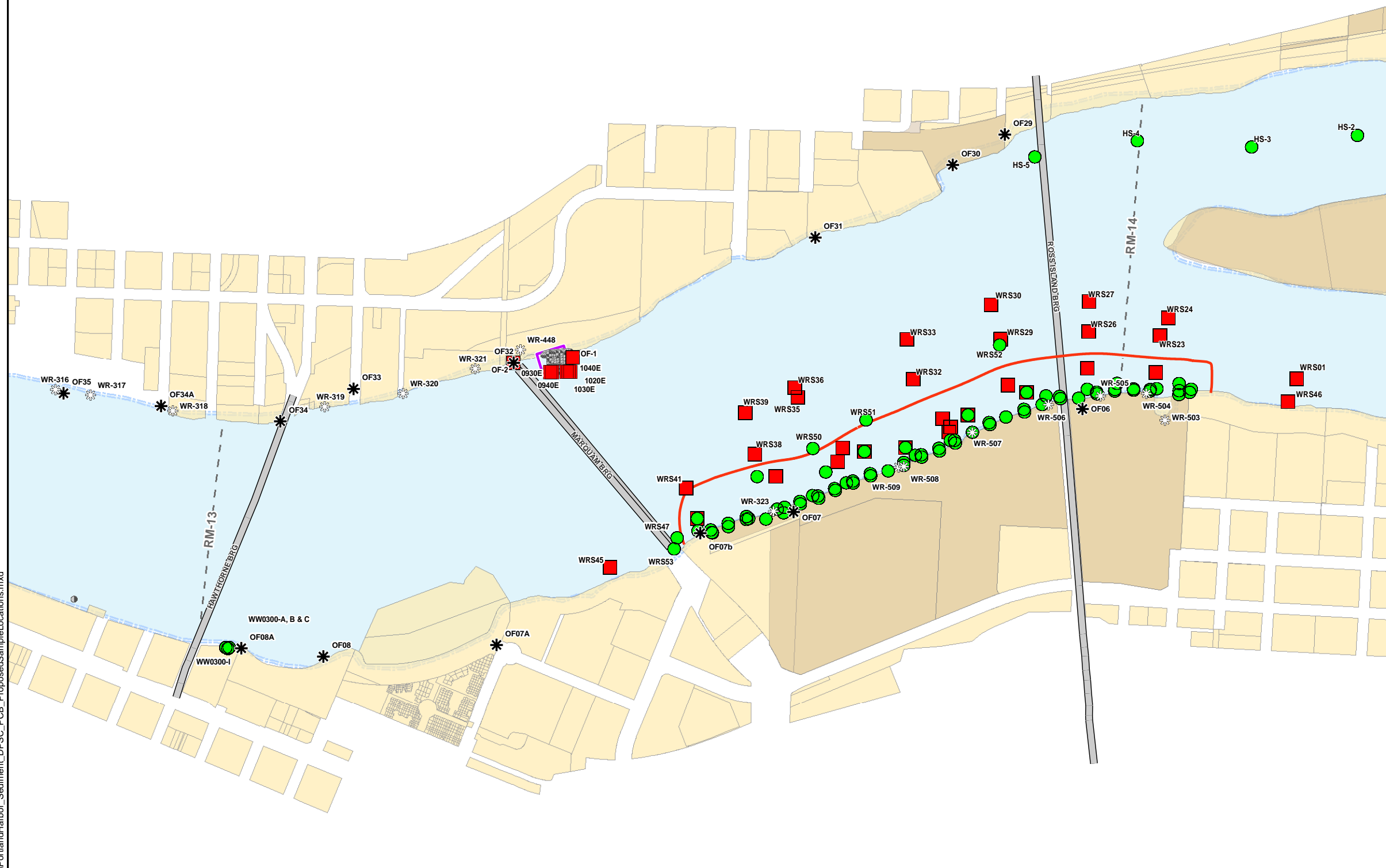
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Figure A-3
Historical Sediment Sampling Locations
(LWG and Other Studies)

Downtown Portland
Sediment Characterization
Field and Data Report

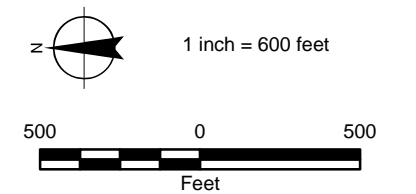
River Mile 13 to 14

Willamette River
 Portland, Oregon



Legend

- LWG Core Sample Location
- LWG Grab Sample Location
- Other Core Sample Location
- Other Grab Sample Location
- Capped or Dredged Sample Location**
- Capped
- Dredged
- * City Outfalls
- ⊛ Other Outfalls
- PGE Station L Sediment Cap, Approximate
- Zidell - DEQ Sediment Management Area
- - River Miles (RM)
- Portland Harbor RI CSM Taxlots (2006-03-13)
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MAP NOTES:

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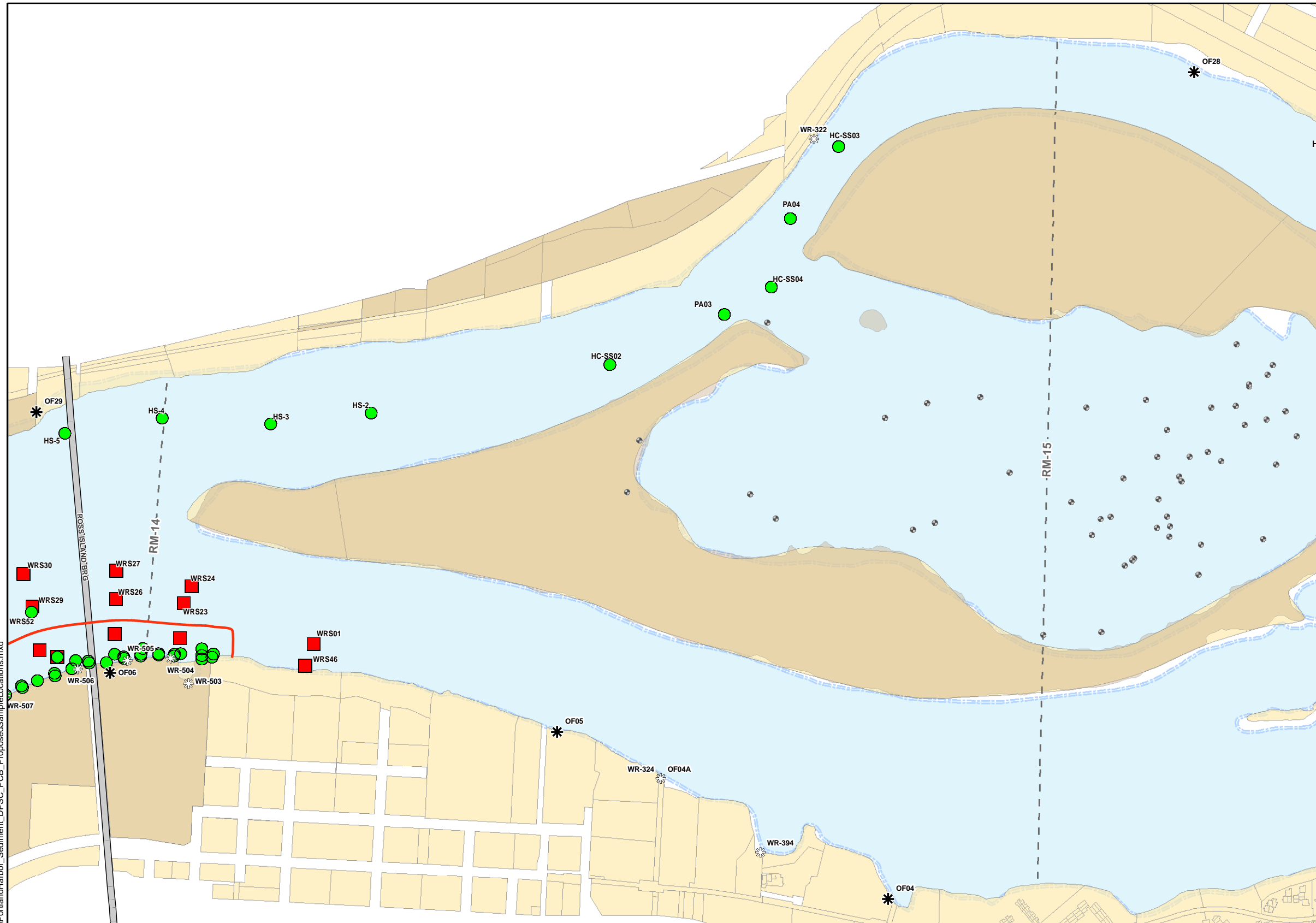
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Figure A-4
Historical Sediment Sampling Locations
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Downtown Portland
Sediment Characterization
Field and Data Report

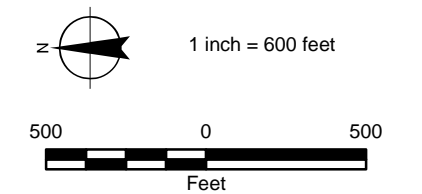
River Mile 14 to 15

Willamette River
 Portland, Oregon



Legend

- LWG Core Sample Location
- LWG Grab Sample Location
- Other Core Sample Location
- Other Grab Sample Location
- Capped or Dredged Sample Location**
- Capped
- Dredged
- * City Outfalls
- ⊗ Other Outfalls
- PGE Station L Sediment Cap, Approximate
- Zidell - DEQ Sediment Management Area
- - River Miles (RM)
- Portland Harbor RI CSM Taxlots (2006-03-13)
- Waterfront Taxlots



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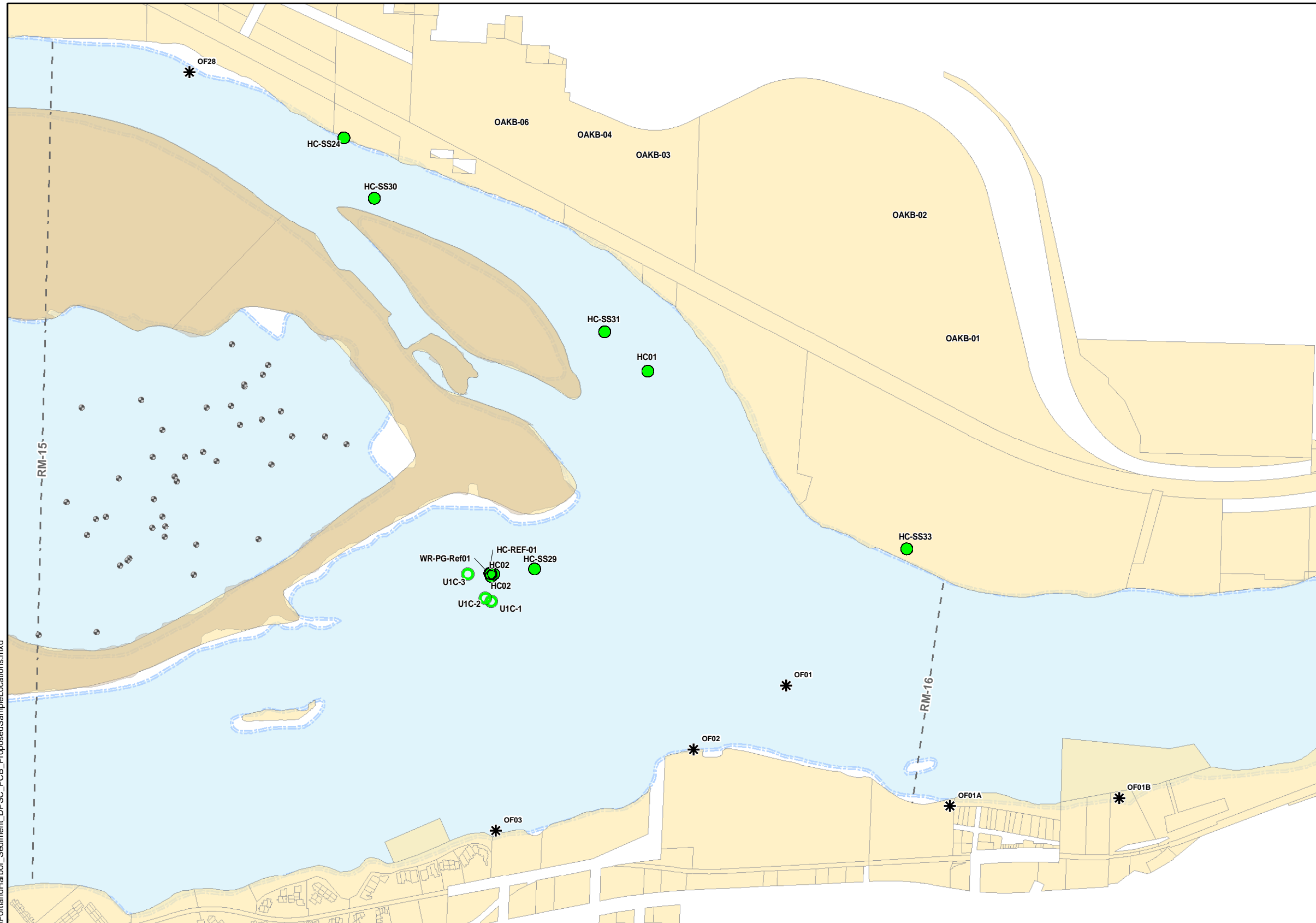
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**Figure A-5
Historical Sediment Sampling Locations
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**Downtown Portland
Sediment Characterization
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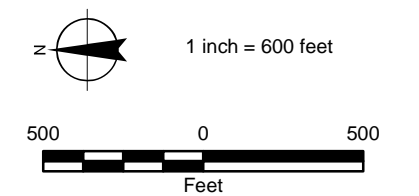
River Mile 15 to 16

Willamette River
Portland, Oregon



Legend

- LWG Core Sample Location
- LWG Grab Sample Location
- Other Core Sample Location
- Other Grab Sample Location
- Capped or Dredged Sample Location**
- Capped
- Dredged
- * City Outfalls
- ⊗ Other Outfalls
- PGE Station L Sediment Cap, Approximate
- Zidell - DEQ Sediment Management Area
- - - River Miles (RM)
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