AMENDED AND RESTATED PORTLAND HARBOR SUPERFUND SITE INFORMATION REQUEST RESPONSES FROM THE MARINE GROUP LLC FOR SHIP REPAIR OPERATIONS

Respondent The Marine Group LLC ("Respondent") received a CERCLA Section 104(e) Information Request dated 18 January 2008 ("Information Request") with respect to the Portland Harbor Superfund Site ("Site") from the United States Environmental Protection Agency ("EPA"). Respondent submitted preliminary partial responses to the Information Request on 19 May 2008. Respondent then submitted final responses to EPA under cover dated 5 November 2008. On 12 March 2010, EPA issued a general notice letter to Respondent. Respondent subsequently submitted two supplements to its responses to the Information Request on 30 September 2011 and 11 January 2012. Respondent's Information Request responses described in this paragraph are collectively referred to as the "Prior Responses."

Substantial additional information not included in the Prior Responses was uncovered during Respondent's investigation activities associated with its ongoing participation in a confidential mediation process among potentially responsible parties ("PRPs") for the Site, which was convened by EPA. Rather than submit another supplement to the Prior Responses, Respondent has elected to update and consolidate its Information Request responses, including restating the Prior Responses when appropriate, in these amended and restated Information Request responses ("Responses"). Consequently, the Prior Responses are superseded, and Respondent will no longer update them. Instead Respondent will update these Responses as required.

Respondent has been associated with several facilities within the Site. These facilities fall into two broad categories – ship repair facilities and non-ship repair facilities. Consequently, Respondent is submitting two separate sets of Responses, which taken together constitute the entirety of Respondent's Information Request Responses. This set of Responses pertains to Respondent's ship repair operations within the Site. These operations were conducted primarily at the Swan Island Shipyard and also, to a more limited extent, at the St. Johns Dry Dock. Each Response specifies the property(ies) to which it pertains.

When Respondent acquired Northwest Marine, Inc. an Oregon corporation ("NWM"), Respondent's predecessor-in-interest, on 14 April 1989, it was operating exclusively on Swan Island, except for limited administrative activity described in the set of Responses addressing non-ship repair operations. At the time of the acquisition, NWM's representatives did not disclose that NWM had conducted historical operations that could give rise to CERCLA liability at other locations within the Site, and until recently, Respondent was unaware of potential liability related to any other such locations. By submitting these Responses, Respondent does not admit any liability whatever with respect to these historical operations. With the exception of the above-referenced administrative activity, Respondent was not involved in any way with historical activities at non-Swan Island locations, and in some instances NWM ceased operating at these locations many decades before Respondent acquired it.

Because Respondent was not aware of the non-administrative operations outside of Swan Island when it acquired NWM, Respondent did not request information from NWM regarding these operations. Only a few of the records that Respondent obtained from NWM address these

operations, and Respondent has produced all such records. After interviewing William H. Zavin II, the former CEO of NWM, Respondent concluded that most such records were destroyed.

Mr. Zavin also received an Information Request from EPA. Respondent does not represent Mr. Zavin, and these Responses are not submitted on Mr. Zavin's behalf. However, Respondent has interviewed Mr. Zavin several times, and he has been cooperative in these interviews. Respondent has included in these Responses all responsive information obtained from these interviews.

Respondent submitted a large collection of documents, including an electronic document database, with its Prior Responses, and is submitting with these Responses additional documents discovered during Respondent's investigation activities. All documents (regardless of whether submitted with the Prior Responses or with these Responses) are Bates numbered and in pdf format.[1] References in these Responses to these documents will be by Bates number in the format "NWMARxxxxxx," where x represents a unique page number.

Section 1.0 Respondent Information

1. Provide the full legal, registered name and mailing address of Respondent.

Response 1: Respondent is The Marine Group LLC, a California limited liability company, doing business as The Marine Group ("Marine Group"), 1311 First Street, Coronado, CA 92118. References herein to "Respondent" include Marine Group and its predecessor, BAE Systems San Diego Ship Repair Inc., a California corporation ("BAE"), collectively, unless otherwise specified.

2. For each person answering these questions on behalf of Respondent, provide:

- **a. full name;**
- **b. title;**
- **c. business address; and**
- **d. business telephone number, electronic mail address, and FAX machine number.**

Response 2: Dana M. Austin
Maritime Administration / USDOT
Office of Ship Disposal, MAR640
1200 New Jersey Ave., SE, W23-496
Washington, DC 20590
Phone: (202) 366-3523
Email: dana.austin@dot.gov

William M. Johnston

(b) (6)

[1] Respondent submitted a small number of documents in hard copy with the Prior Responses. See Response 13(b).

(b) (6)
Phone: (b) (6)
Email: (b) (6)

Laura J. Machado
Chief Financial Officer
The Marine Group LLC
997 G Street, Chula Vista, CA 91910
Phone: (619) 427-6767 ext. 142
Fax: 619-427-0324
Email: laura@marinegroupbw.com

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621 SW Morrison St.
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Fax: (714) 969-0820
Email: srowlands@Geosyntec.com

Raymond A. Parra
General Counsel
BAE Systems San Diego Ship Repair Inc.
2205 East Belt Street
San Diego, CA 92113
Phone: (619) 557-4201
Fax: (619) 516-8380
Email: Raymond.parra@baesystems.com

Sandor (Shaun) Halvax
Director of Environmental Services
BAE Systems San Diego Ship Repair Inc.
2205 East Belt Street
San Diego, CA 92113
Phone: (619) 557-4210
Fax: (619) 516-8369
Email: sandor.halvax@baesystems.com

Ellen Vinck
Vice President, Risk Management
BAE Systems Ship Repair Inc.
2205 East Belt Street
San Diego, CA 92113
Phone: (619) 238-1000 ext. 4297
Fax: (619) 239-1751
Email: ellen.vinck@baesystems.com

Daniel P. Cotter
Former Chief Financial Officer
Former address:
BAE Systems Ship Repair Inc.
750 West Berkley Avenue
Norfolk, VA 23523
Phone: (757) 494-4530
Fax: (757) 494-4961
Email: dan.cotter@baesystems.com
(current contact information unknown)

Lloyd A. Schwartz
Former General Counsel
Former address:
BAE Systems San Diego Ship Repair Inc.
2205 East Belt Street
San Diego, CA 92113
Phone: (619) 238-1000 x 2750

Fax: (619) 239-1751
Email: lloyd.schwartz@baesystems.com
(current contact information unknown)

3. If Respondent wishes to designate an individual for all future correspondence concerning this Site, please indicate here by providing that individual's name, address, telephone number, fax number, and, if available, electronic mail address.

Response 3:

J.W. Ring, Esq.
Ring Bender McKown & Castillo LLLP
Attorneys for Respondent
621 SW Morrison St.
Suite 600
Portland, OR 97205
Phone: (503) 964-6723
Email: jwring@ringbenderlaw.com

Section 2.0 Owner/Operator Information

4. Identify each and every Property that Respondent currently owns, leases, operates on, or otherwise is affiliated or historically has owned, leased, operated on, or otherwise been affiliated with within the Investigation Area during the period of investigation (1937 – Present). Please note that this question includes any aquatic lands owned or leased by Respondent.

Response 4: Respondent's ship repair operations were associated with four properties within the boundaries of the Site.

1. Inland Property. Respondent owned and operated at the properties commonly known as 5815 and 5851 North Lagoon Avenue, Portland, OR 97217 (collectively, the "Inland Property"), and more particularly described in the Title Plant Records Report prepared by Land America Commercial Services, dated 7 May 2008 (see NWMAR107058-NWMAR107065). Respondent submitted with the Prior Responses a copy of Multnomah County Assessor's Map No. 1N1E17CD/Portland, with the two applicable tax parcels comprising the Inland Property highlighted (Taxlots 1N1E17CD-00500 & 1N1E17CD-00700) and with the tax account numbers associated with these tax parcels indicated, as NWMAR106634.

2. Portland Harbor Shipyard. Respondent also performed ship repair work at 5555 North Channel Avenue, Portland, OR 97217, Parcel No. 376 (Various Buildings at the Portland Harbor Shipyard), Tax Account No. R506872, Taxlot 1N1E18D-00200, pursuant to various agreements with the Port of Portland ("Port"),[2] but Respondent did not own this parcel and did not have an exclusive right to use this parcel, which was one of several parcels comprising the Portland

[2] All references herein to the Port include Cascade General, during the period it operated the Shipyard.

Harbor Shipyard, also known as the Swan Island Shipyard (the "Shipyard").[3] As used herein, the Shipyard does not include the Inland Property.

3. St. Johns Dry Dock. NWM conducted ship repair operations at the Shipyard and Inland Property prior to its acquisition by Respondent in 1989. NWM also conducted ship repair operations at St. Johns Dry Dock from approximately 1943 through 1953. Thus, NWM ceased operations at the St. Johns Dry Dock more than 35 years prior to its acquisition by Respondent. St. Johns Dry Dock is located at the foot of Edgewater Street, Portland, OR 97203, approximately 2.5 miles northwest of Swan Island. A report titled *Existing Data/Site History Report, Willamette Cove, Portland, Oregon* ("*Site History Report*") identifies 3 taxlots where St. Johns Dry Dock may have existed: No. 39[4] (Taxlot 1N1W12-00300), No. 99 (Taxlot 1N1W12DB-02300), and No. 124 (Taxlot 1N1W12DB-02200) (POP0133928-POP0133929). This report was submitted in Document Tab 9 of the Port's 104(e) Responses for Willamette Cove (POP0139303-POP0139352).[5] These taxlots comprise the "Central Parcel" described in the Port's 104(e) Responses for Willamette Cove (POP0139303-POP0139352; see also POP0133928-POP0133929). Respondent has provided all information regarding these operations that is not privileged in these Responses.

4. Sulzer Bingham Pumps Dock. BAE entered into a Short-Term Berthage Agreement with Sulzer Bingham Pumps Inc. for the temporary use of Sulzer's 1,200 foot-long wooden dock ("SBP Dock") located at 2800 NW Front Avenue, Portland, Oregon (NWMAR136379-NWMAR136394). BAE's lease of the SBP Dock was very brief, lasting only from 8 January 1991 until 25 January 1991. The SBP Dock is located on the river-adjacent portion of Taxlots 1N1E28B-600 and 1N1E28B-0800 (see SUL000132-SUL000135).[6] More generally, see NWMAR136364-NWMAR136394.

As noted in the introduction to these Responses, NWM also owned and operated, prior to its acquisition by Respondent, several other facilities within the Site that were not used for ship repair purposes, but instead were used for other purposes such as office space, warehouse storage and metal fabrication. These facilities are discussed in the other set of Information Request Responses submitted herewith.

5. Provide a brief summary of Respondent's relationship to each Property listed in response to Question 4 above, including the address, Multnomah County Alternative Tax lot Identification number(s), dates of acquisition, period of ownership, lease, operation, or affiliation, and a brief overview of Respondent's activities at the Properties identified.

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[3] Note that the Shipyard, as used here, refers only to the portion of 5555 North Channel Avenue owned by the Port; i.e., references to the Shipyard do not include the Inland Property, St. Johns Dry Dock, or any other location other than the aforementioned property.

[4] Note that POP0134012-POP0134015 labels this tax lot as 30. However, this label appears to be in error as, for example, POP0133928-POP0133929 and POP0139304 refer to this parcel as tax lot 39.

[5] For the remainder of these Responses, citations for documents included as attachments to other parties' 104(e) Responses will have the 104(e) Responses referenced in a footnote in addition to an in-text reference to the pertinent document.

[6] Submitted as part of Exhibit 1 of Sulzer Bingham Pumps Inc.'s 104(e) Responses (SUL000026-SUL000121).

Response 5:
NWM and Respondent engaged in ship repair operations at several locations within the Site and were known for having special expertise in electronics, particularly navigational systems. They performed work on both U.S. military and commercial vessels. They never engaged in ship building or scrapping activities at any location within the Site.

1. Inland Property. NWM began operating at the Inland Property in 1950, under a lease with the Port.[7] The Inland Property was the location of support facilities for NWM's and, subsequently, BAE's ship repair operations, and included pipe, machine, sheet metal, electrical, and plate shops. On 14 April 1989, BAE, which at that time was known as Southwest Marine, Inc., acquired NWM (see documents related to acquisition at NWMAR010487-NWMAR010684) and continued its operations at the Inland Property. BAE ceased active operations at the Inland Property on 9 November 1992, and vacated the Inland Property shortly afterwards in early 1993. Starting in 1993, BAE subleased portions of the Inland Property to multiple unaffiliated entities not involved in ship repair operations.

Marine Group first became involved with the Inland Property on 25 November 1997, when it acquired the assets of NWM from BAE, including the lease of the Inland Property, and continued subleasing to unaffiliated entities not involved in ship repair operations. On 23 September 2002, Marine Group acquired title to the Inland Property (NWMAR107083-NWMAR107085) and continued leasing operations. On 6 November 2006, Marine Group ceased all operations at the Inland Property and conveyed title to EWH, LLC, an Oregon limited liability company, which is unaffiliated with BAE or Marine Group (NWMAR107086-NWMAR107088).

2. Portland Harbor Shipyard. The history of NWM's and BAE's operations at the Shipyard covers the same time periods as their respective operations at the Inland Property. NWM first began operating at the Shipyard in 1950, shortly after the Port completed demolition and renovation activities. NWM's operations at the Shipyard continued until BAE acquired NWM on 14 April 1989, when BAE's operations at the Shipyard commenced.[8] BAE's operations continued until 9 November 1992. Marine Group never operated at the Shipyard.

The Shipyard contains multiple facilities, such as blast booths, paint booths, work bays, storage areas, dry docks and berths (see NWMAR107104-NWMAR107123). NWM's and Respondent's ship repair operations at the Shipyard varied vessel to vessel, but generally included: repair or installation of major machinery; major retrofitting and repurposing of entire vessels; installation or maintenance of ship-wide systems (both electronic and otherwise); reconfiguration of ship interiors; repainting of ship interiors, tanks, and hulls; and the berthing and dry-docking of vessels. Regardless of the specific activity, NWM's and Respondent's operations at the Shipyard were regulated and monitored by the Port under numerous use agreements and tariffs

[7] For a history of the ownership of the Inland Property, see Response 10.
[8] Respondent continued to do business under the assumed name "Northwest Marine" following the acquisition, but the corporate entity Northwest Marine, Inc. merged into Respondent, and Respondent was the surviving corporate entity. See Response 74(c).

(e.g., POP0004348, POP0004365-POP0004366, POP0052889-POP0052891, POP0056455-POP0056500, POP0057472-POP0057520, NWMAR054093-NWMAR054094, NWMAR119063, NWMAR119067).[9] The Port took an active role in regulating the practices of Shipyard tenants and exercised punitive measures against tenants that did not comply with Port instructions (e.g., NWMAR140013-NWMAR140014, POP0069097-POP0069104).[9]

According to ship docking logs summarized at NWMAR142741-NWMAR142900, NWM and Respondent collectively were responsible for 1,588 vessels out of 6,882 vessels (23%) repaired between the years 1953 and 2000. As an alternative metric, NWM and Respondent were collectively responsible for 24,004 days of ship repair operations, or 25% of the total 96,886 days of repair conducted at the Shipyard (NWMAR146377-NWMAR146378). See NWMAR142739-NWMAR142740 and NWMAR146383 for a summary and map, respectively, of NWM's and Respondent's specific usage of individual facilities at the Shipyard through time.

3. St. Johns Dry Dock. NWM was incorporated in Oregon on 28 May 1943 (NWMAR104518-NWMAR104520), and commenced ship repair operations at locations within the Site later that year. At that time, NWM was a small, family-owned business (NWMAR147870), and it used several locations to perform ship repairs, by leasing berths and dry docks on an as-needed basis (personal communications with William Zavin). St. Johns Dry Dock was operational from 1904 until 1953 (see, e.g., *Remedial Investigation Addendum: Supplemental Preliminary Assessment of the Willamette Cove Upland Facility, Portland Oregon* report ("*RI Addendum*"), POP0132695-POP0132875),[10] and NWM operated there from at least 20 June 1943 to 13 March 1953 (see ship docking logs at POP0131309-POP0131445, POP0131446-POP0131608, POP0131610-POP0131856 and ship repair logs at POP0130202-POP0131306).[11] NWM's ship repair operations at St. Johns Dry Dock consisted primarily of cleaning, repainting, and repairing the hulls of vessels at dry dock (see docking compilation logs at POP0130202-POP0131306).[11] NWM operated at St. Johns Dry Dock for 10 out of the 50 years that it was an operational ship repair facility, and the aforementioned ship repair logs indicate that NWM repaired 216 out of the 5,133[12] (4%) vessels repaired at St. Johns Dry Dock. These vessel docking logs also indicate the NWM operated a total of 862 repair days at St. Johns Dry Dock—approximately 3% of possible working days.[13]

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[9] Port documents submitted as attachments to the Port's 104(e) Responses for the Swan Island Upland Facility & Berth 311 (POP0138925-POP0139014).

[10] Port documents submitted as part of Document Tab 9 of the Port's 104(e) Responses for Willamette Cove (POP0139303-POP0139352).

[11] To Respondent's knowledge, these date corresponds to the earliest (POP0131579) and latest (POP0131843) recorded docking of a vessel at St. Johns that was specified as being related to NWM. Statistics for vessels are tabulated for the known vessels docked at St. Johns Dry Dock between these dates. If a vessel was noted as not having docked, it was not included in these statistics. These documents were included as part of Document Tab 3 of the Port's 104(e) Responses for Willamette Cove (POP0139303-POP0139352).

[12] POP0131844 tallies the total number of ships repaired at the Port of Portland prior to the close St. Johns Dry Dock (i.e., the move of Dry Dock No. 1 to Swan Island) as 5418, with 285 of these vessels repaired at Swan Island.

[13] As the Port's docking logs only date back to 1925, an exact count of docking days for all ship repair days at St. Johns Dry Dock was not possible. An approximation was found by assuming 365 possible repair days per year, with Dry Dock No. 1 operational between 1904 (POP0132709) and 1953 (POP0131843) and Dry Dock No. 2 operational between 1922 (POP0132711) and 1953 (POP0131831). These assumptions lead to an estimated 29,930 possible repair days at St. Johns Dry Dock.

To Respondent's knowledge, the best available maps of the St. Johns Dry Dock facilities are 1924, 1932, 1950, and 1955 Sanborn maps from the *Site History Report* (POP0134048, POP0134057-POP0134062, POP0134070, POP0134079-POP0134084)[14] and a map of Willamette Cove from the *RI Addendum* (POP0132776).[14] A historical record detailing "Contractors Space Requirements" indicates that NWM owned building 17 at St. Johns Dry Dock, a building labeled as a carpenter's shop (POP0132823),[14] but no maps indicating the location of this specific structure were discovered. This record details contractors' usage of shipyard space other than over-water facilities as of 16 October 1951. It indicates that NWM used 2,054 square feet of non-over-water space at the St. Johns Dry Dock facilities, which at that time had a total of 5,686 square feet of such space dedicated to contractors.[15] Thus, NWM was using 36% of the non-over-water space for contractors. At most, NWM used this space for 10 out of 50 years, which is 20% of the time that St. Johns Dry Dock was operational. Thus, over the lifetime of the St. Johns Dry Dock facilities, NWM used at most 7% of the non-over-water space dedicated to contractors. Moreover, usage of these facilities was much less likely than over-water work to result in releases of contaminants to the Willamette River; the activities included uses such as "tool and equipment storage, paint storage and carpenter shop" (POP0132823).[14]

4. Sulzer Bingham Pumps Dock. In 1991 BAE (at that time known as Southwest Marine, Inc., doing business as Northwest Marine) signed a *Short-Term Berthage Agreement* with Sulzer Bingham Pump Inc. allowing for the berthage of a single vessel, the Keystone Canyon, at the SBP Dock for 18 days from 8 January 1991 to 25 January 1991(NWMAR136379-NWMAR136394). As stipulated by the Short-Term Berthage Agreement, BAE was not to "handle, use, store, transport, transfer, receive or dispose of, or allow to remain on the Premises" any hazardous material at the SBP Dock (NWMAR136387). Additionally, the contract stipulated that the docked vessel must be empty of cargo and contain fuel sufficient only for in-harbor transport (NWMAR136381), further reducing the likelihood of hazardous material releases at the site related to BAE's usage. Furthermore, as the contract expressly prohibited BAE from maintaining or accumulating refuse on the SBP Dock (NWMAR136381), and access to SBP Dock from NW Front Avenue was limited by the contract to a temporary walkway (NWMAR136382), waste disposal related to the usage of the SBP Dock by BAE was infeasible and thus very unlikely to have occurred. The statements in this Response to Information Request No. 5 and in the Response to Information Request No. 4 at page 4 represent the entirety of Respondent's knowledge regarding BAE's use of the SBP Dock, and the SBP Dock will not be discussed further in these Responses.

6. Identify any persons who concurrently with you exercises or exercised actual control or who held significant authority to control activities at each Property, including:

a. partners or joint venturers;

b. any contractor, subcontractor, or licensor that exercised control over any

[14] Port documents submitted as part of Document Tab 9 of the Port's 104(e) Responses for Willamette Cove (POP0139303-POP0139352).

[15] At least 120 square feet of space was omitted from this total because it was used by "Marine Surveyors" rather than contractors (POP0132823).

materials handling, storage, or disposal activity on the Property; (service contractors, remediation contractors, management and operator contractors, licensor providing technical support to licensed activities);

c. any person subleasing land, equipment or space on the Property;

d. utilities, pipelines, railroads and any other person with activities and/or easements regarding the Property;

e. major financiers and lenders;

f. any person who exercised actual control over any activities or operations on the Property;

g. any person who held significant authority to control any activities or operations on the Property;

h. any person who had a significant presence or who conducted significant activities at the Property; and

i. any government entities that had proprietary (as opposed to regulatory) interest or involvement with regard to the activity on the Property.

Response 6:
The Shipyard and St. Johns Dry Dock were owned and operated by the Port during the periods when NWM and Respondent conducted work there. NWM and Respondent were one of hundreds of users of each of these facilities and did not exercise actual control or hold significant authority to control activities at these facilities. Consequently, this Response addresses only the Inland Property. The Port's 104(e) Responses for the Swan Island Upland Facility & Berth 311 (POP0138925-POP0139014) address the Shipyard, while the Port's 104(e) Responses for Willamette Cove (POP0139303-POP0139352) address St. Johns Dry Dock. The Port exercised control over its tenants at these facilities through tariffs and use agreements (e.g., POP0004348, POP0004365-POP0004366, POP0052889-POP0052891, POP0056455-POP0056500, POP0057472-POP0057520, NWMAR054093-NWMAR054094, NWMAR119063, NWMAR119067).[16] Records indicate that the Port took an active role in regulating the practices of Shipyard tenants and exercised punitive measures against tenants that did not comply with Port instructions (e.g., NWMAR140013-NWMAR140014, POP0069097-POP0069104).[16] Additionally, the Port maintained and operated the dry docks, berths, cranes, and treatment facilities (POP0138955-POP0138958) and owned or leased the submerged land surrounding much of the Shipyard (POP0138927-POP0138928).

Inland Property. The following Response to this Information Request No. 6 relates to the Inland Property:

a. None.

b. All waste and material handlers are described in Response 40.

c. Respondent leased out space on the Inland Property from approximately 1993 to 2006 and worked with Macadam Forbes agent Edward J. Meaney to locate and negotiate with tenants.

[16] Port documents submitted as attachments to the Port's 104(e) Responses for the Swan Island Upland Facility & Berth 311 (POP0138925-POP0139014).

The following entities or persons rented space from Respondent and exercised control over the Inland Property between 1993 and 2006. The contact information provided is the last known contact information in Respondent's files. Respondent's knowledge of each tenant's business is limited to the specific use for which the lease was made, which is stated in each individual lease.

General Reference: Monthly Management Reports (NWMAR105740-NWMAR106467)

1. Advanced Seismic Hardware, an Oregon limited liability company
Advanced Seismic Hardware LLC
Attn: Edward G. Westerdahl III, President
5555 North Channel Avenue
Building 2, Bay 8
Portland, OR 97217
(503) 224-9500
Use: manufacture and distribution of seismic related products
Reference: NWMAR015528-NWMAR015586

2. A.G.G. Enterprises, Inc., an Oregon corporation
A.G.G. Enterprises, Inc.
Attn: George T. Simons, President
P.O. Box 17163
Portland, OR 97217
Use: operating a commercial garbage service and parking, and storage of dumpsters and trucks for commercial refuse business
Reference: NWMAR015587-NWMAR015643, NWMAR015660-NWMAR015702

3. Allstate Industrial and Marine Cleaning, Inc.
Allstate Industrial and Marine Cleaning
Attn: Daniel Goll
5555 North Channel Ave.
Building 80
Portland, OR 97217
Use: Storage of trucks and vehicles
NWMAR000684-NWMAR000704, NWMAR146518-NWMAR146833

4. Amsco Refrigeration, Inc., an Oregon corporation
Amsco Refrigeration, Inc.
Attn: Vince Seeley, President
5555 N. Channel Ave., Building 2
Portland, OR 97217
Use: storage and repair of refrigeration equipment
Reference: NWMAR015644-NWMAR015659

5. Bojarski, Inc., an Oregon corporation
Bojarski, Inc.
Attn: Tony Bojarski
5555 N Channel Ave.
Building 2, Bay 8
Portland, OR 97217
(503) 226-7065
Use: manufacture and distribution of wood trusses
Reference: NWMAR015792-NWMAR015843

6. C.H. Murphy/Clark-Ullman, Inc., an Oregon Corporation
C.H. Murphy/Clark-Ullman, Inc.
Attn: Randy Lederbrand, President
5565 N. Dolphin Street
Portland, OR 97217
(503) 285-5030
Alternative address from correspondence:
C.H. Murphy/Clark-Ullman, Inc.
2620 Tacoma Way
Tacoma, WA 98409
(253) 475-6566
Use: fabricating pressure vessels and other related products
Reference: NWMAR015703-NWMAR015711, NWMAR015844-NWMAR015961

7. Certified Technical Consultant Services, an Oregon corporation
Certified Technical Consultant Services
Attn: Elahi Bradley-Muhammed, President
5555 N. Channel Ave., Building 2
Portland, OR 97217
Alternative address on lease:
Certified Technical Consultant Services
4134 N. Vancouver Ave., Suite 201
Portland, OR, 97217
Use: assembling computers
Reference: NWMAR015712-NWMAR015746

8. Chuck Leavy Fabricators, a.k.a. C.L. Fabrications, Inc., an Oregon corporation
C.L. Fabrications, Inc.
Attn: Charles W. Leavy
P.O. Box 31012
Portland, OR 97203
Use: steel fabrication
Reference: NWMAR015962-NWMAR016065

9. Dick Corporation, a Pennsylvania corporation
Dick Corporation
Attn: Mark Hedberg, Project Manager
900 State Route 51
Post Office Box 10896
Large, PA 15025
Fax: (412) 384-1150
Use: office space
Reference: NWMAR016116-NWMAR016126

10. Environmental Fibers International, Inc., a.k.a. EFI, an Oregon corporation
EFI
Attn: Steve Jenkins, President
4325 N. Commerce Street
Portland, OR 97217
(503) 737-2100
Use: storage and washing of semi-tractors and trailers (exterior only by mobile washer with biodegradable soap), storage of old corrugated cardboard bales and fueling of trucks by mobile fueler
Reference: NWMAR016127-NWMAR016145

11. Evans Metal Fabricators, Inc., a.k.a. EMF, an Oregon Corporation
Evans Metal Fabricators, Inc.
Attn: Christopher A. Evans, President
P.O. Box 10144
Portland, OR 97296
Fax (503) 228-0239
Use: fabricating, cutting, storage and distribution of steel products
Reference: NWMAR016066-NWMAR016115, NWMAR016146-NWMAR016241

12. Forest Products Transportation and Reload Services, a sole proprietorship
Forest Products Transportation and Reload Services
Attn: David E. Wilson
2300 Contra Costa Blvd.
Suite 240
Pleasant Hill, CA 94523
(925) 798-7700
Alternative address on lease:
Sierra Coast Trucking
1130 Burnett Ave., Suite C
Concord, CA 94520

Use: general office purposes
Reference: NWMAR016242-NWMAR016264

13. Freightliner LLC, a.k.a. Portland Freightliner, a Delaware corporation
Freightliner LLC
Attn: Jim Sideow, Property Manager
4747 N. Channel Avenue
Portland, OR 97217
(503) 735-6799
Alternative address:
Freightliner LLC
2701 NW Vaughn Street
Portland, OR 97210
Alternative address:
Portland Freightliner, Inc.
Attn: Michael McBride, General Manager
9622 NE Vancouver Way
Portland, OR 97211
Alternative address:
Portland Freightliner, Inc.
P.O. Box 17218
Portland, OR 97217
Use: storage of partially constructed trucks and other related activities
Reference: NWMAR016265-NWMAR016379, NWMAR016623-NWMAR016625

14. Goodwin, Lynne Christine, d.b.a. C&S Graphic Design, a sole proprietorship
Lynne Christine Goodwin
c/o C&S Graphic Design
1413 C Street
Vancouver, WA 98663
Alternative address from correspondence:
Lynne Christine Goodwin
4000 Clark Ave.
Vancouver, WA
Use: general office space for graphic design business
Reference: NWMAR015747-NWMAR015791

15. Jewett Cameron Lumber Corporation
Jewett Cameron Lumber Corporation
Attn: Donald M. Boone, Administration
12670 SW Hall Blvd.
Tigard, OR 97223
(503) 620-1788

Use: secondary wood product manufacturing
NWMAR000705-NWMAR000770

16. King, Jack
Jack King
c/o Carl M. McLemore
4715-B N. Lagoon
Portland, OR 97217
(503) 283-6474
Use: storage of household goods
Reference: NWMAR016396-NWMAR016405

17. Nevins, Garry
Garry Nevins
6708 SE Hazel Avenue
Portland, OR 97206
Use: no information in files
Reference: NWMAR016388-NWMAR016395

18. Oregon Steel Mills, a Delaware corporation
Oregon Steel Mills
Attn: Eric Enquist, International Sales Rep.
14400 N Rivergate Blvd.
Portland, OR 97203
Alternative address from correspondence:
Oregon Steel Mills
Attn: Ray Adams
PO Box 5368
Portland, OR 97228
Use: storage, assembly and maintenance of steel mill equipment
Reference: NWMAR017086-NWMAR017111, NWMAR017204-NWMAR017295

19. Pacific Dynamics Corporation, an Oregon corporation
Pacific Dynamics Corporation
Attn: Daniel S. Goll, President
P.O. Box 11126
Portland, OR 97211
Use: conducting business as a marine and industrial cleaning company and office space
Reference: NWMAR017132-NWMAR017203

20. Pardue International, a.k.a. Pardue Pre-Cast, an Oregon corporation
Pardue International
Attn: William A. Pardue, President
20915 SW 105th

Tualatin, OR 97062
Use: manufacturing, assembly and distribution of concrete, granite and masonry products and related items
Reference: NWMAR017112-NWMAR017131

21. Property Acquisition Corporation, an Oregon corporation
Property Acquisition Corp.
Attn: Charles E. McLawhorn, CFO
1020 SW 10th Ave.
Portland, OR 97205
(503) 243-6722
Use: storage of materials
Reference: NWMAR017060-NWMAR017085

22. QuEnSys Management, f.k.a. P&H Marine Associates, an Oregon corporation
QuEnSys Management Group, Inc.
Attn: Donald Nugent
5555 N. Channel Ave.
Building 2
Portland, OR 97217
Alternative address:
Donald Nugent
15600 NW West Union Rd.
Portland, OR 97229
Use: general office use
Reference: NWMAR008175-NWMAR008205, NWMAR017015-NWMAR017059

23. Real Steel, Inc.
Real Steel, Inc.
Attn: Karen Johnson, President
P.O. Box 168
Clackamas, OR 97015
Use: fabrication of steel products
Reference: NWMAR008208-NWMAR008232

24. Schell Enterprises, a.k.a. Schell Construction, a Washington corporation
Schell Enterprises, Inc.
Attn: L.E. Butch Schell, President
5555 N. Channel Ave.
Portland, OR 97217
(503) 240-3375
Alternative address from correspondence:
Schell Enterprises, Inc.
P.O. Box 2366

Shelton, WA 96584
Use: general contractors' shop, office and related uses
Reference: NWMAR016952-NWMAR016974

25. Seaport Transportation LLC, an Oregon corporation
Seaport Transportation LLC
Attn: Mike McLemore
3450 SW 110th
Beaverton, OR 97005
(503) 285-2553
Use: general office space
Reference: NWMAR016975-NWMAR017014

26. Service Analytical Lab, Inc., an Oregon corporation
Service Analytical Lab, Inc.
Attn: Donald W. Bowey, Jr., President
5555 N. Channel Ave.
Portland, OR 97217
(503) 289-3487
Use: environmental laboratory
Reference: NWMAR016901-NWMAR016951

27. Service Steel, Inc., an Oregon corporation
Service Steel, Inc.
Attn: Edward G. Westerdahl, III
5555 N. Channel Ave., Building 2
Portland, OR 97217
(503) 243-6697
Use: steel fabrication, steel processing, warehouse and related office support services
Reference: NWMAR016802-NWMAR016900

28. Shipyard Management, Inc., a Nevada corporation
Shipyard Management Inc.
Attn: Robert Churchill, CEO
5555 N. Channel Ave., Building 2
Portland, OR 97217
Use: general office use
Reference: NWMAR016770-NWMAR016801

29. Surface Prep & Coatings, LLC, an Oregon limited liability company
Surface Prep & Coatings, LLC
Attn: Bruce Clark
2100 SE Lake Rd., Suite 1
Milwaukie, OR 97222

Use: storage and lay down
Reference: NWMAR016678-NWMAR016769

30. Swift Transportation Co., Inc., an Arizona corporation
Swift Transportation Co, Inc.
Attn: Gary Weinberger
Vice President Communications, Construction, Engineering & Property
P.O. Box 29243
Phoenix, AZ 85038
Use: outfitting trucks
Reference: NWMAR012941-NWMAR013005, NWMAR016595-NWMAR016677

31. Toscano LLC, an Oregon limited liability company
Toscano, LLC
Carl McLemore
4715-B N. Lagoon
Portland, OR 97219
Use: storing coffee beans and related products
Reference: NWMAR013007-NWMAR013020, NWMAR016576-NWMAR016594

32. Walashek Industrial & Marine Inc., a Washington corporation
Walashek Industrial & Marine Inc.
3236 16th Avenue SW
Seattle, WA 98134
(206) 624-2880
Alternative address:
Walashek Industrial & Marine Inc.
6410 S. 143rd Street
Tukwila, WA 98166
Use: operation of ship repair business and storage of related equipment and materials
Reference: NWMAR013028-NWMAR013056, NWMAR016540-NWMAR016575

33. Wholesale & Hearty Foods
Wholesale & Hearty Foods
975 SE Sandy Blvd., Suite 201
Portland, OR 97214
Use: storage of equipment
NWMAR013070-NWMAR013081

34. Willamette Jet Boat Excursions LLC, an Oregon limited liability company
Willamette Jet Boat Excursions LLC
Attn: Andrew J. Moos, General Manager
1945 SE Water Avenue
Portland, OR 97214
Use: storage of boats, boat trailers & related products and boat repair
Reference: NWMAR013086-NWMAR013117, NWMAR016406-NWMAR016539

d. Based on utility maps from 1981, utilities serving the Inland Property include sanitary sewers, storm sewers, water, natural gas, telephone, and electrical (see NWMAR107093-NWMAR107103). Some of these maps show the connections onto the Inland Property, while others only show the main trunk lines of each utility.

The layout of the storm and sanitary sewer system has changed through time. NWMAR103371 shows the layout in 1942 of the combined storm and sanitary sewer system at Swan Island prior to NWM's lease of the Inland Property. In 1954, shortly after NWM began leasing the Inland Property, the storm and sanitary sewer systems were separated (see discussion in Response 18 and at POP0082334-POP0082335 in the *Supplemental Preliminary Assessment, Swan Island Upland Facility*, "*SIUF Preliminary Assessment*").[17] NWMAR019437 shows the storm sewer layout in 1990, and NWMAR110426 shows the current configuration of the storm sewers. For a detailed description of the sanitary and storm sewers, see Response 18.

Additionally, one power substation was located on the Inland Property. See POP0082406 (from the *SIUF Preliminary Assessment*)[17] for a map of substations on Swan Island in 1942; see NWMAR146383 for a map of current and historical substations on Swan Island; and see NWMAR147372 for a map of transformers currently owned or operated by the Portland General Electric Company on Swan Island.

The Inland Property was also the location of the termini for several small railroad spurs as well as a portion of a railroad spur terminating at the Shipyard (see NWMAR107093-NWMAR107103). These railroad spurs were installed around 1942, when the Inland Property was converted from being a portion of the Swan Island Municipal Airport to being a support facility for World War II ship construction at the Shipyard (see maps from the *SIUF Preliminary Assessment* at POP0082399, POP0082400, POP0082406).[17]

The easements burdening the Inland Property as of 7 May 2008 are described in

[17] Submitted as an attachment to the Port's 104(e) Responses for the Swan Island Upland Facility & Berth 311 (POP0138925-POP0139014).

the Title Plant Records Report prepared by Land America Commercial Services and the attachments to this report (NWMAR107058-NWMAR107065).

e. The following entities were the major financiers and lenders of which Respondent is aware with respect to the Inland Property during NWM's and Respondent's periods of operation there:

First Interstate Bank of Oregon, NA
1300 S.W. Fifth Avenue
Portland, Oregon 97208

Willamette Savings & Loan Association,
a Division of American Savings &
Loan Association, a Utah Corporation
P.O. Box 5555
Portland, Oregon 97228
Attn: Vice President in Charge of Corporate Lending

Wells Fargo, NA
San Diego Regional Commercial Banking Office
101 West Broadway, Suite 300
San Diego, California 92101
Attn: Larry S. McDonald

f. See Responses 6(c) and 38.

g. See Responses 6(c) and 38.

h. See Responses 6(c) and 38.

i. Both the federal government, primarily through the U.S. Department of Defense, and the State of Oregon, primarily through the Port, have held substantial and pervasive proprietary interests with regard to the activity on the Inland Property. The Department of Defense, through its agents Schnitzer Realty Company and Schnitzer Investment Corp., owned the Inland Property from 1967 to 1981. The Port owned the Inland Property for 45 years from 1922 to 1967, and operated the Inland Property for at least 20 years from 1922 to 1942. From 1942 to 1950, the Department of Defense, through its agent Kaiser Company, Inc. ("Kaiser"), operated a World War II shipyard on Swan Island, which included the Inland Property. See Response 10(a).

7. Identify and describe any legal or equitable interest that you now have, or previously had in each Property. Include information regarding the nature of such interest; when, how, and from whom such interest was obtained; and when, how, and to whom such interest was conveyed, if applicable. In addition, submit copies of all instruments

evidencing the acquisition or conveyance of such interest (e.g., deeds, leases, purchase and sale agreements, partnership agreements, etc.).

Response 7: For descriptions of Respondent's interests in all properties within the Site, see Responses 5 and 10.

Inland Property. For copies of acquisition or conveyance instruments with respect to the Inland Property, see also the Title Plant Records Report prepared by Land America Commercial Services, dated 7 May 2008, and the attachments to this report (NWMAR107058-NWMAR107065), as specifically identified in Response 10(a).

For St. Johns Dry Dock, Respondent diligently searched its records, but discovered no lease or usage agreements between NWM and the Port.

8. If you are the current owner and/or current operator, did you acquire or operate the Property or any portion of the Property after the disposal or placement of hazardous substances, waste, or materials on, or at the Property? Describe all of the facts on which you base the answer to this question.

Response 8: Respondent is not the current owner or current operator of the Inland Property, Shipyard, or St. Johns Dry Dock.

9. At the time you acquired or operated the Property, did you know or have reason to know that any hazardous substance, waste, or material was disposed of on, or at the Property? Describe all investigations of the Property you undertook prior to acquiring the Property and all of the facts on which you base the answer to this question.

Response 9: Respondent engaged in a due diligence investigation of potential environmental conditions at the Inland Property prior to its acquisition of NWM as described in Response 74(c). As part of this investigation, Respondent produced the *1989 (Revised) Phase II Environmental Property Transfer Assessment Report. Northwest Marine Iron Works Portland, Oregon* (NWMAR032701-NWMAR032745). See Response 71 for a description of this assessment report. In addition, Respondent received the memorandum *Northwest Marine Ironworks Due Diligence Report* written in 1989 by Bruce Gair (NWMAR106635-NWMAR106682). This memorandum is discussed in Response 26. Lastly, the environmental compliance policies of Respondent at or around the time of its acquisition of NWM can be found in NWMAR055630-NWMAR055631.

No information was discovered indicating that NWM conducted any due diligence investigations for properties at the Shipyard and St. Johns Dry Dock that it leased from the Port.

10. Identify all prior owners that you are aware of for each Property identified in Response to Question 4 above. For each prior owner, further identify if known, and provide copies of any documents you may have regarding:

a. the dates of ownership;

b. all evidence showing that they controlled access to the Property; and

c. all evidence that a hazardous substance, pollutant, or contaminant, was released or threatened to be released at the Property during the period that they owned the Property.

Response 10: NWM and Respondent were associated with multiple properties within the boundaries of the Portland Harbor Superfund Site, each of which will be discussed separately below.

Inland Property

a. Respondent is providing the following fee title history of the Inland Property during the period of investigation.[18]

- Pre-1922 = Unknown.
- 01/03/1922 to 06/27/1967 = Port of Portland (NWMAR106998-NWMAR107004, POP0082309).[19]
- 06/27/1967 to 12/22/1981 = Schnitzer Realty Company and Schnitzer Investment Corp. (NWMAR095587-NWMAR095590, NWMAR106998-NWMAR107004).
- 12/22/1981 to 12/09/1982 = Northwest Marine Iron Works (NWMAR017853-NWMAR017856, NWMAR095587-NWMAR095590).
- 12/09/1982 to 12/10/1982 = William H. Zavin II (NWMAR004168-NWMAR004180, NWMAR017853-NWMAR017856, NWMAR017992-NWMAR017995).
- 12/10/1982 to 09/23/2002 = William H. Zavin II, as trustee of Bradavin Property Trust, leased property to NWM (NWMAR000644-NWMAR000646, NWMAR004168-NWMAR004180, NWMAR017992-NWMAR017995, NWMAR020941-NWMAR020945).
- 09/23/2002 to 10/27/2006 = The Marine Group LLC (NWMAR000644-NWMAR000646, NWMAR107066-NWMAR107068).
- 10/27/2006 to present = EWH, LLC (NWMAR107066-NWMAR107068).

Thus, BAE never owned the Inland Property, and Marine Group owned the Inland Property for a mere four years, from 23 September 2002, to 27 October 2006.

[18] See generally the Title Plant Records Report prepared by Land America Commercial Services, dated 7 May 2008, NWMAR107058-NWMAR107065 or references listed with dates in section 6(a).
[19] From the *SIUF Preliminary Assessment*, submitted as an attachment to the Port's 104(e) Responses for the Swan Island Upland Facility & Berth 311 (POP0138925-POP0139014).

Moreover, Marine Group's period of ownership occurred subsequently to the cessation of all ship repair operations on the Inland Property.

b. Respondent has no knowledge of previous owners' abilities and procedures to control access to the Inland Property.

c. Respondent has no evidence that there were any releases or spills at the Inland Property caused by NWM or Respondent. See Response 62.

Shipyard

a. Based on the Port's 104(e) Responses 4 and 10 for the Swan Island Upland Facility & Berth 311, the relevant property history of the Shipyard corresponds to that of operating unit (OU) 1 (POP0138926, POP0138934). The ownership history for the Shipyard is:
   - Pre-1922 = Swan Island Real Estate Company.
   - 1922 to 2000 = Port of Portland.
   - 2000 to present = Shipyard Commerce Center LLC.

b. Respondent has no knowledge of historical owners' abilities and procedures to control access to the Shipyard.

c. The Port, as owner of the Shipyard during the majority of NWM's and Respondent's operational history, has provided records in its 104(e) Responses for the Swan Island Upland Facility & Berth 311 of 191 known release events at the Shipyard between 16 January 1943 and 9 November 1992, when Respondent ceased active ship repair operations at all properties (see table at POP0138895-POP0138924).[20] This table describes the date, source of material, location, responsible party, source of information, and a description of the event. However, given the limited information available from source documentation, numerous data gaps exist in this record, sometimes including the material spilled, the quantity, or the responsible party.

   Of these spills and other release events, none were attributable to Respondent and 23 (12%) were attributable to NWM. The Port was responsible for 46 (24%) of these documented release events. The vast majority of these Port-related release events were leaks of transformer oils, which are noteworthy as transformer oils are a major potential source of contamination by polychlorinated biphenyls ("PCBs") (see Response 47 for more information about PCBs). See POP0138895-POP0138924 for information specific to the aforementioned release events.[20]

   Furthermore, these release events tabulated by the Port do not include ongoing discharges from the Shipyard's Ballast Water Treatment Plant ("BWTP") and the Shipyard-wide storm sewer system directly into the Willamette River. Both of

these Shipyard facilities were constructed, operated, managed, and permitted by the Port (POP0138938-POP0138941). Additionally, the BWTP has multiple permit violations over its operational history (e.g., CAS0023894-CAS0023963, CAS0023272-CAS0023290, CAS023727-CAS0023734, POP0102456-POP0102461, POP0102481, POP0110703-POP0110707, POP0113337-POP0113352),[20] while the storm sewer system at the Shipyard has been targeted by the Oregon Department of Environmental Quality (ODEQ) as needing upland source control measures (POP0138953-POP0138954).

St. Johns Dry Dock

a. Based on the *Site History Report* (POP0133917-POP0134137) and the *RI Addendum* (POP0132695-POP0132875),[21] the following histories of ownership for the three taxlots (39, 99, and 124) where St. Johns Dry Dock was located are as follows. (For a detailed description of these taxlots, see Response 4.) Where the two documents differ on dates, the more recent Supplement Preliminary Assessment report is used.

Taxlot 39

- Pre-1903 = Andy Anderson, and "Hartman, Thompson, and Powers" (POP0132766).[21]
- 05/23/1903 to 1953 = the Port.
- 1953 to 1981= Harold Scristmier.
- 1981 to 1996 = City of Portland, Portland Development Commission.
- 1996 = the Trust for Public Land acquired the property and subsequently sold the property to Metro.
- 1996 to present = Metro.

Taxlot 99

- Pre-1903 = "Hartman, Thompson, and Powers." (POP0132766).[21]
- 05/23/1903 to 1950 = the Port.
- 1950 to 1964 = Portland Manufacturing Company.

[20] Port documents submitted as attachments to the Port's 104(e) Responses for the Swan Island Upland Facility & Berth 311 (POP0138925-POP0139014). Cascade General documents submitted as attachments to Cascade General's 104(e) Responses (CAS0000029-CAS0000060, CAS0030350-CAS0030376).
[21] Port documents submitted as part of the Port's 104(e) Responses for Willamette Cove (POP0139303-POP0139352).

- 1964 to 1977 = Portland Lumber Mills, Inc. (and through a later merger, Brand-S Corporation).
- 1977 to 1979 = Unknown.
- 1979 to 1996 = City of Portland, Portland Development Commission.
- 1996 = the Trust for Public Land acquired the property and subsequently sold the property to Metro.
- 1996 to present =Metro.

Taxlot 124

- Pre-1903 = "Hartman, Thompson, and Powers." (POP0132766).[21]
- 05/23/1903 to 1950 = the Port.
- 1950 to 1964 = Portland Manufacturing Company.
- 1964 to 1977 = Portland Lumber Mills, Inc. (and through a later merger, Brand-S Corporation).
- 1977 to 1978 = Menasha Corporation.
- 1978 to 1979 = Michael Chaney and Fibron.
- 1979 to 1996 = City of Portland, Portland Development Commission.
- 1996 = the Trust for Public Land acquired the property and subsequently sold the property to Metro.
- 1996 to present = Metro.

b. Respondent has no knowledge of historical owners' abilities and procedures to control access to St. Johns Dry Dock.

c. Information related to specific release events is limited but several events were identified: First, in July 1924, the S.S. Sumanco fractured and released "extensive amounts" of oil to the river (POP0132713).[22] Second, Port docking logs note that in December 1929, the "upper end [of the] south tower caved in," which appears to have caused the docking of vessels to be suspended until February 1930 (POP0131376).[22] Third, these docking logs also note that the Russian vessel S/S Skala "rammed and cut pier #2 in half" on 15 October 1942; however, no release

[22] Port documents submitted as part of the Port's 104(e) Responses for Willamette Cove (POP0139303-POP0139352).

of material into the river was recorded (POP0131561).[22] Fourth, during March 1943, overcrowding of the St. Johns Dry Dock resulted in post-work cleaning being neglected (POP0132715).[22] Fifth, a July 1943 report cited fuel oil being released by vessels at dry dock, with fault attributed to negligence or errors on vessels built by Kaiser (POP0130102).[22] Sixth, the S.S. Ilich (aka S.S. Illyitch, S.S. Illich) capsized at berth in 24 June 1944 (POP0131620).[22] Documents suggest that NWM was repairing the S.S. Illich when it capsized, but no releases were documented (POP0132716, NWMAR147871, NWMAR147872).[22] Lastly, the Port cites a 1951 incident when the Tanker Oleum caused damage to infrastructure at St. Johns Dry Dock and released oil (POP0139331).

11. Identify all prior operators of the Property, including lessors, you are aware of for each Property identified in response to Question 4 above. For each such operator, further identify if known, and provide copies of any documents you may have regarding:

a. the dates of operation;

b. the nature of prior operations at the Property;

c. all evidence that they controlled access to the Property; and

d. all evidence that a hazardous substance, pollutant, or contaminant was released or threatened to be released at or from the Property during the period that they were operating the Property.

Response 11: NWM and Respondent were associated with multiple properties within the boundaries of the Portland Harbor Superfund Site, each of which will be discussed separately below. As NWM's and Respondent's uses of these properties were largely characterized by sharing space with multiple tenants, including other leasing and/or subleasing parties, this response discusses contemporaneous operators in addition to prior operators.

Inland Property

a. See Responses 5, 6 and 10 for dates of operations of prior operators at the Inland Property.

b. See Response 6 for a description of the operations of all companies subleasing space at the Inland Property from Respondent. Respondent has no knowledge of the operations of prior operators of the Inland Property.

c. Respondent has no knowledge of previous operators' abilities and procedures to control access to the Inland Property.

d. Respondent has no evidence that there were any releases or spills at the Inland Property caused by NWM or other property owners who were also operators. See Responses 10(c) and 62. Two former tenants of the Inland Property while Respondent owned the property had environmental violations. A.G.G. Enterprises, Inc. stored unspecified material in a manner that potentially contaminated groundwater (NWMAR015641, NWMAR015642-NWMAR015643) and C.L. Fabrications, Inc. stored hazardous and potentially explosive chemicals on-site (NWMAR016054).

Shipyard

a. The owner and leaser of the Shipyard was the Port. The Port identified 365 parties other than Respondent that operated at the Shipyard from between 1928 to the present (POP0138884-POP0138894).[23] See POP0138884-POP0138894 for the dates of operation for these 365 other parties.

b. Respondent has relied on information provided by the Port to identify the operations of other parties present at the Shipyard (POP0138884-POP0138894).[23] Former and concurrent contractors and subcontractors conducted activities including construction, conversion, scrapping, and repair of vessels. In addition, the Port engaged in substantial demolition, renovation, and construction activities for the various facilities at the common use Shipyard. Generally, parties operating at the Shipyard concurrently with NWM and Respondent engaged in ship repair-related activities, with many operators using the specific buildings and facilities at the Shipyard for only a few months at a time (see, for example, Respondent's operational history of the Shipyard, NWMAR142739-NWMAR142740). Additionally, much of the open-air space at the Shipyard was used in common by the Port and its many tenants, contractors and subcontractors due to the intermingled nature of the various facilities.

c. Respondent has no knowledge of Shipyard operators' abilities and procedures to control access to the Shipyard.

d. Additionally, the Port, as owner of the Shipyard during the majority of operational history, has provided records of 191 known release events at the Shipyard between 16 January 1943 and 9 November 1992, when Respondent ceased active ship repair operations at all properties (POP0138895-POP0138924).[23] Of these spills and other release events, none were caused by Respondent and 23 (12%) were caused by NWM. Other operators at the Shipyard accounted for 69 (36%) of documented spills and releases at the Shipyard, while 53 (28%) had no responsible party identified in the documentation. The Port accounted for 46 release events (24%). The nature of these releases vary, but include direct releases of oils, fuels, and paints, sandblasting materials entering waterways, and unauthorized dumping of waste materials and pesticides into the Willamette River. See POP0138895-POP0138924 for information specific to the aforementioned release events.[23]

These release events tabulated by the Port do not include ongoing discharges from the BWTP and the site-wide storm sewer system directly into the Willamette River. Both of these Shipyard features were constructed, managed, and permitted by the Port (POP0138938-POP0138941). Additionally, the BWTP has multiple permit violations over its operational history (e.g., CAS0023894-CAS0023963,

[23] Port documents submitted as attachments to the Port's 104(e) Responses for the Swan Island Upland Facility & Berth 311 (POP0138925-POP0139014).

CAS0023272-CAS0023290, CAS023727-CAS0023734, POP0102456-POP0102461, POP0102481, POP0110703-POP0110707, POP0113337-POP0113352)[24] while the storm sewer at the Shipyard has been targeted by ODEQ for upland source control measures (POP0138953-POP0138954).

St. Johns Dry Dock

a. The owner and leaser of St. Johns Dry Dock was the Port from 1903-1953 (see Response 10(a)). The Port identified 105 parties that operated on the parcel of land where St. Johns Dry Dock was located (see POP0139310-POP0139322). See POP0139310-POP0139322 for the dates of operation for these 105 parties. NWM is known to have been present at St. Johns Dry Dock for 10 of the 50 years the dry dock was operational, from 1943-1953 (see Response 5).

b. Respondent has relied on information provided by the Port to identify the operations of other parties present at St. Johns Dry Dock (POP0139310-POP0139322). Generally, parties at St. Johns Dry Dock engaged in ship repair and related activities.

c. Respondent has no knowledge of previous operators' abilities and procedures to control access to St. Johns Dry Dock.

d. See Response 10(c).

12. If not included in response to any of the previous questions, please describe the purpose and duration of each aquatic lands lease Respondent or the operator of Respondent's Property(ies) ever obtained from the State of Oregon and provide a copy of each application for and aquatic lands lease obtained.

Response 12: Neither NWM nor Respondent obtained leases or subleases for any aquatic lands from the State of Oregon. The Port owned 83.9 acres of submerged lands in the vicinity of the Shipyard and leased an additional 21.1 acres of submerged lands from the Oregon Department of State Lands (POP0138927-POP0138928).

Section 3.0 Description of Each Property

13. Provide the following information about each Property identified in response to Question 4:

a. property boundaries, including a written legal description;

b. location of underground utilities (telephone, electrical, sewer, water main, etc.);

c. location of all underground pipelines whether or not owned, controlled or operated by you;

[24] Port documents submitted as attachments to the Port's 104(e) Responses for the Swan Island Upland Facility & Berth 311 (POP0138925-POP0139014). Cascade General documents submitted as attachments to Cascade General's 104(e) Responses (CAS0000029-CAS0000060, CAS0030350-CAS0030376).

d. surface structures (e.g., buildings, tanks, pipelines, etc.);
e. over-water structures (e.g., piers, docks, cranes, etc.);
f. dry wells;
g. treatment or control devices (e.g., surface water, air, groundwater, Resource Conservation and Recovery Act (RCRA), Transfer, Storage, or Disposal (TSD), etc.);
h. groundwater wells, including drilling logs;
i. storm water drainage system, and sanitary sewer system, past and present, including septic tank(s) and where, when and how such systems are emptied and maintained;
j. subsurface disposal field(s), Underground Injection Control (UIC) wells, and other underground structures (e.g., underground storage tanks (USTs); and where they are located, if they are still used, and how they were closed;
k. any and all major additions, demolitions or changes on, under or about the Property, its physical structures or to the property itself (e.g., stormwater drainage, excavation work); and any planned additions, demolitions or other changes to the Property;
***l.* all maps and drawings of the Property in your possession; and**
m. all aerial photographs of the Property in your possession.

Response 13: Respondent was associated with multiple properties within the boundaries of the Portland Harbor Superfund Site, each of which will be discussed separately below.

Inland Property

a. See the following documents: Survey No. 30620 filed 21 November 1969, in the Multnomah County Survey Records (NWMAR107089); Survey No. 54377 filed 1 February 1995, in the Multnomah County Survey Records (NWMAR107090-NWMAR107091); Survey No. 22413 last revised 4 January 1966, in the Multnomah County Survey Records (NWMAR107092); and the Title Plant Records Report prepared by Land America Commercial Services, dated 7 May 2008 (NWMAR107058-NWMAR107065).

b. See the multipage line drawing entitled *Portland Ship Repair Yard Master Utilities* by the Port of Portland, dated April 1981, as Drawing No. YA 81-1, NWMAR107093-NWMAR107103. In addition, Respondent provided with the Prior Responses the following drawings in hard copy:

Date	Description	Prepared By	Bates No.
07/25/1997	Portland Shipyard Site Map	Cascade General	NWMAR106626
07/17/1997	Hazardous Waste Storage and Emergency Response Equipment	Cascade General	NWMAR106627
07/17/1997	Portland Shipyard Stormwater System	Cascade General	NWMAR106628
05/04/1940	Underground Piping General Layout West Sector	Kaiser Company, Inc.	NWMAR106629
06/17/1942	Manhole Over Fuel Tank – NE Corner Plate Shop	Kaiser Company, Inc.	NWMAR106630

Date	Description	Prepared By	Bates No.
07/24/1997	Portland Shipyard Ballast Water Treatment Plant	Cascade General	NWMAR106631
10/03/1980	Office/Warehouse Facility: 5851 North Lagoon, Swan Island	Len Krombein	NWMAR106632
03/08/1982	Northwest Marine Ironworks Shop & Office Renovation and Relocation	Annand, Boone & Associates	NWMAR106633

c. See Response 13(b).

d. See the following documents: the brochure entitled *You Expect… We Deliver, Portland Ship Yard* by the Port of Portland with a notation of 1/92 containing an aerial photograph of and other information regarding the Swan Island Industrial Park (NWMAR107104-NWMAR107123); and the line drawing entitled *Figure 2, Site Map* contained in the *Remedial Investigation/Feasibility Study Work Plan ("RI/FS Work Plan")* for the Portland Shipyard by Bridgewater Group, Inc., dated 28 January 2000 (CAS0051929).[25] See also Response 13(b).

e. The Inland Property is landlocked and did not contain any over-water structures.

f. During Respondent's period of control, the Inland Property did not contain any dry wells.

g. During Respondent's period of control, the Inland Property did not contain any treatment or control devices.

h. Three environmental reports pertinent to the Inland Property contain groundwater data and/or drilling logs. These reports are: *(Revised) Phase II Environmental Property Transfer Assessment Report, Northwest Marine Iron Works Portland, Oregon*, 31 May 1989 (NWMAR032701-NWMAR032745); *Phase I Environmental Site Assessment Report, Northwest Marine Iron Works Portland, Oregon*, 2 June 1998 (NWMAR021764-NWMAR021853); and *Phase Two Environmental Site Assessment Report, 5815 and 5851 N. Lagoon Avenue Portland, Oregon*, September 2006 (NWMAR000584-NWMAR000606). See Response 65 for a detailed description of groundwater data.

i. See the line drawing entitled *Swan Island Shipyard General Plan Storm Sewer System* by John W. Cunningham & Associates, dated 9 June 1942, provided as NWMAR106625; see also the line drawing entitled *Portland Shipyard Stormwater System* by Cascade General, dated 17 July 1997, provided with the Prior Responses in hard copy as NWMAR106628.

[25] Submitted as attachments to Cascade General's 104(e) Responses (CAS0000029-CAS0000060, CAS0030350-CAS0030376).

j. During Respondent's period of control, the Inland Property did not contain subsurface disposal fields, underground injection control wells, or other underground structures, except for utility facilities including without limitation sanitary and storm sewer systems.

k. See Responses 13(b) and 13(*l*).

l. See the maps and drawings provided in Responses 13(a), 13(b), 13(d), and 13(i). Respondent also has provided maps and drawings in electronic format in the database. Respondent has hard copies of the following additional maps and drawings that it believes are not responsive to the Information Request, but Respondent will retain them and make them available to EPA upon request:

Date	**Description**	**Prepared By**
07/17/1997	Portland Shipyard Evacuation Map	Cascade General
04/08/1942	Swan Island Shipyard General Plan Fire Protection System	Kaiser Company
12/09/1977	General Plant Arrangement & Site Plan	Woodbury & Company
11/05/1965	SW ¼, Section 17, Township 1 North, Range 1 East, W.M.	Vaughn Cochran
10/03/1980	Office/Warehouse Facility	Len Krombein
03/12/1980	Metra Steel New Storage Facility	Tice Electric Co.
08/25/1967	Remodel & Addition: Woodbury & Co	Schnitzer Bros.
05/1967 to 09/1967	Woodbury Expansion	Werner S. Storch & Associates, Inc.
12/17/1943	Plate Shop Craneway Extension	Kaiser Company, Inc.
04/07/1942	Plate Shop Elevations	Kaiser Company, Inc.
05/23/1948	Plate Shop Roof Drain Piping	Kaiser Company, Inc.
04/07/1942	Plate Shop Details	Wolff & Phillips Architects
06/01/1942	Plate Shop & Assembly Building Additional Steel for Extension of Craneways	Kaiser Company, Inc.
04/07/1942	Plate Shop Floor Plan	Kaiser Company, Inc.
03/12/1968	Building Addition for Woodbury & Co.: Plot Plan	Zarosinski Engineers
10/16/1968	Bldg Expansion for Woodbury & Co: Warehouse Electrical Service & Modifications	Downing & Ries Engineers
04/08/1942	Plate Shop Swan Island Yard	Clinton Bridge Works
05/02/1968	Bldg Expansion for Woodbury Co.: Piping Diagrams & Air Handling Equipment	Consulting Engineers, Inc.
Undated	Bldg Expansion for Woodbury Co.: Partial Floor Plans	Zarosinski Engineers, Inc.
07/17/1968	Bldg Expansion for Woodbury Co.: Piping Diagrams & Air Handling Equipment	Consulting Engineers, Inc.
07/17/1968	Bldg Expansion for Woodbury Co.: Schedules & Plumbing	Consulting Engineers, Inc.

Date	Description	Prepared By
Undated	Bldg Expansion for Woodbury Co.: 2nd Story Addition to Existing Offices	Zarosinski Engineers, Inc.
10/29/1968	Woodbury & Co. Planting Plan & Irrigation Plan	Huntington & Roth
12/09/1977	Woodbury & Co. General Plant Arrangement & Site Plan	?
11/10/1969	Woodbury & Co. Exhibit Plat	Port of Portland
09/10/1968	Bldg Expansion for Woodbury Co.: Site Plan	Zarosinski Engineers, Inc.
07/16/1968	Toilet & Lunchroom Facilities - Swan Island SRY Plumbing & Table Details	Port of Portland
03/16/1972	Woodbury Storage Site Plan	Zarosinski-Tatone Engineers, Inc.
11/15/1968	Bldg Expansion for Woodbury Co.: Office Expansion	Zarosinski Engineers, Inc.
03/31/1969	Bldg Expansion for Woodbury Co.: Site Plan	Zarosinski Engineers, Inc.
05/02/1968	Bldg Expansion for Woodbury Co.: Shop Drawings Erection Plan	Zarosinski Engineers, Inc.
06/17/1968	Bldg Expansion for Woodbury Co.: Site Plan	Zarosinski Engineers, Inc.
06/17/1968	Office Expansion for Woodbury Co.: Floor Plans	Zarosinski Engineers, Inc.
06/17/1968	Office Expansion for Woodbury Co.: Elevations	Zarosinski Engineers, Inc.
06/17/1968	Office Expansion for Woodbury Co.: Roof Framing Plan, Foundation Plan, Second Floor Framing Plan	Zarosinski Engineers, Inc.
06/17/1968	Office Expansion for Woodbury Co.: Sections Details and Partial Struct. Elevations	Zarosinski Engineers, Inc.
Undated	Office Expansion for Woodbury Co.: Partial Floor Plans	Zarosinski Engineers, Inc.
Undated	Office Expansion for Woodbury Co.: Refrigeration Diagram	Consulting Engineers, Inc.
Undated	Office Expansion for Woodbury Co.: First & Second Floor Supply Ductwork	Consulting Engineers, Inc.
Undated	Office Expansion for Woodbury Co.: Lighting Plan	Downing & Ries Engineers, Inc.
Undated	Office Expansion for Woodbury Co.: Power Plan	Downing & Ries Engineers, Inc.
Undated	Office Expansion for Woodbury & Co.: Alternate Lighting Plan	Downing & Ries Engineers, Inc.
03/12/1968	Bldg Expansion for Woodbury Co.: Site Plan	Zarosinski Engineers, Inc.
03/12/1968	Bldg Expansion for Woodbury Co.: Elevation	Zarosinski Engineers, Inc.

Date	Description	Prepared By
03/12/1968	Bldg Expansion for Woodbury Co.: Roof Plan	Zarosinski Engineers, Inc.
03/12/1968	Bldg Expansion for Woodbury Co.: Roof Framing Plan & Details	Zarosinski Engineers, Inc.
03/28/1968	Bldg Expansion for Woodbury Co.: Foundation Plan & Details	Zarosinski Engineers, Inc.
03/12/1968	Bldg Expansion for Woodbury Co.: Cross Sections and Stick Elevations	Zarosinski Engineers, Inc.
03/12/1968	Bldg Expansion for Woodbury Co.: Framing Details	Zarosinski Engineers, Inc.
03/12/1968	Bldg Expansion for Woodbury Co.: Bracing & Misc Details	Zarosinski Engineers, Inc.
03/12/1968	Bldg Expansion for Woodbury Co.: Lateral Bracing	Zarosinski Engineers, Inc.
03/12/1968	Bldg Expansion for Woodbury Co.: Plot Plan	Zarosinski Engineers, Inc.
07/24/1942	Assembly Bldg Roof Drain Piping	Kaiser Company, Inc.
05/29/1942	Assembly Bldg Additional Footing Area	Kaiser Company, Inc.
05/30/1942	Assembly Bldg Increased Bearing Area for Footings	Kaiser Company, Inc.
06/02/1942	Plate Shop & Assembly Bldg Layout of Footings	Kaiser Company, Inc.
05/25/1942	Assembly Bldg Floor Slab West End	Kaiser Company, Inc.
05/25/1942	Assembly Bldg Floor Slab East End	Kaiser Company, Inc.
05/23/1942	Assembly Bldg Piping Plan	Kaiser Company, Inc.
05/14/1942	Assembly Platform for Assembly Bldg	Kaiser Company, Inc.
06/02/1942	Assembly Bldg Additional Footing Area	Kaiser Company, Inc.
07/11/1944	Lighting: Assembly Bldg Addition	Kaiser Company, Inc.
06/18/1942	Power Layout Assembly Bldg	Kaiser Company, Inc.
09/10/1942	Assembly Bldg Steel “A” Frames for Row “A-A”	Kaiser Company, Inc.

m. See brochure entitled *You Expect… We Deliver, Portland Ship Yard* by the Port of Portland with a notation of 1/92 containing an aerial photograph of and other information regarding the Swan Island Industrial Park (NWMAR107104-NWMAR107123).

<u>Shipyard</u>

As the Port owned the Shipyard, these answers are all taken from the Port’s 104(e) Responses for the Swan Island Upland Facility & Berth 311 (POP0138925-POP0139014) unless otherwise stated.

a. See the Port’s 104(e) Response 13 for the Swan Island Upland Facility & Berth 311 at POP0138936.

b. The Shipyard was serviced by the City of Portland (water and sewer), Northwest Natural (natural gas), Portland General Electric (electricity), and Pacific Northwest Bell Telephone (telephone).

c. See Response 18.

d. Structures at the Shipyard include 20 buildings, six 24,000-barrel aboveground storage tanks, four cookers, six oil/water separators, four 2,000-barrel tanks, and one 100,000-gallon holding tank.

e. Two dry docks and 12 berths exist at the Shipyard.

f. The Port identified one dry well southwest of Building #58. See the Port's 104(e) Response 41 for the Swan Island Upland Facility & Berth 311 at POP0138964-POP0138965.

g. The Port identified the ballast water treatment plant ("BWTP"), two baghouses, and one vapor combustion unit in operation at the Shipyard. As part of operating these facilities, the Port maintained National Pollutant Discharge Elimination System ("NPDES," NWMAR119037-NWMAR119341, POP0138938-POP0138939, POP0138965), Municipal Separate Storm Sewer System Discharge (POP0138953) and Air Contamination Discharge (POP0138974) permits. See Reponses 27 for a more detailed discussion of the BWTP.

h. The Port identified 11 groundwater monitoring wells described in the *2002 Phase 1B and II, Soil and Groundwater Sample Results, Portland Shipyard Remedial Investigation* (POP0079391-POP0079669).[26]

i. See Responses 18 and 19.

j. The Port identified 16 underground storage tanks at the Shipyard.

k. See the Port's 104(e) Response 13(k) for the Swan Island Upland Facility & Berth 311 at POP0138945-POP0138948.

l. See maps and drawings provided by the Port at POP0063723-POP0068010.

m. See aerial photography provided by the Port at POP0068011-POP0068091.

<u>St. Johns Dry Dock</u>

As the Port owned St. Johns Dry Dock, these answers are all taken from the Port's 104(e) Responses for Willamette Cove (POP0139303-POP0139352) unless otherwise stated.

a. See the Port's 104(e) Response 5 for Willamette Cove at POP0139305.

b. St. Johns Dry Dock was served by city water, sewer, electrical power, and telephone services.

[26] Submitted as part of the Port's 104(e) Responses for the Swan Island Upland Facility & Berth 311 (POP0138925-POP0139014).

c. See Response 18.

d. Structures at St. Johns Dry Dock during NWM's operations there include: storage buildings; blacksmith, pipe, woodworking, and machine shops; restaurant; automobile garage; pattern loft; and railroad spur.

e. Two dry docks and three wharfs existed at St. Johns Dry Dock.

f. None.

g. None.

h. Seven groundwater monitoring wells were installed as part of the *Remedial Investigation, Willamette Cove, Portland, Oregon* (POP0133781-POP0133916).[27]

i. See Responses 18 and 19.

j. None.

k. See Response 20.

l. The Port's 104(e) Response 13(l) for Willamette Cove lists 34 maps and drawings of St. Johns Dry Dock at POP0139325-POP0139326.

m. The Port has provided 17 aerial photos of St. Johns Dry Dock at POP0131947-POP0131964.[27]

14. For Properties adjacent to the Willamette River, provide specific information describing the river-ward boundary of private ownership and where state aquatic lands and/or state-management jurisdiction begins. Provide a map that delineates the river-ward boundary of each Property.

Response 14: Respondent was associated with multiple properties within the boundaries of the Portland Harbor Superfund Site, each of which will be discussed separately below.

Inland Property
The Inland Property is not adjacent to the Willamette River.

Shipyard
As the Port owned the Shipyard, Respondent defers to the Port's description of the river-ward property boundaries discussed in the Port's 104(e) Response 14 for the Swan Island Upland Facility & Berth 311 (POP0138948).

[27] Submitted as part of the Port's 104(e) Responses for Willamette Cove (POP0139303-POP0139352).

St. Johns Dry Dock
According to the Port's 104(e) Response 14 for Willamette Cove: "The State of Oregon owned the filled riverfront of this property [the location of St. Johns Dry Dock] until in 1990 mutual quit claim deed results in PDC [Portland Development Commission] acquiring the filled land to the line of ordinary low water. The Port is unable to supply a map as it is not currently able to recreate the property line to which the Port owned during the relevant period from 1903 to 1950 and 1903 to 1953." (POP0139328). Respondent has no additional knowledge regarding the river-ward boundary of St. Johns Dry Dock.

15. For each Property, provide all reports, information or data you have related to soil, water (ground and surface), or air quality and geology/hydrogeology at and about each Property. Provide copies of all documents containing such data and information, including both past and current aerial photographs as well as documents containing analysis or interpretation of such data.

Response 15: Respondent was associated with multiple properties within the boundaries of the Portland Harbor Superfund Site, each of which will be discussed separately below.

Inland Property
Respondent produced in the electronic database all documents, reports, information or data it has related to soil, water (ground and surface), or air quality and geology/hydrogeology at and about the Inland Property and Shipyard, including documents containing analysis or interpretation of such data and past and current aerial photographs, to the extent it has such documents and photographs. In particular, see the following documents (in chronological order):

- *(Revised) Phase II Environmental Property Transfer Assessment Report. Northwest Marine Iron Works Portland, Oregon.* Prepared for Southwest Marine by Dames & Moore. 31 May 1989. (NWMAR032701-NWMAR032745);
- *Phase I Environmental Site Assessment Report. Northwest Marine Iron Works Portland, Oregon.* Prepared for Greenwich Capital Markets Inc. by Dames & Moore. 2 June 1998 (NWMAR021764-NWMAR021853);
- *Phase Two Environmental Investigation Report. 5555 N. Channel Avenue. Portland, Oregon.* Prepared for Carillon Advisers, Inc. c/o National Mortgage Company and Mr. William H. Zavin II by PBS Environmental. October 1998. (NWMAR021717-NWMAR021763);
- *Phase Two Environmental Site Assessment Report.* 5815 and 5851 N. Lagoon Avenue Portland, Oregon. Prepared for Service Steel by PBS Environmental. September 2006 (NWMAR010026-NWMAR010048);
- *Portland Harbor RI/FS, Remedial Investigation Report*. Prepared for The Lower Willamette Group by Integral Consulting Inc., Windward Environmental LLC, Kennedy/Jenks Consultants, and Anchor QEA, LLC. 29 August 2011. (LWG-PCI0049299-LWG-PCI0080377); and
- *Portland Harbor RI/FS, Feasibility Study Report*. Prepared for The Lower Willamette Group by Anchor QEA, LLC, Windward Environmental LLC, Kennedy/Jenks Consultants, and Integral Consulting Inc. 29 August 2011. (LWG-PCI0049299-LWG-PCI0080377).

Shipyard

Respondent produced in the electronic database all documents, reports, information or data it has related to soil, water (ground and surface), or air quality and geology/hydrogeology at and about the Shipyard, including documents containing analysis or interpretation of such data and past and current aerial photographs, to the extent it has such documents and photographs. Listed below are some of the general environmental surveys of the Shipyard (in chronological order). For a full list of environmental sampling, see the Port's 104(e) Response 71 for the Swan Island Upland Facility & Berth 311 at POP0138993-POP0139009.

- *(Revised) Phase II Environmental Property Transfer Assessment Report. Northwest Marine Iron Works Portland, Oregon.* Prepared for Southwest Marine by Dames & Moore. 31 May 1989. (NWMAR032701-NWMAR032745);
- *Report on Arco Alaska Inc. Module Fabrication Facility Soils Investigation*. Prepared for Port of Portland by Hahn and Associates, Inc. 30 March 1990. (POP0078254-POP0078256);[28]
- *Subsurface Investigation, Port of Portland, Ship Repair Yard, Between Buildings #58 and #64, Portland, Oregon.* Prepared for Port of Portland by Hahn and Associates, Inc. 13 February 1991. (POP0078553-POP0078618);[28]
- *Soil Sampling at Ballast Water Treatment Facility, Ship Repair Yard.* Memorandum. Prepared for Port of Portland by Hahn and Associates, Inc. 31 May 1991. (POP0103587-POP0103590);[28]
- *Final Report, Fourth Quarter Groundwater Monitoring Sampling and Analysis, Port of Portland, Ship Repair Yard, Between Buildings #58 and #64, Portland, Oregon*. Prepared for Port of Portland by Hahn and Associates, Inc. 6 Dec 1991. (POP0078619-POP0078653);[28]
- *Level II Environmental Assessment, Soils Investigation, Portland Ship Yard, 5555 North Channel Avenue, Former Norvac Waste Storage Areas, Portland, Oregon*. Prepared for Port of Portland by Hahn and Associates, Inc. 30 October 1992. (POP0078845-POP0078883);[28]
- *Level II Environmental Assessment, Soils Investigation, Portland Ship Yard, Ballast Water Treatment Plant, Portland, Oregon*. Prepared for Port of Portland by Hahn and Associates, Inc. 28 February 1992. (POP0078812-POP0078844);[28]
- *Polychlorinated Biphenyl Inventory and Disposal Recommendations, Port of Portland, Portland Ship Yard, Building #60, Electrical Substation, Portland, Oregon*. Prepared for Port of Portland by Hahn and Associates, Inc. 28 February 1992. (POP0111728-POP0111833);[28]
- *PCB Sampling Verification Results, Electrical Substation, Portland Ship Yard, Port of Portland, Portland, Oregon*. Memorandum. Prepared for Port of Portland by Hahn and Associates, Inc. 9 April 1992. (POP0115596-POP0115600);[28]
- *Phase II Verification Sampling and Analytical Activities, Electrical Substation, Portland Ship Yard, Port of Portland, Portland, Oregon*. Prepared for Port of Portland by Hahn and Associates, Inc. 26 June 1992. (POP0094304-POP0094331);[28]
- *Investigation and Excavation of Contaminated Soils, North of Building No. 50, Portland Ship Yard, 5555 N. Channel Avenue, Portland, Oregon.* Prepared for Port of Portland by

[28] Port documents submitted as attachments to the Port's 104(e) Responses for the Swan Island Upland Facility & Berth 311 (POP0138925-POP0139014).

Hahn and Associates, Inc. 9 November 1992. (POP0078884-POP0078927);[28]

- *Soil Investigation, Tank 10 and Pipe Areas, Ballast Water Treatment Plant, Portland Ship Repair Yard, Port of Portland, 5555 Channel Blvd., Portland, Oregon.* Prepared for Port of Portland by Hahn and Associates, Inc. 28 May 1993. (POP0092479-POP0092545);[28]
- *Soil Investigation, Ballast Water Treatment Plant, Portland Ship Repair Yard, Port of Portland, Portland, Oregon*. Memorandum. Prepared for Port of Portland by Hahn and Associates, Inc. 13 July 1993. (POP0078700-POP0078710);[28]
- *Report of Findings of Heating Oil Release Investigation at the Central Utility Building at the Port of Portland Ship Repair Yard, Portland, Oregon*. Memorandum, Prepared for Port of Portland by Hahn and Associates, Inc. 22 July 1993. (POP0093047-POP0093060);[28]
- *Assessment of Air Toxics Impacts from the Portland Shipyard on Swan Island, Portland, Oregon*. Prepared for Port of Portland and the Swan Island Task Force by EMCON and Parsons Engineering Science, Inc. 1997. (POP0106113-POP0106336);[28]
- *Phase I Environmental Site Assessment Report. Northwest Marine Iron Works Portland, Oregon.* Prepared for Greenwich Capital Markets Inc. by Dames & Moore. 2 June 1998 (NWMAR021764-NWMAR021853);
- *Phase Two Environmental Investigation Report. 5555 N. Channel Avenue. Portland, Oregon.* Prepared for Carillon Advisers, Inc. c/o National Mortgage Company and Mr. William H. Zavin II by PBS Environmental. October 1998. (NWMAR021717-NWMAR021763);
- *Portland Shipyard, Sediment Investigation, Data Report.* Prepared for Port of Portland and Cascade General, Inc. by Striplin Environmental Associates, Inc. and Bridgewater Group, Inc. 9 November 1998. (NWMAR147896-NWMAR148238);
- *Remedial Investigation/Feasibility Study Work Plan for the Portland Shipyard.* Prepared for Port of Portland by Bridgewater Group, Inc., Hahn and Associates, and Striplin Environmental Associates. 2 November 2000. (POP0079794-POP0080670);[28]
- *Phase 1B, Work Plan Addendum, Portland Shipyard Remedial Investigation.* Prepared for Port of Portland by Bridgewater Group, Inc. 13 July 2001. (POP0079670-POP0079793);[28]
- *Phase 1B and II, Soil and Groundwater Sample Results, Portland Shipyard Remedial Investigation.* Prepared for Port of Portland by Bridgewater Group, Inc. 25 June, 2002. (POP0079391-POP0079669);[28]
- *Phase II Third and Fourth Quarter Groundwater and Low-Flow Sampling Results, Portland Shipyard Remedial Investigation.* Prepared for Port of Portland by Bridgewater Group, Inc. 12 June 2003. (POP0093889-POP0093936);[28]
- *Phase II, Environmental Site Assessment Report, 5420 North Lagoon Avenue, Portland, Oregon.* Prepared for Port of Portland by Hahn and Associates, Inc. 4 March 2004. (POP0076454-POP0076579);[28]
- *Background Information for Stormwater Management.* Prepared by Vigor Industrial, LLC. 20 November 2006. (CAS0017904-CAS0017946).[29]
- *Supplemental Preliminary Assessment – Swan Island Upland Facility.* Prepared for Port

[29] Submitted as attachments to Cascade General's 104(e) Responses (CAS0000029-CAS0000060, CAS0030350-CAS0030376).

of Portland by Ash Creek Associates, Inc. December 2006. (POP0082296-POP0082502);[28]

- *Swan Island Upland Facility, Operable Unit 2 Supplemental Sampling Results, ECSI No. 271.* Memorandum. Prepared for Oregon Department of Environmental Quality by Port of Portland. 5 January 2007. (POP0081364-POP0081452);[28]
- *Former Substation Sampling Results, Swan Island Upland Facility, Portland, Oregon, ECSI No. 271.* Memorandum. Prepared for Port of Portland by Ash Creek Associates, Inc. 24 July 2007. (POP0082613-POP0082641);[28]
- *2007 Swan Island Upland Facility, Operable Unit 2, Supplemental Groundwater Sampling Results, ECSI No. 271.* Memorandum. Prepared for Department of Environmental Quality by Port of Portland. 26 September 2007. (POP0080988-POP0081363);[28]
- *Swan Island Upland Facility Remediation Investigation, Letter Report for Former Substation & Berth 305 Sampling Results Addendum, ECSI No. 271.* Memorandum. Prepared for Oregon Department of Environmental Quality by Port of Portland. 15 November 2007. (POP0085492);[28]
- *Final Phase I Environmental Site Assessment, Shipyard Commerce Center, Parking Lot Property, 5501 N. Channel Avenue, Portland, OR 97217.* Prepared for Shipyard Commerce Center LLC by URS. 23 June 2008. (POP0076634-POP0076700);[28]
- *Final Phase II Environmental Site Assessment, Shipyard Commerce Center, Parking Lot Property, 5501 N. Channel Avenue, Portland, OR 97217.* Prepared for Shipyard Commerce Center LLC by URS. 23 June 2008. (POP0076701-POP0076754);[28]
- *Swan Island Upland Facility, Operable Unit 4, No Further Action Determination Request, ECSI No. 271.* Memorandum. Prepared for Oregon Department of Environmental Quality by Port of Portland. 11 July 2008. (POP0085562-POP0086451);[28]
- *OU2 Stormwater System Cleanout, Swan Island Upland Facility, Portland, Oregon.* Memorandum. Prepared for Port of Portland by Ash Creek Associates, Inc. 24 March 2009. (POP0087140-POP0087532);[28]
- *OU2 Riverbank Soil Sampling and Pipe Abandonment, Swan Island Upland Facility, Portland, Oregon.* Memorandum. Prepared for Port of Portland by Ash Creek Associates, Inc. 31 March 2009. (POP0087896-POP0089929);[28]
- *SIUF OU3 (ECSI No. 271), Interim Storm Water Data Report Event 1.* Memorandum. Prepared for Port of Portland by Ash Creek Associates, Inc. 15 April 2009. (POP0082520-POP0082525);[28]
- *SIUF OU3 (ECSI No. 271), Interim Storm Water Data Report Event 2.* Memorandum. Prepared for Port of Portland by Ash Creek Associates, Inc. 24 April 2009. (POP0082526-POP0082539);[28]
- *SIUF OU3 (ECSI No. 271), Interim Storm Water Data Report Event 3.* Memorandum. Prepared for Port of Portland by Ash Creek Associates, Inc. 15 May 2009. (POP0082540-POP0082553);[28]
- *SIUF OU3 (ECSI No. 271), Interim Storm Water Data Report Event 4.* Memorandum. Prepared for Port of Portland by Ash Creek Associates, Inc. 8 June 2009. (POP0082554-POP0082567);[28]
- *Storm Water Source Control Evaluation, Operable Unit 3, Swan Island Upland Facility, Portland, Oregon.* Prepared for Port of Portland by Ash Creek Associates, Inc.

10 March 2010. (POP0090636-POP0091830);[28]

- *Portland Harbor RI/FS, Remedial Investigation Report.* Prepared for The Lower Willamette Group by Integral Consulting Inc., Windward Environmental LLC, Kennedy/Jenks Consultants, and Anchor QEA, LLC. 29 August 2011. (LWG-PCI0049299-LWG-PCI0080377); and
- *Portland Harbor RI/FS, Feasibility Study Report*. Prepared for The Lower Willamette Group by Anchor QEA, LLC, Windward Environmental LLC, Kennedy/Jenks Consultants, and Integral Consulting Inc. 29 August 2011. (LWG-PCI0049299-LWG-PCI0080377).

St. Johns Dry Dock

For information related to the soil, groundwater, and geology/hydrogeology of St. Johns Dry Dock, see the following documents (in chronological order):

- *Underground Storage Tank Decommissioning Report*. Prepared for METRO by Hahn and Associates, Inc. 13 August 1999. (POP0132878-POP0132965);[30]
- *Existing Data/Site History Report, Willamette Cove, Portland, Oregon*. Prepared for Port of Portland/Metro by Hart Crowser, Inc. 8 November 2000. (POP0133917-POP0137137);[30]
- *Phase I Progress Report, Remedial Investigation, Willamette Cove, Portland, Oregon*. Prepared for Port of Portland/Metro by Hart Crowser, Inc. 27 September 2001. (NWMAR147462-NWMAR147619);
- *Sediment Cap Basis of Design, McCormick and Baxter Creosoting Company Site, Portland, Oregon*. Prepared for Oregon Department of Environmental Quality by Ecology and Environment, Inc. February 2001. (NWMAR147705-NWMAR147714,NWMAR147715-NWMAR147858);
- *Remedial Investigation, Willamette Cove, Portland, Oregon*. Prepared for Port of Portland/METRO by Hart Crowser, Inc. 11 March 2003. (POP0133781-POP0133916);[30]
- *Final Draft, Remedial Investigation Addendum: Supplemental Preliminary Assessment of the Willamette Cove Upland Facility, Portland, Oregon*. Prepared by Port of Portland. 19 September 2003. (POP0132695-POP0132875);[30]
- *Riverbank Soil Sampling Work Plan, Willamette Cove Upland Facility,* Prepared for METRO/Port of Portland by NewFields Boulder, LLC, Ash Creek Associated, Inc., and Blasland, Bouck & Lee, Inc. December 2005. (POP0133143-POP0133174);[30]
- *Groundwater Monitoring Work Plan, Willamette Cove Upland Facility*. Prepared for Port of Portland/METRO by Ash Creek Associates, Inc., NewFields Boulder, LLC, and Blasland, Bouck & Lee, Inc. March 2005. (POP0133175-POP0133467);[30]
- *Removal Action Activities: October 28, 2004, Willamette Cove, Oregon*. Memorandum. Prepared for Port of Portland/Metro by Ash Creek Associates, Inc. and Hart Crowser, Inc. 8 March 2005. (POP0133557-POP0133626);[30]
- *Riverbank Soil Sampling Work Plan, Willamette Cove Upland Facility*. Prepared for METRO/Port of Portland by NewFields Boulder, LLC, Ash Creek Associates, Inc., and Blasland, Bouck & Lee, Inc. April 2005. (NWMAR147873-NWMAR147895).
- *Groundwater Monitoring Report, Third Quarter 2005, Willamette Cove Facility,*

[30] Submitted as part of the Port's 104(e) Responses for Willamette Cove (POP0139303-POP0139352).

Prepared for Port of Portland/METRO by Ash Creek Associates, Inc., NewFields Boulder, LLC, and Blasland, Bouck & Lee, Inc. November 2005. (NP-MWC0001547-NP-MWC0001686);[31]

- *Groundwater Monitoring Report, December 2005, Willamette Cove Facility*, Prepared for Port of Portland/METRO by Ash Creek Associates, Inc., NewFields Boulder, LLC, and Blasland, Bouck & Lee, Inc. April 2006. (NP-MWC0001687-NP-MWC0001794);[31]
- *Risk Assessment Work Plan, Willamette Cove Upland Facility*. Prepared for Port of Portland by Ash Creek Associates, Inc., NewFields Boulder, LLC, and Blasland, Bouck & Lee, Inc. May 2006. (POP0132515-POP0132652);[30]
- *Reported Outfalls, Willamette Cove Upland Facility*. Memorandum. Prepared for Port of Portland/Metro by Ash Creek Associates, Inc. and NewFields Boulder, LLC. 17 May 2006. (POP0133538-POP0133556);[30]
- *Baseline Ecological Risk Assessment Willamette Cove Upland Facility*. Prepared for Port of Portland by Ash Creek Associates, Inc. and NewFields Boulder, LLC. June 2006. (POP0132177-POP0132244);[30]
- *Lead Characterization Work Plan, Willamette Cove Upland Facility*. Prepared for METRO/Port of Portland by Ash Creek Associates, Inc. and NewFields Boulder, LLC. June 2006. (POP0133516-POP0133537);[30]
- *Baseline Risk Assessment Willamette Cove Upland Facility*. Prepared for Port of Portland by Ash Creek Associates, Inc. and NewFields Boulder, LLC. September 2007. (POP0132245-POP0132514);[30]
- *Addendum to Riverbank Soil Sampling Work Plan, Willamette Cove Upland Facility*. Prepared for METRO/Port of Portland by Ash Creek Associates, Inc. and NewFields Boulder, LLC. August 2007. (POP0133503-POP0133515);[30]
- *Removal Action Work Plan, Willamette Cove Upland Facility*. Prepared for Port of Portland by NewFields Boulder, LLC and Ash Creek Associates, Inc. September 2007. (POP0133468-POP0133502);[30]
- *Portland Harbor RI/FS, Remedial Investigation Report*. Prepared for The Lower Willamette Group by Integral Consulting Inc., Windward Environmental LLC, Kennedy/Jenks Consultants, and Anchor QEA, LLC. 29 August 2011. (LWG-PCI0049299-LWG-PCI0080377); and
- *Portland Harbor RI/FS, Feasibility Study Report*. Prepared for The Lower Willamette Group by Anchor QEA, LLC, Windward Environmental LLC, Kennedy/Jenks Consultants, and Integral Consulting Inc. 29 August 2011. (LWG-PCI0049299-LWG-PCI0080377).

16. Identify all past and present solid waste management units or areas where materials are or were in the past managed, treated, or disposed (e.g., waste piles, landfills, surface impoundments, waste lagoons, waste ponds or pits, tanks, container storage areas, etc.) on each Property. For each such unit or area, provide the following information:

a. a map showing the unit/area's boundaries and the location of all known units/areas whether currently in operation or not. This map should be drawn to scale, if possible, and clearly indicate the location and size of all past and

[31] Submitted as part of METRO's 104(e) Responses (NP-MWC0000008-NP-MWC0000063, NP-MWC0000064-NP-MWC0000072).

present units/areas;

b. dated aerial photograph of the site showing each unit/area;

c. the type of unit/area (e.g., storage area, landfill, waste pile, etc.), and the dimensions of the unit/area;

d. the dates that the unit/area was in use;

e. the purpose and past usage (e.g., storage, spill containment, etc.);

f. the quantity and types of materials (hazardous substances and any other chemicals) located in each unit/area; and

g. the construction (materials, composition), volume, size, dates of cleaning, and condition of each unit/area.

Response 16: Respondent was associated with multiple properties within the boundaries of the Portland Harbor Superfund Site, each of which will be discussed separately below.

Inland Property

During NWM's and Respondent's period of control, neither NWM nor Respondent maintained any solid waste treatment units at the Inland Property, and each generally contracted with either the Port or other subcontractors (identified in Response 40) for the removal and treatment of such solid wastes. Based on interviews with William Johnston, Dana Austin, and William Zavin, waste products at the Inland Property, including sandblast material from NWM's interior operations (NWMAR106636), were stored temporarily near the point of generation, before being sorted into hazardous and nonhazardous wastes. Hazardous wastes were transported and disposed of off-site using a contracted waste handler, while nonhazardous wastes were placed in garbage containers on-site and transported to a local landfill. See Port ordinances 229 (passed in 1977, POP0004348)[32] and 366-R (passed in 1993, POP0004365-POP0004366).[32] Respondent found no specific Port rules regulating nonhazardous wastes prior to 1977 apart from the general rules pertaining to site cleanliness in Port tariffs (see, for example, NWMAR054093-NWMAR054094, NWMAR119063, NWMAR119067, POP0052889-POP0052891, POP0056455-POP0056500, POP0057472-POP0057520, NWMAR148239-NWMAR150643).[32]

From the property map at NWMAR040130, NWM maintained an open storage area and an enclosed storage area at the Inland Property, but Respondent was unable to locate documents specifying if these were storage areas for wastes or materials. See also the detailed description of operational processes, NWMAR107173-NWMAR107207.

Shipyard

The main solid wastes at the Shipyard were spent sandblasting grit, empty paint cans, and miscellaneous nonhazardous solids and cuttings (see Response 21 for a full description). During NWM's and Respondent's period of control, neither NWM nor Respondent maintained any solid waste treatment units at the Shipyard, and each generally contracted with either the Port or other subcontractor (see Response 40) for the removal and treatment of solid wastes. The only solid waste management conducted at the Shipyard was storage until removal for either treatment or

[32] Port documents submitted as attachments to the Port's 104(e) Responses for the Swan Island Upland Facility & Berth 311 (POP0138925-POP0139014).

disposal, as is discussed more fully in the detailed description of operational processes, NWMAR107173-NWMAR107207.

The Port identified nine waste management areas at the Shipyard but all were under the control of the Port (POP0138948-POP0138951). These waste management areas include:

- Original BWTP;
- Current BWTP;
- Berth 305 hazardous waste storage area;
- West State Inc. hazardous waste storage areas;
- Norvac Company storage area;
- Berth 306 Transformer Staging Area;
- Crosby & Overton leasehold;
- Chemical Processors Inc. leasehold; and
- Foss Environmental leasehold.

However, the Port failed to discuss its disposal area for spent sandblasting grit, a facility on Swan Island known as the copper slag landfill, discussed below. Numerous tariffs, permits, and other documents demonstrate that the Port was primarily responsible for the collection, transportation, and disposal of spent sandblasting grit from the Shipyard and dry docks during NWM's and Respondent's entire period of operation (see, for example, NWMAR054093-NWMAR054094, NWMAR106636, NWMAR119063, NWMAR119067, POP0052889-POP0052891, POP0056455-POP0056500, POP0057472-POP0057520, NWMAR148239-NWMAR150643).[32]

Copper Slag Landfill

a. Respondent is unaware of any maps of the location or size of the copper slag landfill. However, as POP0082345[32] places the location of this landfill as the spot of the present-day BWTP, see, e.g., NWMAR106628 for an approximate location. This location places the landfill essentially on the riverbank, within 500 feet of the Willamette River.

b. Respondent is unaware of any photography showing the location or extent of the copper slag landfill. However, several aerial photographs show the approximate location. These include: photo from circa 1964 (POP0082416),[32] photo from 26 August 1974 (POP0082421),[32] photo from 1975 (POP0082422),[32] and photo from 1978 (POP0082418).[32]

c. Respondent has no information about the size of the copper slag landfill and if the Port obtained any permits for its use as a landfill.

d. Documents summarized at POP0082345 suggest that the copper slag landfill had ceased to be an active location of disposal of sandblasting grit, but was still extant, in 1971.[32] Respondent is aware of no documents that provide information pertaining to the onset of disposal at the copper slag landfill.

e. The copper slag landfill was used as a disposal area for spent abrasive grit, which was predominately copper slag.

f. The only known material present was copper slag.

g. POP0082345 indicates that the copper slag landfill was covered using waste sand dredged from the Willamette River.[32] Respondent has no knowledge of any other information related to the construction, cleaning, or operation of the copper slag landfill.

St. Johns Dry Dock
Respondent discovered no documentation of any solid waste management units or areas at St. Johns Dry Dock. The Port's 104(e) Response 16 for Willamette Cove simply says, "Unknown" (POP0139328).

17. If the unit/area described above is no longer in use, how was such unit/area closed and what actions were taken to prevent or address potential or actual releases of waste constituents from the unit/area.

Response 17: Respondent does not possess knowledge regarding closure or remediation of solid waste management units or areas after Respondent ceased its involvement with Shipyard in 1992 and the Inland Property in 2006, and after NWM ceased its involvement with St. Johns Dry Dock in 1953.

18. For each Property, provide the following information regarding any current or former sewer or storm sewer lines or combined sanitary/storm sewer lines, drains, ditches, or tributaries discharging into the Willamette River:

a. the location and nature of each sewer line, drain, ditch, or tributary;
b. the date of construction of each sewer line, drain, ditch, or tributary;
c. whether each sewer line, or drain was ever connected to a main trunk line;
d. whether each sewer line, drain, ditch, or tributary drained any hazardous substance, waste, material or other process residue to the Willamette River; and
e. provide any documentation regarding but not limited to the following on any and all outfalls to the Willamette River which are located within the boundaries of the Property(ies). Your response should include, but not be limited to:
i. the areas serviced by the outfalls; and
ii. the type of outfall (i.e., storm water or single facility operational).

Response 18: Respondent was associated with multiple properties within the boundaries of the Portland Harbor Superfund Site, each of which will be discussed separately below.

Inland Property

a. For a discussion of the history of the sewer system on Swan Island, see Response 18(a) for the Shipyard, below. See also the line drawing entitled *Swan Island*

Shipyard General Plan Storm Sewer System by John W. Cunningham & Associates, dated 9 June 1942, provided as NWMAR106625; see also the line drawing entitled *Portland Shipyard Stormwater System* by Cascade General, dated 17 July 1997 (NWMAR106628); see also the multipage line drawing entitled *Portland Ship Repair Yard Master Utilities* by the Port of Portland, dated April 1981, as Drawing No. YA 81-1 (NWMAR107093-NWMAR107103); see also the drawings referenced in Response 13.

The primary structure on the Inland Property was constructed during the 1940s, and appears represented on this drawing as the structure labeled "Plating Shop" (NWMAR150645). Two sets of two outfall drainage lines appear connected to the structure, with one set discharging towards the northeast into the Lagoon, and a second set discharging towards the southwest into the River. The Port moved Swan Island's Channel Avenue inland in 1962 and as a result, a new stormwater main was installed beneath the road. In 1964 the Port expanded the stormwater system to the north, which included new main lines beneath Lagoon Avenue. The Port completed a final expansion at the north end of Lagoon Avenue in 1968 when a portion of the outfalls still discharging to the River and Lagoon remaining from the 1942 Kaiser installation were connected to the new storm sewer mains (POP0082334).[33]

Additionally, a map of the drainage system from the Inland Property (NWMAR147646) shows that there were six drains within the main structure (Building #2) at the Inland Property. The drainage of these six floor drains was split, with three draining towards the northeast (to the Lagoon) and three draining towards the southwest (to the Willamette River). There are also seven drains shown outside Building #2 to the west, with three draining towards the northeast and four draining towards the southwest. Lastly, this map shows three storm drains in the storage yard to the east of Building #2, with all three draining towards the northeast.

Based on NWMAR110426, the northeastern storm sewer running under North Lagoon Avenue receives inputs from 24 catch basins located upstream of Respondent's connection on neighboring properties, which includes 16 catch basins from the northern portion of Cascade General's Building #4 (Bays 1 through 5) and eight catch basins adjacent to former Building #10. Building #4 was originally constructed by Kaiser and was the central location for assembling the Type T-2 tankers consisting of welding and cutting. In 1958 the Port eliminated six of the interior drains in Building #4 through cutting and plugging (POP0082330).[33] A sandblasting shed, located between Buildings #4 and #63, was constructed in 1975 for Crosby and Overton, and may have been connected via catch basins into the same line as Building #4. Additional catch basins are located downstream of Respondent's connection point before terminating at the

[33] Port documents submitted as attachments to the Port's 104(e) Responses for the Swan Island Upland Facility & Berth 311 (POP0138925-POP0139014).

City-owned discharge outfall S-1. NWMAR110426 also indicates a connection to a second outfall located approximately at Dolphin Street. The ownership of this outfall is unknown. Collectively, this drainage is known as Basin I on NWMAR110426.

The southwestern storm sewer line running under North Channel Avenue into which the Inland Property connects, receives inputs from 14 upstream catch basins and from two buildings currently occupied by CH Murphy II Clark Ullman Inc. Based on NWMAR110426, at least 11 of the upstream catch basins appear to collect runoff from adjacent properties or North Channel Avenue, while the remaining three collect input from the south-eastern portion of the Inland Property. Downstream of Respondent's connection, 23 catch basins collect inputs from along North Channel Avenue and areas surrounding the southern portion of Building #4 (located on the Cascade General property). The majority of the catch basins appear to collect runoff from the area surrounding the southern portion of Building #4 before terminating at the City-owned discharge outfall S-6. Collectively, this drainage is known as Basin H on NWMAR110426.

Information related to the current stormwater drainage system in the Portland Harbor Superfund Site can be found in the City of Portland's *Municipal Stormwater Source Control Report for Portland Harbor* (NWMAR146853-NWMAR147341).

b. See the dates shown on the drawings referenced in Response 18(a).

c. See the drawings referenced in Response 18(a).

d. Respondent has not discovered any documents to suggest that either Respondent or NWM disposed of waste or hazardous materials into the storm sewer system at the Inland Property. See Responses 12 and 19.

Identifying sources of potential contaminants through the storm drain network connected to the Inland Property is complicated as the network comingles drainages at its outfall from multiple properties with industrial uses. Specifically, the drainage on the northeastern side of the Inland Property leads to Outfall S-1, which is also the outfall for Building #10 and bays #1-5 of Building #4 of the Shipyard, as well as 5555 N. Lagoon Ave (Basin I of NWMAR110426). Respondent and NWM never had any association with 5555 N. Lagoon Ave. and, based on NWMAR142739-NWMAR142740, never exclusively operated at other Shipyard properties draining to Outfall S-1. Thus, any and all drainage from Respondent's and/or NWM's operations leading to Outfall S-1 from the Inland property would have been comingled with drainages from other PRPs. Based on the Port's 104(e) Responses for the Swan Island Upland Facility & Berth 311 (POP0138884-POP0138894, POP0138925-POP0139014) and DSU Peterbilt-GMC's 104(e) Responses (DSU000005-DSU000075), historical operations potentially comingling discharges include:

- Asbestos abatement (Allwaste Asbestos Abatement of Portland Inc., Certified Asbestos Abaters, Inc., Columbia Asbestos Company);
- Electrical systems operations, repair, and replacement (Portland General Electric);
- Electronics, ordinance, and other military-support work (Northwest Ordinance Company, Pacific Ordinance & Electronics Co., PASS Office);
- Fabrication and repair of various metals, heavy equipment, and modules (American Fabricators, ARCO Alaska, Inc., Bailey Controls, Brown & Rool, Coast Engine & Equipment Co., Columbia Factors, Columbia Wire & Iron, Evraz Oregon Steel Mills, Fenton Highway Products Co., Kaiser Company, Inc., Matthews Marine Systems, Inc., Misco Services, Inc., Nordic Well Servicing, Inc., Northwest Copper Works, Northwestern Industrial Maintenance, Inc., Oregon Iron Works, Inc., Pacific Tank & Construction, Propulsion Controls Engineering, REH Inc., Thompson Metal Fab, Inc., Walashek Industries, Wellons, Inc., Western Boiler and Mechanical, Inc., Woodbury & Co.);
- Fabrication of insulation (Global Incorporated, Northwest Envirocon, Inc., Thermal Services, Inc.);
- Fabrication of wooden grain bins (John L. Hudson Co.);
- Floor installation and repair (Jiggs Floor, Inc.);
- Hazardous materials training and environmental consulting (HazMat Solutions, Inc.);
- Hydroblasting for paint removal (Cavi-Tech);
- Industrial Cleaning (Mac's Steam Cleaning, Norvac Services, Inc., Pacific Coast Environmental Inc.);
- Log booming and lumber-related operations (Caffall Bros. Booming Company, Caffall Bros. Forest Products, Park Loading Company);
- Manufacture of doors (Lockwood Wood Products);
- Painting and sandblasting services (Coastal Coatings, Zercon Corporation);
- Printing (Ehrlich's Business Service);
- Railroad (Oregon-Washington R/R & Navigation Co);
- Refrigerator manufacture (Industrial Refrigeration & Equipment Co., PSER, Inc.);
- Ship chandler and marine supplies (C.H. Murphy Company, Mar-Dustrial Sales & Service, Swan Island Marine Supply Company, W&O Supply);
- Ship dismantling (Consolidated Builders, Inc.);
- Ship repair and supporting operations, such as assembly, metal fabrication, storage, pipe work, sandblasting, painting, and welding (Albina Engine & Machine Works, ATKN, Cascade General, Electro-Mechanical Company, Farr West marine, Inc., FMC Corporation, Fraiser Boiler & Diesel, Lockport Marine Company, Mar Com Inc., Marine Electric Company, Marine Propulsion Services, Inc., North American Trading Company, NWM, Pac-Mar Services, PacOrd, Inc., Respondent, West Coast Wire & Cable Co., West State, Inc., Zidell Explorations/Zidell Marine);
- Shipyard inspections (ABS Group of Companies);

- Storage of grains and fertilizers (Kerr Grain Corporation, Lawrence Warehouse Co.);
- Storage of heavy equipment (Boston Metals Company, EJ Bartells Co., Keystone Shipping Co., LJ Hoffman Forklift Company, States Steamship Company, Tyco Submarine Systems Ltd.);
- Soap and perfume manufacture (Evergreen Chemical and Soap Company);
- Ultrasonic, radiographic, or other nondestructive testing (MMP Quality Inspections, Inc., Ronald Nisbet Associates, Weslet, Inc.);
- Vehicle painting, servicing, and repair (DSU Peterbilt, GMC); and
- Welding and painting training (Portland Shipyard Training Center Inc.).

Based on the above list and the *Portland Harbor RI/FS Remedial Investigation Report* ("*RI Report*," LWG-PCI0049299-LWG-PCI0080377), contaminants of concern related to these operations include:

- Asbestos;
- Metals;
- PCBs;
- Polycyclic aromatic hydrocarbons ("PAHs");
- Volatile organic compounds ("VOCs");
- Semi-volatile organic compounds ("SVOCs") (including Phthalates);
- Total petroleum hydrocarbons ("TPH"); and
- Tributyltins.

The drainage of the southwestern side of the Inland Property leads to Outfall S-6, which also served bays #6-11 of Building #4 and Berth 314 of the Shipyard, the northern edge of the parking lot between N. Channel Ave. and N. Going St., 5565 N. Dolphin Street, 5300 N. Channel Ave., and the southern half of 5411 N. Lagoon Ave (Basin H of NWMAR110426). To Respondent's knowledge, neither NWM nor Respondent had an association with the parking lot between N. Channel Ave. and N. Going St., 5565 N. Dolphin Street, 5300 N Channel Ave., or 5411 N. Lagoon Ave. Based on NWMAR142739-NWMAR142740, neither NWM nor Respondent operated bays #6-11 of Building #4 at the Shipyard exclusively at any time. Based on the Port's 104(e) Responses for the Swan Island Upland Facility & Berth 311 (POP0138884-POP0138894, POP0138925-POP0139014), Cascade General's 104(e) Responses (CAS0000017-CAS0000060, CAS0030350-CAS0030376), and Daimler Trucks North America LLC's 104(e) Responses (DAI0000142-DAI0000417), historical operations potentially comingling discharges include:

- Concrete prefabrication (Olympian Stone Company, Inc.);
- Diesel distribution (Pacific Diesel Power Company);
- Electrical systems operations, repair, and replacement (Portland General Electric);
- Electronics, ordinance, and other military-support work (Progress Electronics Company of Oregon, Northwest Ordinance Company, Pacific Ordinance & Electronics Co., PASS Office);
- Fabrication and repair of various metals, heavy equipment, and modules

(ARCO Alaska, Inc., Brown & Rool, Columbia Factors, Evraz Oregon Steel Mills, Fenton Highway Products Co., MD Hicklin, Matthews Marine Systems, Inc., Portland Wire & Iron, Soule Steel Company, Thompson Metal Fab, Inc.);

- Log booming and lumber-related operations (Caffall Bros. Booming Company, Caffall Bros. Forest Products, Park Loading Company, Reinholdt & Lewis);
- Marine and truck terminal (Sea Land Services, Inc.);
- Marine equipment supply (R.B. Woodbury, Swan Island Marine Supply Company);
- Painting and sandblasting services (Corrosion Management, Inc.);
- Railroad (Oregon-Washington R/R & Navigation Co);
- Refrigerator manufacture (Industrial Refrigeration & Equipment Co.);
- Ship repair and supporting operations, such as assembly, metal fabrication, storage, pipe work, sandblasting, painting, and welding (Albina Engine & Machine Works, ATKN, Cascade General, DIL Trust, Kaiser Company, Inc., NWM, Respondent, West State, Inc., Zidell Explorations/Zidell Marine);
- Soap and perfume manufacture (Evergreen Chemical and Soap Company);
- Storage of grains and fertilizers (Kerr Grain Corporation, Lawrence Warehouse Co.);
- Storage of heavy equipment (Boston Metals Company, Keystone Shipping Co.);
- Surplus property dealer (Darrel M. Gibson);
- Truck manufacture (Daimler Trucks North America LLC);

Based on the above list and the *RI Report* (LWG-PCI0049299-LWG-PCI0080377), contaminants of concern related to these operations include:

- Metals;
- PAHs;
- PCBs;
- VOCs.
- SVOCs (including Phthalates);
- TPH; and
- Tributyltins.

See Response 19 for a discussion of contaminant sampling at the relevant outfalls.

e. There were no outfalls located within the boundaries of the Inland Property because the Inland Property is not adjacent to the Willamette River.

<u>Shipyard</u>

a. Swan Island, the adjacent Lagoon and the region across the Lagoon known as Mocks Bottom, is a named subwatershed tributary to the River (see map at NWMAR141332). This area historically contained a large network of municipal and private storm sewers, catchment basins and outfall discharge locations. In

1942, Kaiser developed Swan Island into a shipyard for the Maritime Commission. Kaiser's development of the Shipyard included a sanitary and stormwater drainage system. As Kaiser leased both the Shipyard and the Inland Property, this answer covers the combined history of storm sewers on both properties. The sanitary sewer system discharged to the River via at least seven outfalls and the stormwater system discharged to both the River and Lagoon (NWMAR150645-NWMAR150645.1). In some cases, the sanitary and stormwater systems were combined (POP0082315).[34] The *SIUF Preliminary Assessment* references a Port drawing (YA 1942 0503, used as background for POP0082406)[34] that presents a "future" interceptor sewer running alongside the River and connecting to a proposed City sewer beneath the causeway connecting Swan Island to the mainland (POP0082315).[34] In 1954, the Swan Island sanitary sewer trunk interceptor was completed (POP0082329).[34]

The storm sewer and sanitary sewer systems installed by Kaiser remained in-place during Consolidated Builders Inc.'s ship scrapping operations following the Second World War and after the Port purchase of the Shipyard from the U.S. War Assets Administration in 1949 and the Port's subsequent demolition at and renovation of the Shipyard. The Port moved Swan Island's Channel Avenue inland in 1962 and as a result, a new stormwater main was installed beneath the road. In 1964, the Port expanded the stormwater system to the north, which included new main lines beneath Lagoon Avenue. The Port completed a final expansion at the north end of Lagoon Avenue in 1968, and some of the outfalls discharging to the River and Lagoon remaining from the 1942 Kaiser installation were connected to the new storm sewer mains (POP0082334).[34] Additional changes may have occurred to the southwest drainage system after Cascade General assumed ownership and control of Swan Island in 2000 (see map at NWMAR110426). These modifications occurred after Respondent ceased operations.

The 1964 stormwater system expansion and subsequent municipal separated storm sewer system modifications conducted by the City of Portland resulted in seven City-owned outfalls: M1, M2, M3, S1, S2, S5 and S6. NWMAR141333 indicates the location of these outfalls, the approximate location of their conveyance infrastructure and the approximate drainage areas. In addition to these City-owned outfalls, the *RI Report* identified 119 private outfalls on Swan Island or within the Lagoon area. NWMAR141333 indicates the location of these private outfalls, while NWMAR141337 provides a summary of owners and description of the drainage basin feeding each outfall. The majority of these outfalls are associated with catch basins and berthing structures located along the edge of infrastructure cited along the edge of the Lagoon, and have been installed at various and mostly unknown, dates since the 1950s (NWMAR141337).

[34] Port documents submitted as attachments to the Port's 104(e) Responses for the Swan Island Upland Facility & Berth 311 (POP0138925-POP0139014).

The storm sewer collection system for large portions of the Shipyard is isolated from the conveyance systems described for the Inland Property, except for that of Buildings #4 and 10, as described in Response 18(d) for the Inland Property. For the remaining Shipyard drainage, the property will be split into Basins J and K, as defined on NWMAR110426. Drainage Basin J includes drainages from: Buildings #43, 50, 58, 60, 61, 62, 63, 63A, 64, and 80; Dry Docks #1 and 3; Berths 301, 302, 309, and 310; and all associated open spaces. Drainage Basin K includes drainages from: Buildings #9, 71, 72, and 73; the BWTP; Dry Dock #4; Berths #312 and 313; and all associated open spaces.

For details on the specific outfalls and source areas, see the line drawing entitled *Swan Island Shipyard General Plan Storm Sewer System* by John W. Cunningham & Associates, dated 9 June 1942, provided as NWMAR106625; see also the line drawing entitled *Portland Shipyard Stormwater System* by Cascade General, dated 17 July 1997 (NWMAR106628); see also the multipage line drawing entitled *Portland Ship Repair Yard Master Utilities* by the Port of Portland, dated April 1981, as Drawing No. YA 81-1 (NWMAR107093-NWMAR107103); see also the City of Portland's *Municipal Stormwater Source Control Report for Portland Harbor* (NWMAR146853-NWMAR147341); see also the drawings referenced in Response 13.

b. See Response 18(a).

c. See Response 18(a).

d. Respondent has not discovered any documents to suggest that either Respondent or NWM disposed of waste or hazardous materials into the storm sewer system at the Inland Property as part of their regular operating procedures. There was a single reported incident of a release through the Shipyard's storm drains that was tied to NWM. On 17 April 1991, the Coast Guard received an anonymous tip that NWM was disposing of ballast water in the storm drain (POP0138905).[35] See Responses 12 and 19.

The storm drain network at the Shipyard comingles drainages at its outfall from locations within the property with similar uses but different tenants. Specifically, the drainage from the Shipyard, with the exception of drainage from Buildings #4 and #10, mixed and entered the Willamette River or Swan Island Lagoon through one of a dozen private outfalls. However, the Port maintained National Pollutant Elimination Discharge System permits for the Shipyard during NWM's period of operations (NWMAR119037-NWMAR119343, POP0138938-POP0138941, POP0138965).[35] See Response 18(a) and NWMAR110426.

[35] Port documents submitted as attachments to the Port's 104(e) Responses for the Swan Island Upland Facility & Berth 311 (POP0138925-POP0139014).

NWMAR142739-NWMAR142740 summarizes NWM and Respondent's operational footprint at the Shipyard and demonstrates that at no point did NWM or Respondent occupy all Shipyard spaces that drained into Basin J. A drainage map of the modern Shipyard with building numbers can be found at CAS0000275.[36] Based on the Port's 104(e) Responses for the Swan Island Upland Facility & Berth 311 (POP0138884-POP0138894, POP0138925-POP0139014), the following activities occurred within Basin J:

- Electrical systems operations, repair, and replacement (Portland General Electric);
- Gas and electric equipment rentals (Portable Equipment Co);
- Industrial cleaning (Allstate Industrial and Marine Cleaning, Inc., Crosby & Overton, Inc., Industrial Marine Inc., Norvac Services, Inc., Pacific Coast Environmental, Inc., Pacific Dynamics Corp., Petrolek, West Coast marine Cleaning, Inc.);
- Manufacturing of blackboards and paper products (Perfect Products Co.);
- Material storage related to ship repair, ship salvage, or other activities (CM Corkum Co., Christal, Grady, and Harper, Inc.,);
- Moorage or berthage of vessels (A.G. Allen, Marine Transport Line, Inc., Sturm Elevator Company);
- Nondestructive testing (International Inspection);
- Painting and sandblasting services (Blasco, Inc., C&C Sandblasting Company, Coastal Coatings, Diamond K., Kimco, Pacific Abrasives & Supply Co., SIPCO);
- Railroad (Oregon-Washington R/R & Navigation Co);
- Refrigeration and heating (AMSCO Refrigeration Inc.);
- Ship chandler and marine supplies (Duane Peabody Company, Gunderson, Inc.);
- Ship dismantling (Consolidated Builders, Inc.);
- Ship repair and supporting operations, such as assembly, metal fabrication, storage, pipe work, sandblasting, painting, and welding (Albina Engine & Machine Works, ATKN, Avondale Industries, Inc., Babcock & Wilcox, Cascade General, DIL Trust, Floating Marine Ways, FMC Corporation, Fraser Boiler & Diesel, Kaiser Company, Inc., L & S Marine, Lake Shore, Inc., Mar Com Inc., Marine Propulsion Services, Marine Ways Corp., NWM, Pac-Mar Services, Performance Contracting, Inc., Port, Respondent, Wartsila Lips, Inc., West State, Inc., Zidell Explorations/Zidell Marine); and
- Tank cleaning and disposal (Allstate Industrial and Marine Cleaning, Inc.).

Based on the above list and the *RI Report* (LWG-PCI0049299-LWG-PCI0080377), contaminants of concern related to these operations include:

- Metals;
- PAHs;

[36] Submitted as attachments to Cascade General's 104(e) Responses (CAS0000029-CAS0000060, CAS0030350-CAS0030376).

- PCBs;
- VOCs;
- SVOCs (including Phthalates);
- TPH; and
- Tributyltins.

NWMAR142739-NWMAR142740 summarizes NWM's and Respondent's operational footprint at the Shipyard and demonstrates that at no point did NWM or Respondent occupy all Shipyard spaces that drained into Basin K. A drainage map of the modern Shipyard with building numbers can be found at CAS0000275.[36] Based on the Port's 104(e) Responses for the Swan Island Upland Facility & Berth 311 (POP0138884-POP0138894, POP0138925-POP0139014), the following activities occurred within Basin K:

- Asbestos abatement (Columbia Asbestos Company);
- Electrical systems operations, repair, and replacement (General Electric Company, Portland General Electric);
- Fabrication and repair of various metals, heavy equipment, and modules (Columbia L & S, Inc., Fought & Company, Inc.);
- Hydroblasting for paint removal (Cavi-Tech);
- Industrial cleaning and non-ship repair generator or user of ballast water (Burlington Environmental, CET Environmental Services, Inc., Crosby & Overton, Inc., Foss Environmental Services Company, Knappton Corp., Lockwood Industries, Inc., Marine Vacuum Services, Inc., Northwest Air and Industrial Cleaning, Pacific Coast Environmental, Inc., Port of Astoria, Riedel International, Inc., Shaver Transportation Co., Spencer Environmental, Sundial Marine, Tidewater Barge Lines, West Coast Marine Cleaning, Inc., Western Transportation);
- Oil-water separation and disposal (Port);
- Painting and sandblasting services (Blasco, Inc., CLN, Inc., Diamond K, Zercon Corporation);
- Ship chandler and marine supplies (Standard Marine Supply, Inc., W&O Supply);
- Ship dismantling (Consolidated Builders, Inc.);
- Ship repair and supporting operations, such as assembly, metal fabrication, storage, pipe work, sandblasting, painting, and welding (Albina Engine & Machine Works, ATKN, Cascade General, DIL Trust, Floating Marine Ways, FMC Corporation, Lockport Marine Company, Mar Com Inc., Marine Propulsion Services, Inc., NWM, Pac-Mar Services, Respondent, West State, Inc., Zidell Explorations/Zidell Marine);
- Storage of heavy equipment (EJ Bartells Co.);
- Storage or distribution of paint (Hempel's Marine Paint, In-Mar Sales, Inc., International Marine & Industrial Applicators); and
- Treatment and disposal of bilge and other oily waters at the BWTP (Port).

Based on the above list and the *RI Report* (LWG-PCI0049299-LWG-PCI0080377), contaminants of concern related to these operations include:

- Asbestos;
- Metals;
- PAHs;
- PCBs;
- VOCs;
- SVOCs (including Phthalates);
- TPH; and
- Tributyltins.

See Response 19 for a discussion of contaminant sampling at the relevant outfalls.

e. See outfall maps referenced in Response 18(a) for the Inland Property. See specifically NWMAR141333.

St. Johns Dry Dock

a. According to the Port's 104(e) Responses for the Willamette Cove central parcel (i.e., the location of St. Johns Dry Dock), there are no active outfalls on the property (POP0139329). The Port identifies one active drainage line, City Outfall 49, the runs beneath the property but does not have an inlet on the property (POP0139329). The Port also identifies an inactive outfall, WR-190, on the property that is currently filled with soil. The Port reports no knowledge of any historical use or drainage area (POP0139329).

b. See Response 18(a).

c. See Response 18(a).

d. To Respondent's knowledge, St. Johns Dry Dock did not have an active drainage system during NWM's operations.

e. See Response 18(e) from the Port's 104(e) Responses for Willamette Cove, at POP0139329.

19. Provide copies of any stormwater or property drainage studies, including data from sampling, conducted at these Properties on stormwater, sheet flow, or surface water runoff. Also provide copies of any Stormwater Pollution Prevention, Maintenance Plans, or Spill Plans developed for different operations during the Respondent's operation of each Property.

Response 19: Respondent was associated with multiple properties within the boundaries of the Portland Harbor Superfund Site, each of which will be discussed separately below. See generally Response 18.

Inland Property

Of the reports in Response 15, the studies with stormwater measurements of outfalls servicing the Inland Property are the *RI/FS Work Plan* (POP0079794-POP0080670)[37] and the *Background Information for Stormwater Management* report ("*Stormwater Management Report*", CAS0017904-CAS0017946).[38] The *RI/FS Work Plan* has data from the southern outfall servicing the Inland Property[39] (see map at POP0079928). Sampling data from 1998-1999 indicates that stormwater at this outfall had detectable amounts of organic carbon, arsenic, chromium, copper, lead, nickel, and zinc and had nondetectable amounts of oil & grease, cadmium, and mercury (POP0079899). The *Stormwater Management Report* summarizes data from 2000-2006 from the same outfall as the *RI/FS Work Plan* and includes measurements of copper, lead, zinc, total suspended solids, and total oil & grease (CAS0017912).

Operators in the Shipyard area were not required to prepare stormwater pollution prevention plans until 1993 (see NWMAR010239-NWMAR010240) and Respondent ceased active operations at the Inland Property on 9 November 1992. Nonetheless, Respondent maintained good housekeeping practices of regularly cleaning its work areas and spill cleanup, which would have significantly reduced the potential for pollutant discharges to the City of Portland storm sewer system. These practices are described in the detailed description of operational processes, NWMAR107173-NWMAR107207.

In regards to Spill Plans, Respondent's former employees Dana Austin and William Johnston both stated that equipment leaks and spills in shops were cleaned up with rags and sorbent, which were placed in 55-gallon drums for waste characterization and offsite disposal at an appropriate facility (personal communications with William Johnston and Dana Austin). These interview statements are supported by waste handling and disposal practices described in the 1991 *Environmental Survey Wastewater Generating Characteristic* ("*1991 Wastewater Survey,*" NWMAR147624-NWMAR147645, NWMAR147646).

Shipyard

Of the reports in Response 15, the studies with stormwater measurements of outfalls servicing the Inland Property are the *RI/FS Work Plan*, (POP0079794-POP0080670),[37] the *Stormwater Management Report* (CAS0017904-CAS0017946),[38] and the *RI Report* (LWG-PCI0049299-LWG-PCI0080377). The *RI/FS Work Plan* has data from the southern outfall servicing the Shipyard[40] (see map at POP0079928). Sampling data from 1998-1999 indicates that stormwater at this outfall had detectable amounts of organic carbon, chromium, copper, lead, nickel, and zinc and had nondetectable amounts of oil & grease, arsenic cadmium, and mercury (POP0079899). The *Stormwater Management Report* summarizes data from 2000-2006 from the same outfall as the *RI/FS Work Plan* and includes measurements of copper, lead, zinc, total

[37] Submitted as an attachment to the Port's 104(e) Responses for the Swan Island Upland Facility & Berth 311 (POP0138925-POP0139014).
[38] Submitted as an attachment to Cascade General's 104(e) Responses (CAS0000029-CAS0000060, CAS0030350-CAS0030376).
[39] In the RI/FS Work Plan, this location is labeled Sample Point 3. This Sample Point corresponds to Outfall S-6.
[40] In the RI/FS Work Plan, these locations are labeled Sample Points 1 and 2. These are both near outfalls draining Bain J, with Sample Point 1 on the north side of Swan Island and Sample Point 2 on the west side.

suspended solids, and total oil & grease (CAS0017912). The *RI Report* includes a single location of stormwater sampling (WR-161) located near Sample Point 2 of the earlier reports.

For information related to stormwater management plans introduced by the owners of the Shipyard, see the Port's 104(e) Response 19 for the Swan Island Upland Facility & Berth 311 at POP0138953-POP0138955 and Cascade General's 104(e) Response 19 at CAS0000040. The Port maintained National Pollutant Elimination Discharge System permits for the Shipyard during NWM's period of operations (NWMAR119037-NWMAR119343, POP0138938-POP0138941, POP0138965). Specific Spill Plans for Respondent's operations at the Shipyard were not discovered; however, the general spill response for NWM would have matched those for the Inland Property, described above.

St. Johns Dry Dock
No stormwater or property drainage studies pertaining to St. Johns Dry Dock were discovered. No specific Stormwater Pollution Prevention, Maintenance Plans, or Spill Plans for St. Johns Dry Dock were discovered. NWM's operations at St. Johns Dry Dock occurred between 1943 and 1953 (see Response 5), predating such compliance regulations (see, for example, NWMAR010239-NWMAR010240).

Section 4.0 Respondent's Operational Activities

20. Describe the nature of your operations or business activities at each Property. If the operation or business activity changed over time, please identify each separate operation or activity, the dates when each operation or activity was started and, if applicable, ceased.

Response 20: Respondent's ship repair operations at all properties within the Portland Harbor Superfund Site extended from 14 April 1989 until 9 November 1992. NWM's ship repair operations at all properties within the Portland Harbor Superfund Site extended from 28 May 1943 until 14 April 1989. For a description of the operations conducted at the Inland Property and Shipyard, see Response 5 and the detailed description of operational processes, NWMAR107173-NWMAR107207.

As described in Response 5, NWM operated at St. Johns Dry Dock from 1943 until 1953. During this period of time, NWM conducted ship repairs of a varied nature at St. Johns Dry Dock. As described in Response 5, NWM repaired 216 vessels, or 4% of all vessels to enter the dry docks at St. Johns (see ship docking logs at POP0131309-POP0131445, POP0131446-POP0131608, POP0131610-POP0131856 and ship repair logs at POP0130202-POP0131306).[41] Repairs were primarily washing, cleaning, and painting of the vessel hulls, though less common repairs included electric welding, rudder and propeller replacement, and hull repair/renewal. Ship repair information is summarized in NWMAR147373-NWMAR147377. To Respondent's knowledge, the best available maps of the St. Johns Dry Dock facilities are 1924, 1932, 1950, and 1955 Sanborn maps from the *Site History Report* (POP0134048, POP0134057-POP0134062, POP0134070, POP0134079-POP0134084)[41] and a map of Willamette Cove from the *RI*

Addendum (POP0132776).[41] Historical records also indicate that NWM owned building 17 at St. Johns Dry Dock, a building labeled as a carpenter's shop (POP0132823),[41] but no maps indicating the location of this specific structure were discovered.

Documentation found suggests that St. Johns Dry Dock had two dry docks present during NWM's operations there (POP0132709-POP0132716).[41] Dry Dock No. 1 was completed in May of 1904 and associated over-water structures included two wharfs and a 22-foot-wide pier (POP0132710-POP0132711).[41] Dry Dock No. 2 was completed in late 1921 and added an additional wharf to the facility (POP0132712).[41] In February of 1919, a coal dock was also added to the facility (POP0132712-POP0132713).[41] From about 1924 through 1950-1951, no new over-water structures are recorded as having been added to St. Johns Dry Dock, though there are indications of repair and retrofitting of several of the wharfs during this period (POP0132713-POP0132716).[41] St. Johns Dry Dock ceased operations in 1953 and the two dry docks were relocated to Swan Island in February (Dry Dock No. 2) and July (Dry Dock No. 1) of 1953 (POP0132716-POP0132717).[41] Based on ship docking logs (POP0131309-POP0131445, POP0131446-POP0131608, POP0131610-POP0131856 and ship repair logs at POP0130202-POP0131306),[41] NWM operated at St. Johns Dry Dock for only 10 of the 50 years of shipyard operations there.

Little information exists about NWM's waste disposal agreements while operating at St. Johns Dry Dock. However, records from Shaver Transportation Company indicate that NWM had Shaver Transportation Company collect and dispose of bilge water at Rivergate Oil Sump three times (01/09/1948, 02/21/1948, and 02/27/1948) during the period of time when NWM operated at St. Johns Dry Dock (see SHA0001276, SHA0001281, and SHA0001282).[42]

The above information and answers to previous Responses represents Respondent's full knowledge about the operational and waste disposal procedures of NWM at St. Johns Dry Dock. As such, St. Johns Dry Dock will not be discussed in the remaining Responses.

21. At each Property, did you ever use, purchase, generate, store, treat, dispose, or otherwise handle any waste, or material? If the answer to the preceding question is anything but an unqualified "no," identify:

- **a. in general terms, the nature and quantity of the waste or material so transported, used, purchased, generated, stored, treated, disposed, or otherwise handled;**
- **b. the chemical composition, characteristics, physical state (e.g., solid, liquid) of each waste or material so transported, used, purchased, generated, stored, treated, disposed, or otherwise handled;**
- **c. how each such waste or material was used, purchased, generated, stored, treated, transported, disposed or otherwise handled by you; and**
- **d. the quantity of each such waste or material used, purchased, generated, stored, treated, transported, disposed or otherwise handled by you.**

[41] Port documents submitted as part of the Port's 104(e) Responses for Willamette Cove (POP0139303-POP0139352).
[42] Submitted as attachments to Shaver Transportation Company's 104(e) Responses (SHA0000022-SHA0000048).

Response 21: Yes. The waste products at the Inland Property and Shipyard differed, so will be discussed separately.

Inland Property

a. NWMAR040130 shows that the Inland Property was the location of machine, pipe, carpentry, electrical, sheet metal, and paint shops at Building #2. Based on the detailed description of operations (NWMAR107173-NWMAR107207), waste products of these activities included:
   - Oils and oily waters;
   - Scrap wood, plastic, paper, cardboard;
   - Scrap metal;
   - Waste oil, lubricants, cutting fluids;
   - Sanitary waste;
   - Empty paint containers;
   - Shop rags and other shop disposables;
   - Waste paint;
   - Spent solvents;
   - Coolants, cleaning, and shop chemicals; and
   - Aerosol cans.

   The quantities of such materials varied and were generally not documented. An exception is a 1991 *Oregon DEQ Hazardous Waste Site Report* ("*1991 ODEQ Site Report*") filed by NWM to ODEQ (NWMAR147378-NWMAR147379)[43] lists the following:
   - Spend Marine Coatings (Paints) and Solvents: 6105 gallons;
   - Waste degreaser: 365 gallons;
   - Morpholine, ethyl ethanolamine lab packing: 9 gallons;
   - Sulfuric acid and nitric acid lab packs: 30 pounds;
   - Sodium hydroxide, trisodium phosphate lab pack: 17 pounds;
   - Sodium nitrite, sodium chromate lab pack: 87 gallons; and
   - Mercury, ammonium molybdate, surfactant, disodium phosphate, sodium hydrox: 140 pounds.

   Based on the EPA and ODEQ waste codes (see NWMAR147380-NWMAR147403 and NWMAR147404-NWMAR147405) associated with these wastes, these wastes were categorized as:
   - D001: ignitable waste;
   - D002: corrosive waste;
   - D003: reactive waste;
   - F003: spent non-halogenated solvents; and

[43] Note that this Site Report lists NWM's address as 6000 N. Channel Ave. This address corresponds to the Shipyard, despite not being listed as 5555 N. Channel Ave., the standard address used for the Shipyard. Additionally, the coordinates included as part of the report indicates that this survey was conducted for the Inland Property.

- ORX007: waste regulated as hazardous in state-of-origin but not in Oregon.

These wastes were generated in the period of time between 29 August 1990 and 01 November 1991, specifically associated with NWM's work on the USS Standley (see NWMAR014596-NWMAR014598 and Responses 47-49). Although NWM facilitated the disposal of these materials, the generator was arguably the United States Navy, USS Standley.

For a full description of Respondent's waste procedures, see the detailed description of operational processes, NWMAR107173-NWMAR107207.

b. Some of the Material Safety Data Sheets ("MSDS") from the time Respondent was in operation were submitted, but most have not been located. Based on NWM's document retention policy (NWMAR138886-NWMAR138902), it is believed that most MSDS were disposed of at or shortly after November 9, 1992, the date on which Respondent concluded active operations (see Response 81). However, most materials utilized by Respondent are similar in composition to those materials used for the same processes today. Therefore, current MSDS for common materials used as part of Respondent's operations at the Inland Property can be found in Appendix 2: Material Safety Data Sheets to the detailed description of operational processes, NWMAR107236-NWMAR107314.

c. See Appendix 1: NWM Process Flow Charts for the detailed description of operational processes, NWMAR107208-NWMAR107235.

d. Records detailing the quantities of waste products were generally not discovered. See Response 41 for Respondent's estimates of the volume of waste products generated at the Inland Property.

<u>Shipyard</u>

a. Based on the detailed description of operations (NWMAR107173-NWMAR107207), typical waste products of these activities may have included:
   - Waste waters;
   - Fouling organisms (dead);
   - Spent sandblasting grit (copper slag);
   - Oils and oily waters;
   - Empty paint containers;
   - Spent solvents;
   - Asbestos (if present on vessels);
   - PCB-contaminated materials (if present on vessels);

The quantities of such materials varied. For a full description of Respondent's waste procedures, see the detailed description of operational processes, NWMAR107173-NWMAR107207.

An undated survey of waste storage at leased properties provided by the Port (POP0070805-POP0070808)[44] indicates that NWM stored 50 one-gallon paint cans and 50 five-gallon paint cans on the north side of Building #73. NWM also had two ten-thousand-gallon slop tanks located at Berths 303 and 305. For comparative purposes, the same survey lists Cascade General and West State Inc. as storing several hundred drums and paint cans—some noted as leaking—totaling over 100,000 gallons for each company at multiple locations around the Shipyard. Estimated disposal costs for such wastes were $934,675 for Cascade General and $896,500 for West State Inc. Disposal costs for NWM were not provided.

b. Some of the Material Safety Data Sheets ("MSDS") from the time Respondent was in operation were submitted, but most are not available. Based on NWM's document retention policy (NWMAR138886-NWMAR138902), it is believed that most MSDS were disposed of at or shortly after November 9, 1992, the date on which Respondent concluded active operations (see Response 81). However, most materials utilized by Respondent are similar in composition to those materials used for the same processes today. Therefore, current MSDS for common materials used as part of Respondent's operations at the Inland Property can be found in Appendix 2: Material Safety Data Sheets to the detailed description of operational processes, NWMAR107236-NWMAR107314.

c. The *1991 ODEQ Site Report* discussed above in Response 21(a) for the Inland Property indicates that waste products sometimes transported between the Shipyard (where ship-borne materials would be removed at berths and/or dry docks) and taken to NWM's storage yard at the Inland Property (NWMAR147378-NWMAR147379). As this material transportation is inferred from a regulatory report, the specifics of such transport of materials are generally not known.

NWM contracted with numerous waste handling companies, summarized in Response 40, for the transportation and disposal of waste materials. While some of these companies transported wastes off-site, others were employed to transport bilge and/or ballast waters from ships being repaired by NWM to the Port's BWTP for liquid treatment and recycling via vacuum truck when the Port's ballast water pipeline was not used. See Response 40(b) for details about NWM's waste handlers. Additionally, a vehicle operation manual indicates the NWM operated two vacuum trucks for at least 1991 until 1992 (NWMAR147647-NWMAR147693).

See also Appendix 1: NWM Process Flow Charts to the detailed description of operational processes, NWMAR107208-NWMAR107235.

[44] Submitted as an attachment to the Port's 104(e) Responses for the Swan Island Upland Facility & Berth 311 (POP0138925-POP0139014).

d. Records detailing the quantities of waste products other than those discussed in Response 21(a) were not discovered. See Response 41 for Respondent's estimates of the volume of waste products at the Shipyard.

22. Describe all activities at each Property that was conducted over, on, or adjacent to, the Willamette River. Include in your description whether the activity involved hazardous substances, waste(s), or materials and whether any such hazardous substances, waste(s), or materials were discharged, spilled, disposed of, dropped, or otherwise came to be located in the Willamette River.

Response 22: The Inland Property and the Shipyard are discussed separately below.

Inland Property
Respondent did not conduct activities at the Inland Property over, on or adjacent to the Willamette River, because the Inland Property is not adjacent to the Willamette River.

Shipyard
As described in Response 4, Respondent conducted ship repair activities at the Shipyard that were over, on or adjacent to the Willamette River. Many of these activities were conducted at common-use facilities controlled, monitored, and maintained by the Port. These activities are more fully discussed in the detailed description of operational processes, NWMAR107173-NWMAR107207.

23. For each Property at which there was or is a mooring facility, dock, wharf or any over-water structure, provide a summary of over-water activities conducted at the structure, including but not limited to, any material loading and unloading operations associated with vessels, materials handling and storage practices, ship berthing and anchoring, ship fueling, and ship building, retrofitting, maintenance, and repair.

Response 23: The Inland Property and the Shipyard are discussed separately below.

Inland Property
There were no mooring facilities, docks, wharfs or other over-water structures at the Inland Property because the Inland Property is landlocked.

Shipyard
As described in Response 4, Respondent conducted activities at the Shipyard, at which there were mooring facilities, docks, wharfs and other over-water structures. These common-use structures were controlled, monitored, and maintained by the Port. These structures and related activities are described in the detailed description of operational processes, NWMAR107173-NWMAR107207.

24. Describe all activities conducted on leased aquatic lands at each Property. Include in your description whether the activity involved hazardous substances, waste(s), or materials and whether any such hazardous substances, waste(s), or materials were

discharged, spilled, disposed of, dropped, or otherwise came to be located on such leased aquatic lands.

Response 24: Neither NWM nor Respondent conducted activities on leased aquatic lands at the Inland Property or Shipyard. The Port owned 83.9 acres of submerged lands in the vicinity of the Shipyard and leased and additional 21.1 acres of submerged lands from the Oregon Department of State Lands (POP0138927-POP0138928).

25. Please describe the years of use, purpose, quantity, and duration of any application of pesticides or herbicides on each Property during the period of investigation (1937 – present). Provide the brand name of all pesticides or herbicides used.

Response 25: Respondent does not have information regarding the years of use, purpose, quantity, and duration of any application of pesticides or herbicides on any of Respondent's properties. However, the large majority of these properties were paved or covered by buildings during Respondent's period of control. Consequently, Respondent believes that any such application of pesticides or herbicides would have been very limited. Please see the Port's 104(e) Response 25 for the Swan Island Upland Facility & Berth 311 for information regarding the Port's historical usage of pesticides and herbicides at the Shipyard from 1961 until 2009 (POP0138959).

26. Describe how wastes transported off the Property for disposal are and ever were handled, stored, and/or treated prior to transport to the disposal facility.

Response 26: Generally, all waste disposal, including that of hazardous and non-hazardous solid and liquid waste, was conducted at locations not owned by NWM or Respondent. NWM and Respondent collected, identified, and stored various waste products at sites located at the Inland Property and Shipyard as part of their standard operating procedures. Respondent is unaware of any waste treatment that occurred as part of NWM's or Respondent's operations at the Shipyard or Inland Property.

Due to the document retention policy and several known document destruction events during NWM's operations (see Response 81), records of NWM's waste handling practices are sparse. However, several key documents provide insight into waste procedures of NWM and Respondent and the quantities of waste products generated as part of NWM's and Respondent's ship repair operations. These documents are:

- *Northwest Marine Ironworks Due Diligence Report* written in 1989 by Bruce Gair (NWMAR106635-NWMAR106682). This memorandum focused on NWM's operations at the time NWM was acquired by Respondent. This documents shows that the Port was responsible for the bulk of sandblast grit disposal, taking responsibility for all sandblast grit disposal from the Shipyard and the dry docks. As part of this responsibility, the Port controlled all National Pollution Discharge Elevation System permits for the Shipyard. In particular, these permits allowed the Port to cycle (i.e., raise and submerge) the dry docks multiple times between cleanings. Mr. Gair notes that this procedure was highly irregular, stating that he found the infrequency of dry dock cleanings to be "absolutely amazing" and the he was "not going to believe it until [he saw] it." NWM was

responsible for the disposal of sandblast grit from its interior operations at the Inland Property. This sandblast grit disposed of by NWM at either public or private disposal facilities.

- *Preliminary Environmental Assessment, Port of Portland Ship Yard Repair* written by Dames & Moore on behalf of the Port (POP0112028-POP0112132).[45] 24 February 1989. This assessment focuses on the environmental conditions present at the Shipyard. Specifically related to NWM, Mr. Ray Coury was interviewed and he stated that prior to 1980 NWM "disposed of most of its wastes into on-site dumpsters that were taken to the local landfill" (POP0112043). Mr. Coury indicated that between 1980 and 1986 an unspecified waste hauler removed NWM's waste, and that from 1986 until 1989 (the year of the report), Western Compliance transported NWM's waste solvents and paints off-site. See also Response 40.
- *Environmental Survey Wastewater Generating Characteristic* (NWMAR147624-NWMAR147645, NWMAR147646). 8 November 1991. This document shows the NWM's main waste stream was wash-water, which NWM disposed of into the storm sewer system at a rate of about 100 gallons per day. Additionally, this report shows that NWM stored 136 lbs of PCBs on site, among other waste products. Lastly, this document shows that NWM disposed of paints, solvents, and degreasers in DOT approved 55-gallon drums, while asbestos and paint cans were segregated and disposed of as special wastes;
- *Leased Property Summary* (POP0070805-POP0070808).[45] Undated. This document catalogs waste stored at the Shipyard by Cascade General, West State Inc., and NWM. This property summary shows that NWM only had about 100 paint cans and two slop tanks located at the Shipyard, while Cascade General and West State Inc. had substantially larger quantities of waste stored on-site;
- *Monthly Inventories for Waste Oils at the BWTP* (1978-1978, POP0096138-POP0096140, POP0098364-POP0098376, POP0111923-POP0111932)[45] and Billing Records from the Port to NWM (1985, 1986, and 1990-1992 NWMAR004785-NWMAR007498, NWMAR083616-NWMAR083779). These documents demonstrate that NWM sent ship-borne liquids to the Port's BWTP for treatment and recycling. Major gaps in records of the total volume of fluids treated at the BWTP exist, but these billing records are sufficient to show that NWM's usage of the BWTP fluctuated based on the specific needs of the vessel(s) under repair by NWM; and
- *NPDES Permits for the Port of Portland, Cascade General, and Vigor Industrial, LLC* (multiple documents ranging from NWMAR119037-NWMAR119341). 1975-2011. These NPDES Permits provide a lengthy history of the Port's discharges into the Willamette. Additionally, these NPDES Permits clearly demonstrate that the Port was responsible for the cleanliness of the dry dock facilities at the Shipyard, including most importantly the collection and disposal of spent sandblasting grit.
- *Oregon DEQ Hazardous Waste Site Report* (NWMAR147378-NWMAR147379). 1991. This Site Report categorizes the nature and quantities of seven waste streams generated and transported for off-site disposal. See Response 21 for a description of these waste

[45] Submitted as an attachment to the Port's 104(e) Responses for the Swan Island Upland Facility & Berth 311 (POP0138925-POP0139014).

streams. This Site Report was demonstrates that NWM managed no wastes onsite at the Shipyard.

- *Port Ordinance 229* (1977, POP0004343-POP0004358)[45] and Port *Ordinance 366-R* (1993, POP0004362-POP0004370).[45] These Port ordinances specify rules and regulations imposed by the Port on tenants at Port facilities, including the Shipyard. These rules specifically include provisions for waste disposal practices at the Shipyard, stating that "[g]arbage, papers and refuse, or other material, shall be placed in receptacles provided for that purpose and removed to the garbage pickup locations as designated by the Port Management" (POP0004348). Ordinance 366-R includes language permitting Port tenants for receiving a permit from the Port for the transport of liquid materials to the BWTP and ship-borne garbage to the Port operated autoclave (POP0004365-POP0004366). These ordinances demonstrate that the Port was responsible for garbage disposal at the Shipyard and regulated and permitted other material handling procedures.

Waste and material handling, use, and disposal procedures will be discussed in greater detail in Responses 27-49. See also the detailed description of operational processes, NWMAR107173-NWMAR107207.

27. Has Respondent ever arranged for disposal or treatment or arranged for transportation for disposal or treatment of materials to any Property (including the Willamette River) within the Investigation Area? If so, please identify every Property that Respondent's materials were disposed or treated at in the Investigation Area. In addition, identify:

a. the persons with whom the Respondent made such arrangements;
b. every date on which Respondent made such arrangements;
c. the nature, including the chemical content, characteristics, physical state (e.g., solid, liquid), and quantity (volume and weight) of all materials involved in each such arrangement;
d. in general terms, the nature and quantity of the non- hazardous materials involved in each such arrangement;
e. in general terms, the nature and quantity of any hazardous materials involved in each such arrangement;
f. the owner of the materials involved in each such arrangement, if not Respondent;
g. all tests, analyses, analytical results or manifests concerning each hazardous material involved in such transactions;
h. the address(es) for each Property, precise locations at which each material involved in such transactions actually was disposed or treated;
i. the owner or operator of each facility at which hazardous or non-hazardous materials were arranged to be disposed at within the Investigation Area;
j. who selected the location to which the materials were to be disposed or treated;
k. who selected the Property as the location at which hazardous materials were to be disposed or treated; and
***l.* any records of such arrangement(s) and each shipment.**

Response 27: Yes. NWM and Respondent used facilities at the Shipyard for the disposal or treatment of materials. In addition, NWM used facilities at Rivergate Oil Sump, a property owned by the Port during the period of NWM's operations, for the disposal or treatment of materials. Both these Properties sites are within the Site. Each site will be discussed separately below.

The Shipyard (Ballast Water Treatment Plant)
The relevant property is Parcel No. 376 (Various Buildings at Portland Harbor Shipyard), Tax Account No. R506872, Taxlot 1N1E18D-00200. See Response 4.

a. Beginning in 1973, NWM and Respondent contracted with the Port to use the Port-owned-and-operated BWTP, and the Port assumed responsibility for characterization, transportation, treatment and/or disposal of certain waste materials resulting from Respondent's activities, such as oily liquids, pursuant to these contracts. See, for example, port tariffs: NWMAR148239-NWMAR150643; and Shipyard use agreements: POP0052889-POP0052891, POP0056455-POP0056500, POP0057472-POP0057520, POP0058834-POP0058867, POP0059781-POP0059814.[46]

b. Respondent's records (NWMAR004785-NWMAR007498, NWMAR083616-NWMAR083779) and the Port's records (POP0096138-POP0096140, POP0098364-POP0098376, POP0111923-POP0111932)[46] indicate that NWM made arrangments with the Port to send liquid waste to the BWTP in 1978, 1985, 1986, and 1990-1992. The details of the waste arrangements are contained in the tariffs and Shipyard use agreements described in Response 27(a).

c. NWM's and Respondent's main waste transported to Port facilities at the Shipyard were bilge water and other oily waters. As discussed in Response 27(b), the quantities of oily liquids sent to the BWTP by NWM varied largely on the specific needs of vessels it was contracted to repair. Estimates from ODEQ indicate that the general composition of oily liquids transported to the BWTP for treatment and recycling were 90% water and 10% oils (e.g., POP0078342).[46] Often, the monthly or yearly totals treatment volumes are not known, making estimations of NWM's proportional usage of the BWTP difficult to estimate. One year for which an estimate can be made is 1978, and POP0098364-POP0098376 shows that NWM used the BWTP on a very limited basis, accounting for less than 1% of treated fluids by volume.[46] The volumes of liquids transported to the BWTP varied directly with the size of the specific vessels and the nature of repairs that NWM was contracted to conduct.

   See also Responses 21, 33, 35 and 36, as well as Appendix 2: Material Safety Data Sheets to the detailed description of operational processes, NWMAR107236-NWMAR107314.

[46] Submitted as attachments to the Port's 104(e) Responses for the Swan Island Upland Facility & Berth 311 (POP0138925-POP0139014).

d. See Response 27(c).

e. See Response 27(c).

f. Materials transported to the BWTP for temporary storage remained the property of vessels owners or operators, unless the vessel had left the Shipyard, at which point the Port took ownership of the material (NWMAR054007). Materials that were transferred to the BWTP for treatment and recycling became the property of the Port. The Port maintained NPDES Permits for the discharge of treatment liquids into the Willamette River (e.g., NWMAR119037-NWMAR119043, NWMAR119079-NWMAR119091, POP0095728-POP0095730, POP0095909-POP0095920, POP0102393-POP0102405).[46] Additionally, the Port sold use oil recovered at the BWTP for profit (e.g., POP0092946).[46]

g. By mid-1990, the Port required liquids transported to the BWTP to be tested for pH, total suspended solids, viscosity, flashpoint and oil & grease content (POP0069877-POP0069890, POP0138949).[46] Prior to these regulations, no information was found suggesting the Port required vessel owners, vessel operators, ship repair contractors, or liquid transporters to have characterized liquids sent to the BWTP.

After a liquid was accepted into the BWTP for treatment, all tests and analyses of the bilge water was the responsibility of the Port as operator of the BWTP. Over the operational history of the BWTP, the Port was required by NPDES Permits to test the effluent of the BWTP for flow, pH, temperature, and oil & grease (see 1975 NPDES Permit at NWMAR119039). In 1977, the Port was required to start testing for total suspended solids (see NWMAR119044). In 1991, the Port was required to start testing for metals, including at various times arsenic, cadmium, chromium, copper, lead, mercury, nickel, and zinc (see NWMAR119084). However, at no time was effluent of the BWTP required to be tested for other contaminants of concerns, including PAHs, PCBs, SVOCs, and VOCs by its NPDES permits (see, e.g., NWMAR119039, NWMAR119084, POP0095728-POP0095730, POP0095909-POP0095920, POP0102393-POP0102405).[46] See the Port's 104(e) Responses for the Swan Island Upland Facility & Berth 311 for information related to the Port's waste sampling and testing procedures (POP0138925-POP0139014).

h. The address of the Shipyard is 5555 North Channel Avenue, Portland, OR 97217. For the precise location of the BWTP at the Shipyard, see, for example, the Shipyard map at POP0082426. The treated oily water was then disposed of either into the sewer system or directly into the Willamette River. The 1975 NPDES Permit for the Shipyard required discharge of treated ballast water to "the City of Portland sewerage system" (NWMAR119037).[46] However, a mere two years later, in 1977, the permit was modified to allow discharge of treated ballast water to "the waters of the Willamette River" (NWMAR119044). Subsequent NPDES

permits continued to allow discharge of treated water from the BWTP to the River (for example, NWMAR119046, NWMAR119055, NWMAR119065, and NWMAR119092).

i. The Port.

j. The Port.

k. The Port.

l. No documentation of specific arrangements between NWM or Respondent and the Port was discovered. See generally port tariffs and Shipyard use agreements listed in Response 27(a).

<u>Rivergate Oil Sump</u>
Shaver Transportation Company ("Shaver") began disposing of waste at Rivergate Oil Sump, a facility owned by the Port, in 1947 (SHA0000032). From Shaver's 104(e) Responses, it is possible to estimate that Shaver transported approximately 4.6 million gallons of bilge water to Rivergate Oil Sump from 1947 to 1959 (SHA0000032). As Shaver estimated that bilge water was comprised of 90 to 98 percent water, it is reasonable to estimate that Shaver delivered approximately 92,000 to 460,000 gallons of oil to Rivergate Oil Sump during this time period (SHA0000032).

When counsel for Respondent interviewed William H. Zavin II, the former CEO of NWM (see NWMAR142990-NWMAR142992) in 2013, he did not recall the existence of Rivergate Oil Sump or whether NWM had contracted with Shaver Transportation Company ("Shaver") or any other entity to transport the oily bilge water for disposal at Rivergate Oil Sump. However, as explained below NWM may have arranged for limited quantities of bilge water to be transported to Rivergate Oil Sump for disposal during the late 1940s and the 1950s.

The relevant property is located in the southwest portion of the Evraz Oregon Steel Mill property (Taxlot No. 2N1W26-00800).

a. At three times between 1947 and 1953 (all in 1948), NWM contracted with Shaver Transportation Company for the transportation and disposal of bilge water at Rivergate Oil Sump (SHA0001276, SHA0001281, SHA0001282).[47]

b. Records indicate Shaver transported bilge water from vessels being repaired by NWM to Rivergate Oil Sump on 9 January 1948, 21 February 1948, and 27 February 1948 (SHA0001276, SHA0001281, and SHA0001282).[47]

c. The only materials transported by Shaver to Rivergate Oil Sump from vessels NWM repaired were bilge water and other oily waters. See Responses 21, 33, 35 and 36, as well as Appendix 2: Material Safety Data Sheets to the detailed description of operational processes, NWMAR107236-NWMAR107314; see also

[47] Submitted as attachments to Shaver Transportation Company's 104(e) Responses (SHA0000022-SHA0000048).

document type "Materials Safety Data Sheet" in the electronic document database.

d. See Response 27(e).

e. Historical Shaver log records indicate that NWM utilized Shaver's tug and barge services for transfer of bilge water on a very limited basis. Specifically, historical Shaver ship logs (SHA0001276, SHA0001281, and SHA0001282)[47] indicate that NWM arranged on three occasions from 1947 to 1959 (all three in 1948) for Shaver to transport bilge water from vessels for which NWM was performing repair services for disposal at Rivergate Oil Sump (SHA0000030). The ship logs identify 404 Shaver pickups during that time period, so NWM requested approximately one percent of these pickups (see Shaver ship logs at SHA0001230-SHA0001532).[47] Thus, relative to other entities such as Albina Engine & Machine (105 pickups), Consolidated Builders, Inc. (38 pickups), Pacific Marine Services (38 pickups), Willamette Iron and Steel Co. (32 pickups), and Zidell (26 pickups), NWM's potential contribution of bilge water to Rivergate Oil Sump was negligible.

Shaver's barges typically would transport "co-mingled petroleum-based liquid generated by the operations of ships calling on Port of Portland berths, various local shipyards and oil company tank cleaning operations" for disposal at the Rivergate Oil Sump (SHA0000031). Additionally, Shaver did not record the volumes of customer pickups or of deliveries to Rivergate Oil Sump (see, for example, SHA0001276, SHA0001281, and SHA0001282).[47] However, the quantity of bilge water NWM transferred to Shaver during the three NWM pickups can be reasonably estimated. Shaver's ship logs document 84 bilge water deliveries to the Sump from 1947 to 1959, and 404 pickups during the same period; so on average deliveries consisted of comingled bilge water from four to five customers. Shaver noted that the barge capacity in 1959 was 3,500 barrels and an average single load delivered to the Sump was estimated to be 1,500 barrels (or 63,000 gallons) (SHA0000032).

If the average single load delivery to the Sump consisted of bilge water from four to five customers, then each customer would have contributed approximately 12,600 to 15,750 gallons of bilge water, respectively. Shaver estimates that this bilge water was between 90% and 98% water per load (SHA0000032). Being conservative, 63,000 gallons of oily waste water would correspond to 6,300 gallons of oil. Therefore, each customer would have contributed approximately 1,260 to 1,575 gallons of oil per average single load to Rivergate Oil Sump (assuming four to five customers per load). Thus, NWM was associated with disposal at Rivergate Oil Sump of approximately 3,780 to 4,725 gallons (or 90 to 113 barrels) of co-mingled oily waste over a 12-year period. As a comparison, using the same assumptions as above, Albina Engine & Machine would have been associated with disposal at Rivergate Oil Sump of approximately 132,300 to 165,375 gallons (or 3,150 to 3,937.5 barrels) of co-mingled oily waste over a 12-

year period. Thus, in context with disposals by other PRPs, NWM's potential contributions were de minimis.

f. The owner of a ship in dry dock also owns the bilge water contained within that ship. Once NWM arranged for and transferred the bilge water to Shaver, Shaver became the owner of these materials.

g. No tests or analyses of these specific bilge waters were discovered. The waste collection manifests, SHA0001276, SHA0001281, and SHA0001282, list NWM as a client of Shaver three times between 1947 and 1953.[47]

h. 14400 N. Rivergate Blvd., Portland, OR 97203.

i. The Port (which owned Rivergate Oil Sump).

j. Shaver Transportation Company.

k. The Port.

l. No records of arrangements between NWM and Shaver were discovered. The only documents connecting NWM to Shaver and thus Rivergate Oils Sump are the three manifests described above. See specifically SHA0001276, SHA0001281, and SHA0001282.[47]

28. Describe the plants and other buildings or structures where Respondent carried out its operations at each Property within the Investigation Area (excluding locations where ONLY clerical/office work was performed).

Response 28: NWM and Respondent's active operation at the Inland Property and Shipyard lasted from 1950 until 1992. See NWMAR142739-NWMAR142740 for a table outlining NWM's and Respondent's occupation of specific buildings and areas at the Inland Property and Shipyard through time. See also Responses 5, 6, 13, and 20, as well as the detailed description of operational processes, NWMAR107173-NWMAR107207.

29. Provide a schematic diagram or flow chart that fully describes and/or illustrates the Respondent's operations on each Property.

Response 29: See Appendix 1: NWM Process Flow Charts to the detailed description of operational processes, NWMAR107208-NWMAR107235.

30. Provide a brief description of the nature of Respondent's operations at each location on each Property including:

a. the date such operations commenced and concluded; and

b. the types of work performed at each location, including but not limited to the industrial, chemical, or institutional processes undertaken at each location.

Response 30: Respondent's operations varied between properties; each site will be discussed separately below.

Inland Property

a. NWM began operations at the Inland Property in 1950 and continued to operate there until acquired by Respondent on 14 April 1989. Respondent engaged in active operations at the Property from 14 April 1989, to 9 November 1992 ("Respondent's Active Operations Period"). See Response 5 for a detailed corporate ownership and operations history of the Inland Property.
b. See Responses 5, 6, 13, 20, and 28. See also the detailed description of operational processes, NWMAR107173-NWMAR107207.

Shipyard

a. NWM began operations at the Shipyard in 1950 and continued to operate there until acquired by Respondent on 14 April 1989. Respondent engaged in operations at the Shipyard during Respondent's Active Operations Period. See Response 5 for a corporate ownership and operations history of the Shipyard.
b. See Responses 5, 6, 13, 20, and 28. See also the detailed description of operational processes, NWMAR107173-NWMAR107207.

31. If the nature or size of Respondent's operations changed over time, describe those changes and the dates they occurred.

Response 31: Respondent's operations varied between properties; each site will be discussed separately below.

Inland Property

The nature of Respondent's operations did not change appreciably during Respondent's Active Operations Period. NWM and Respondent used the Inland Property to house a variety of shops that supported the ship repair activities at the Shipyard. See Response 5, 6, 13 and 20, as well as the detailed description of operational processes, NWMAR107173-NWMAR107207.

NWM's and Respondent's facilities on the Inland Property expanded and contracted, depending on work volume. See Responses 13(b) and 13(*l*); see also NWMAR009329-NWMAR009331. Additionally, as the size of NWM's and Respondent's operations scaled with the availability of ship repair work, the ship repair logs summarized at NWMAR142741-NWMAR142900 provide a good indication of the change in size of operations at the Inland Property over time.

Shipyard

Generally, NWM's and Respondent's activities at the Shipyard remained related to ship repair over their active operational periods. However, as the ships being repaired become more sophisticated with advancing naval technology, NWM's and Respondent's operations likewise changed to include electronics and component installation in addition to major repurposing and reconstruction operations. For example, compare the ship repair logs from the 1940s (e.g.,

POP0130202-POP0131306)[48] where the majority of operations were exterior modifications and propulsion system renovations to ship repair contracts from the 1980s (e.g., NWMAR024732-NWMAR025080 at NWMAR024996, NWMAR025021-NWMAR025023, NWMAR040003-NWMAR040191 at NWMAR040015-NWMAR040016), where the repair work was split between upgrades to the vessel's electronic combat and communication systems and physical modifications to the vessel's hull.

Both NWM's and Respondent's usage of the Shipyard changed over time. See NWMAR142739-NWMAR142740, which summarizes the location, duration, and nature of NWM's and Respondent's operations at the Shipyard through time. Additionally, as the size of NWM's and Respondent's operations scaled with the availability of ship repair work, the ship repair logs summarized at NWMAR142741-NWMAR142900 provide a good indication of the change in size of operations at the Inland Property over time.

32. List the types of raw materials used in Respondent's operations, the products manufactured, recycled, recovered, treated, or otherwise processed in these operations.

Response 32: See the detailed description of operational processes and Appendix 1 thereto (NWM Process Flow Charts), NWMAR107208-NWMAR107235.

33. Provide copies of Material Safety Data Sheets (MSDS) for materials used in the Respondent's operations.

Response 33: Some of the Material Safety Data Sheets ("MSDS") from the time Respondent was in operation were submitted, but most have not been located. Based on NWM's document retention policy (NWMAR138886-NWMAR138902), it is believed that most MSDS were disposed of at or shortly after November 9, 1992, the date on which Respondent concluded active operations (see Response 81). However, most materials utilized by Respondent are similar in composition to those materials used for the same processes today. Therefore, current MSDS for common materials used as part of Respondent's operations at the Inland Property can be found in Appendix 2: Material Safety Data Sheets to the detailed description of operational processes, NWMAR107236-NWMAR107314.

34. Describe the cleaning and maintenance of the equipment and machinery involved in these operations, including but not limited to:

- **a. the types of materials used to clean/maintain this equipment/machinery;**
- **b. the monthly or annual quantity of each such material used;**
- **c. the types of materials spilled in Respondent's operations;**
- **d. the materials used to clean up those spills;**
- **e. the methods used to clean up those spills; and**
- **f. where the materials used to clean up those spills were disposed of.**

Response 34: In additional to the information provided below related to the cleaning and maintenance of equipment and machinery for NWM's and Respondent's operations, see the

[48] Submitted as part of the Port's 104(e) Responses for Willamette Cove (POP0139303-POP0139352).

detailed description of operational processes, NWMAR107236-NWMAR107314.

a. The *1991 Wastewater Survey* shows that NWM generated approximately 100 gallons of equipment/facility wash-down water on a daily basis (NWMAR147624-NWMAR147645). The Environmental Survey does not describe the disposal location of this wash-down water (see Response 41). Additionally, former employees William Johnston and Dana Austin stated in interviews that painting spray guns and hoses were cleaned with solvents by spraying the cleaning solvent into drums, and that such solvents were reused multiple times before begin disposed of in accordance to NWM's waste disposal practices (NWMAR107195). A purchase order for a "used solvent recovery system" from Environmental Associates, Inc. by NWM (NWMAR005947, NWMAR010881-NWMAR010893) corroborates these witness interviews. No other information about specific cleaning or maintenance materials was discovered.

b. See Response 34(a).

c. Generally, the only materials that may have been spilled as part of NWM's or Respondent's cleaning and maintenance of equipment was wash-down water (see, for example, NWMAR147624-NWMAR147645). For information related to spills apart from wash water, see Responses 10, 11, 62, 63, and 67. Materials spills include paint thinner, oil, ballast water, sandblast grit, and paint (POP0138895-POP0138924).[49]

d. See Response 35.

e. See Response 35.

f. See Responses 26, 27, and 40.

35. Describe the methods used to clean up spills of liquid or solid materials during Respondent's operation.

<u>Response 35</u>: Respondent's former employees Dana Austin and William Johnston both stated that equipment leaks and spills in shops were cleaned up with rags and sorbent, which were placed in 55-gallon drums for waste characterization and offsite disposal at an appropriate facility (personal communications with William Johnston and Dana Austin). These interview statements are supported by waste handling practices described the *1991 Wastewater Survey* (NWMAR147624-NWMAR147645, NWMAR147646).

Additionally, a 1991 permit for NWM's usage of two vacuum trucks for removal of bilge and other oily waters from vessels clearly states NWM's spill response procedures

[49] Submitted as an attachment to the Port's 104(e) Responses for the Swan Island Upland Facility & Berth 311 (POP0138925-POP0139014).

(NWMAR147647-NWMAR147693). According to this document, the seven-step response to a spill is the following:

1. The spill will be confined in such a way that the released material is prevented from entering public areas, storm drains, or surface waters;
2. A vacuum truck will remove the excess liquid;
3. Absorbent material will be used to clean up any remaining liquids;
4. Local emergency response agencies will be notified if the spill enters public areas, storm drains, or surface waters;
5. Concrete and/or paved surfaces will be cleaned;
6. Contained absorbent residues and any contaminated soils will be disposed of as hazardous waste; and
7. A hazardous incident report will be filed within 15 days.

No documents describing NWM's or Respondent's spill response for solid materials were discovered.

36. For each type of waste (including by-products) from Respondent's operations, including but not limited to all liquids, sludges, and solids, provide the following information:

- **a. its physical state;**
- **b. its nature and chemical composition;**
- **c. its color;**
- **d. its odor;**
- **e. the approximate monthly and annual volumes of each type of waste (using such measurements as gallons, cubic yards, pounds, etc.); and**
- **f. the dates (beginning & ending) during which each type of waste was produced by Respondent's operations.**

Response 36: See Response 33 for waste material properties. See Responses 21 and 41 for approximate volumes of wastes produced. See Responses 5, 6, and 10 for information related to the duration of activities conducted by NWM and Respondent resulting in waste production.

37. Provide a schematic diagram that indicates which part of Respondent's operations generated each type of waste, including but not limited to wastes generated by cleaning and maintenance of equipment and machinery and wastes resulting from spills of liquid materials.

Response 37: See the process flowcharts in Appendix 1 to the detailed description of operational processes, NWMAR107208-NWMAR107235.

38. Identify all individuals who currently have and those who have had responsibility for Respondent's environmental matters (e.g. responsibility for the disposal, treatment, storage, recycling, or sale of Respondent's wastes). Also provide each individual's job title, duties, dates performing those duties, supervisors for those duties, current position or the date of the individual's resignation, and the nature of the information possessed by such individuals concerning Respondent's waste management.

Response 38: Prior to Respondent's Active Operations Period, John Flynn and Jack Flynn were responsible for environmental matters for NWM. John Flynn is probably deceased, and Respondent does not have any contact information for either person.

Robert Coates, Environmental Coordinator at Northwest Marine, 1989-1993.
On-site management of environmental affairs, waste management and waste disposal. Direct report to Production Manager. Currently employed as Blast and Paint Superintendent at Cascade General.

Dana Austin, Corporate Manager of Environmental Affairs at Southwest Marine, 1989-1996.
Corporate management of environmental affairs. Provide direction and guidance to divisional environmental managers/coordinators. Provided periodic on-site inspection to monitor compliance. Direct report to Herb Engel, CEO, Southwest Marine. Currently employed by the U.S. Maritime Administration.

Terry Kingrey, Facility Manager, NWM, unknown-1993.
Managed facility to ensure on-going and efficient operations. Arranged collection, management and disposal of wastes at facility. Direct report to General Manager, William Johnston. May be currently employed with Cascade General (unable to verify).

Ray Coury, Blast and Paint Superintendent, NWM, unknown-1993.
Managed abrasive and paint waste generated from blasting and painting operations on dry docks and within shops. Direct report to Production Manager. Current whereabouts unknown.

39. For each type of waste describe Respondent's contracts, agreements, or other arrangements for its disposal, treatment, or recycling.

Response 39: See Responses 26, 27, and 40.

40. Provide copies of such contracts and other documents reflecting such agreements or arrangements, Including, but not limited to the following:

- **a. state where Respondent sent each type of its waste for disposal, treatment, or recycling;**
- **b. identify all entities and individuals who picked up waste from Respondent or who otherwise transported the waste away from Respondent's operations (these companies and individuals shall be called "Waste Carriers" for purposes of this Information Request);**
- **c. if Respondent transported any of its wastes away from its operations, please so indicate;**
- **d. for each type of waste specify which Waste Carrier picked it up;**
- **e. indicate the ultimate disposal/recycling/treatment location for each type of waste;**
- **f. provide all documents indicating the ultimate disposal/recycling/treatment location for each type of waste; and**
- **g. state the basis for and provide any documents supporting the answer to the**

previous question.

Response 40:

a. Respondent sent the indicated type of waste for disposal, treatment, or recycling to the following, among others. See Response 27; see also NWMAR013118-NWMAR015527.

Burlington Environmental Inc.
a.k.a. Chemical Processors, Inc. (ChemPro)
5420 N. Lagoon Dr.
Portland, OR 97217
(503) 283-1150
Use: Disposal of hazardous waste
References: NWMAR013216-NWMAR013237, NWMAR013972-NWMAR014005

Chemical Handling Corporation
11811 Upham St.
Broomfield, CO 80020
(303) 460-1000
Use: disposal of paints, solvents, degreasers in 55 gallon drums
Reference: NWMAR013157-NWMAR013212

Chemical Handling Corporation
118 23rd Street SE
Puyallup, WA 98372
(206) 840-8610
Use: Disposal of hazardous waste
Reference: NWMAR069854-NWMAR069856, NWMAR013157-NWMAR013212

Chemical Waste Management of the Northwest, Inc.
Star Route, Box 9
Arlington, OR 97812
(503) 454-2643
Use: Disposal of hazardous waste
Reference: NWMAR013151-NWMAR013156

Forest Grover Transfer Station
c/o A.C. Trucking
P.O. Box 8
Forest Grove, OR 97116
(503) 357-4848
Use: Nonhazardous solid waste disposal
Reference: NWMAR013120-NWMAR013124

Fuel Processors Inc.
4150 N. Suttle Rd.
Portland, OR 97217
(503) 286-8352
Use: Recycling of liquids
Reference: NWMAR010862-NWMAR010868, NWMAR069991
NWMAR013129-NWMAR013138

Hillsboro Landfill Inc.
3205 SE Minter Bridge Rd.
Hillsboro, OR 97123
(503) 640-9427
Use: Asbestos and special waste disposal
References: NWMAR000158-NWMAR000199, NWMAR000204-NWMAR000215, NWMAR012525-NWMAR012582, NWMAR013843-NWMAR013863

Port of Portland
Ballast Water Treatment Plant
5555 N. Channel Ave.
Portland, OR 97217
(503) 415-6000
Use: disposal of bilge or ballast water
References: see references in Response 27

Port of Portland
Copper Slag Landfill
5555 N. Channel Ave.
Portland, OR 97271
(503) 415-6000
Use: Potential disposal of spent copper sandblasting grit. Landfill is now defunct.
References: see references in Response 16

Rivergate Oil Sump
14400 N. Rivergate Blvd.
Portland, OR 97203
Defunct
Use: disposal of bilge water
References: see references in Response 27

b. Respondent's Waste Carriers included the following. See Response 27; see also NWMAR013118-NWMAR015527.

A.C. Trucking
P.O. Box 8
Forest Grove, OR 97116

(503) 357-4848
Use: Nonhazardous solid waste transportation
Reference: NWMAR013122-NWMAR013123

Allstate Industrial and Marine Cleaning, Inc.
5555 North Channel Dr.
Building #80
Portland, OR 97217
(503) 289-6623
Use: Transport and disposal of oily waste waters and aqueous film forming foams
References: NWMAR011143-NWMAR011208, NWMAR146518-NWMAR146833

Burlington Environmental Inc.
a.k.a. Chemical Processors, Inc. (ChemPro)
5420 N. Lagoon Dr.
Portland, OR 97217
(503) 283-1150
Use: Transportation of hazardous waste
References: NWMAR013216-NWMAR013237, NWMAR013972-NWMAR014005

Chemical Handling Corporation
11811 Upham St.
Broomfield, CO 80020
(303) 460-1000
Use: transportation of paints, solvents, degreasers in 55 gallon drums
Reference: NWMAR013157-NWMAR013212

Chemical Handling Corporation
118 23rd Street SE
Puyallup, WA 98372
(206) 840-8610
Use: Transportation of hazardous waste
Reference: NWMAR069854-NWMAR069856, NWMAR013157-NWMAR013212

Chemical Waste Management of the Northwest, Inc.
Star Route, Box 9
Arlington, OR 97812
(503) 454-2643
Use: Transportation of hazardous waste
Reference: NWMAR013151-NWMAR013156

Fuel Processors Inc.
4150 N. Suttle Rd.

Portland, OR 97217
(503) 286-8352
Use: Transportation of liquids for recycling
Reference: NWMAR010862-NWMAR010868, NWMAR013129-NWMAR013138, NWMAR069991

IAM/Environmental, Inc.
d.b.a. Allwaste Asbestos Abatement
204 SE Stonemill Dr., Suite 270
Vancouver, WA 98684
(206) 256-7557
Use: Asbestos abatement
Reference: NWMAR013730-NWMAR013842, NWMAR014153, NWMAR068877

Metropolitan Disposal Corporation
P.O. Box 11229
Portland, OR 97211
(503) 285-0571
Use: Nonhazardous solid waste transportation
Reference: NWMAR013118-NWMAR013124

Resource Recovery Corp.
A subsidiary of ChemPro/Burlington Environmental Inc.
1629 East Alexander
Tacoma, WA 98421
(206) 383-3044
Use: Transportation of hazardous waste
Reference: NWMAR013225-NWMAR013233

Shaver Transportation Company
P.O. Box 10324
Portland, Oregon 97296-0324
(888) 228-8850
Use: transporting bilge water to Rivergate Oil Sump
Reference: SHA0001276, SHA0001281, SHA0001282[50]

Western Compliance
Address Unknown
Contact Information Unknown
Use: disposal of waste solvents and paints
Reference: POP0112043[51]

[50] Submitted as attachments to Shaver Transportation Company's 104(e) Responses (SHA0000022-SHA0000048).
[51] Submitted as an attachment to the Port's 104(e) Responses for the Swan Island Upland Facility & Berth 311 (POP0138925-POP0139014).

c. See Response 40(b).

d. See Response 40(b).

e. See Response 40(a); see also NWMAR013118-NWMAR015527.

f. See NWMAR000158-NWMAR000199, NWMAR000204-NWMAR000215, NWMAR013118-NWMAR015527.

g. See NWMAR000158-NWMAR000199, NWMAR000204-NWMAR000215, NWMAR013118-NWMAR015527.

41. Describe all wastes disposed by Respondent into Respondent's drains including but not limited to:

a. **the nature and chemical composition of each type of waste;**
b. **the dates on which those wastes were disposed;**
c. **the approximate quantity of those wastes disposed by month and year;**
d. **the location to which these wastes drained (e.g. septic system or storage tank at the Property, pre- treatment plant, Publicly Owned Treatment Works (POTW), etc.); and**
e. **whether and what pretreatment was provided.**

Response 41: Respondent's waste disposal procedures varied between properties; each site will be discussed separately below.

Inland Property

a. The primary facility located on the Inland Property consisted of a variety of shops supporting NWM and Respondent's ship repair operations at the Shipyard. Activities at such shop facilities include: pipe fitting, machining, rigging, carpentry, electrical work, sheet metal forming, painting, and material/waste storage (see, for example, NWMAR040130). Steam cleaning and pressure washing occurred at the facility; however, the specific locations for these activities within the Inland Property are not known. The *1991 Wastewater Survey* completed by Respondent (then known as Southwest Marine and doing business as NWM), [52] dated 8 November 1991 (NWMAR147624-NWMAR147645, NWMAR147646) states that NWM generated 100 gallons per day of "Equipment/Facility Washdown" water. Waste characteristics and discharge locations are uncertain based on information provided in the survey; however, a purchase order from NWM to Coffey Labs dated 26 June 1992 gives some insight (NWMAR147406-NWMAR147442). This purchase order covers a "water sample from main deck operations to be analyzed for heavy metals, and solvents

[52] Note that while this survey lists the address for NWM as 5555 N. Channel Ave (the Shipyard's address), a property diagram attached to the survey (at NWMAR147646) demonstrates that the survey relates to the Inland Property.

prior to city sewer discharge." The exact meaning of "main deck operations" is not known; however, these two documents suggest that NWM disposed of its washdown water into the city sewer system, and that NWM tested this washdown water prior to disposal to ensure that the water met discharge criteria.

The *1991 Wastewater Survey* (NWMAR147624-NWMAR147645, NWMAR147646) shows that NWM's sanitary wastes entered the municipal sanitary sewer system. Interviews with NWM's former employees (see Responses 16, 19, 34, 35, and 47) as well as numerous invoices for the disposal of liquid wastes (see Responses 40 and 42) suggest that other wastewaters were collected into drums or pump trucks and then subcontracted to other parties for proper on- or off-site disposal.

b. See Response 41(a).

c. To Respondent's knowledge, the only quantification of wastewater from the Shipyard is the aforementioned *1991 Wastewater Survey* (NWMAR147624-NWMAR147645, NWMAR147646). In this survey 243 gallons of sanitary wastewater entered the sanitary sewer every day.

d. See Response 18.

e. See Response 41(a)

<u>Shipyard</u>

a. NWM and Respondent regularly dealt with wastewaters during their operations at the Shipyard; however, the exact nature and amounts of these wastewaters is not known. Two environmental surveys from 19 August 1981 (NWMAR147620-NWMAR147623) and 31 August 1981 (NWMAR147694-NWMAR147697) specific to NWM's operations at the Shipyard demonstrate that NWM did not dispose of wastewater into the city storm sewer system at the Shipyard. Information specific to the disposal of wastewaters at that time was not discovered. It is unknown how often these activities may have occurred, although they were likely conducted at regular intervals such as weekly or daily. The volumes associated with these wash-down and cleaning activities would have been dependent on the equipment being washed.

b. See Response 41(a).

c. The volume of this wash-water is unknown, but would have roughly corresponded with the activity levels at the facility and the size of equipment being washed. NWM's number of employees, which would be expected to correlate with its activity levels, was highly variable, but generally was higher before the 1980s (up to a maximum of approximately 2,500) and lower thereafter (averaging approximately 1,000). See NWMAR023483, NWMAR059595-NWMAR059596,

NWMAR061689-NWMAR061708, NWMAR140742-NWMAR140745, NWMAR147378-NWMAR147379.

d. See Response 18.

e. See Response 41(a)

42. Identify any sewage authority or treatment works to which Respondent's waste was sent.

Response 42: Respondent sent sanitary waste into the City of Portland's sanitary sewer system, while other non-hazardous wastewaters entered the City of Portland's stormwater system (see, e.g., NWMAR147624-NWMAR147645, NWMAR147646, and Response 19). Respondent believes that NWM did the same for sanitary and non-hazardous wastewaters.

NWM and Respondent occasionally dealt with bilge water and regularly dealt with wastewaters generated as part of ship repair activities. Once a vessel docked, generally either the Port contracted directly with the vessel's owner or operator for the transportation and disposal of oily bilge or ballast waters or NWM would hire a subcontractor to collect and transport these oily waters to a disposal or reprocessing site. See response 40 for a summary of subcontractors NWM used for waste transportation and/or disposal.

However, on occasion NWM contracted directly with the Port to dispose of bilge waters. See, for example, Port billing records for NWM at NWMAR004761-NWMAR007920, NWMAR014306-NWMAR014517, NWMAR083552-NWMAR083810. Bilge water would have been disposed of at the BWTP after its construction in 1973. The Port has provided numerous right-of-entry permits for the BWTP for the late 1980s and early 1990s, and NWM is not found amongst those companies (see, e.g., POP0052045-POP0052061, POP0053364-POP0053465, POP0056726-POP0056796, POP0068289-POP0068308, POP0069714-POP0069818).[53] Respondent was unable to locate any such entry permits in documents within its possession or under its control; therefore Respondent believes that NWM subcontracted transportation of bilge water with other companies, as described in Response 40.

Prior to 1973, Respondent believes that NWM's waste handling and disposal practices evolved in accordance with standards and requirements contained in contemporary federal, state and local laws regulating use, handling and disposal of hazardous wastes and oil and as described in Port tariffs and in Shipyard use agreements.[54]

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[53] Submitted as attachments to the Port's 104(e) Responses for the Swan Island Upland Facility & Berth 311 (POP0138925-POP0139014).

[54] Generally, Port tariffs and Shipyard use agreements became more restrictive and more detailed in terms of the acceptable handling and disposal of hazardous wastes and oil over time. See, for example, port tariffs: NWMAR148239-NWMAR150643; and Shipyard use agreements:POP0052889-POP0052891, POP0056455-POP0056500, POP0057472-POP0057520, POP0058834-POP0058867, POP0059781-POP0059814. These tariffs were submitted as attachments to the Port's 104(e) Responses for the Swan Island Upland Facility & Berth 311 (POP0138925-POP0139014).

43. Describe all settling tank, septic system, or pretreatment system sludges or other treatment wastes resulting from Respondent's operations.

Response 43: To Respondent's knowledge, there were never any settling tanks, septic systems, or other pretreatment or treatment systems at either the Inland Property or the Shipyard operated by Respondent or NWM. The Port did operate such systems at the Shipyard at their BWTP, as described in Response 27. Respondent's wastes were, at most, collected and temporarily stored on-site at the Inland Property and Shipyard, with all treatment activities conducted at locations owned and operated by parties unaffiliated with Respondent (as per the procedures discussed in Responses 39-42). See also the detailed description of operational processes, NWMAR107173-NWMAR107207.

44. If applicable, describe the facilities, processes and methods Respondent or Respondent's contractor used, and activities engaged in, either currently or in the past, related to ship building, retrofitting, maintenance or repair, including, but not limited to, dry-docking operations, tank cleaning, painting and re-powering.

Response 44: NWM and Respondent engaged in ship retrofitting, maintenance, and repair operations at the Shipyard and supported by facilities and shops at the Inland Property. Generally, such ship repair operations included use of a dry dock or wet berth, shop space at either the Shipyard or Inland Property, and usage of the common areas of the Shipyard.

The most complete picture of NWM's and Respondent's ship repair operations can be found in the contracts for repair and overhauls of modern vessels, such as those from the 1980s for the USS Duluth (NWMAR024732-NWMAR025080) and the USNS Observation Island (NWMAR040003-NWMAR040191). For demonstrative purposes, the repair operations NWM conducted on these vessels included:

- Replacement of electronic combat systems such as RADAR, gyro compass, and weapon tracking systems (NWMAR024996);
- Repairs to vessel boilers, pumps, condensers, and gears (NWMAR025021, NWMAR040015);
- Structural and hull repairs (NWMAR025022);
- Propeller and other propulsion systems repairs (NWMAR025022);
- Repair and preservation of ballast, feedwater, and potable water tanks (NWMAR025022);
- Repair of the air ballast tank, pipes, and valves (NWMAR025023);
- Replacement of communications equipment such as RADAR, navigational, satellite, and communications antennae (NWMAR040015);
- Installation of new communications control and computer equipment (NWMAR040015);
- Upgrades and reconfiguration of crew, common, and void spaces on vessels (NWMAR040015-NWMAR040016);
- Repairs and modifications to HVAC systems (NWMAR040016);
- Upgrades to power systems and power supplies on vessels (NWMAR040016);

Related operations are discussed fully in Responses 5, 6, 10, 11, and 20 and the detailed description of operational processes, NWMAR107173-NWMAR107207.

45. Describe any hazardous substances, wastes, or materials used or generated by the activities described in response to the previous Question and how these hazardous substances, materials and wastes were released or disposed of.

Response 45: Based on the detailed description of operational processes (NWMAR107173-NWMAR107207), hazardous wastes and materials related to NWM's and Respondent's ship repair operations include:

- Oils and oily waters;
- Scrap wood, plastic, paper, cardboard;
- Scrap metal;
- Waste oil, lubricants, cutting fluids;
- Sanitary waste;
- Empty paint containers;
- Shop rags and other shop disposables;
- Waste paint;
- Spent solvents;
- Coolants, cleaning, and shop chemicals;
- Aerosol cans;
- Asbestos (if present on vessel); and
- PCB-containing materials (if present on vessel).

As part of NWM's standard operating procedures, waste products were segregated from non-hazardous wastes and transported offsite for disposal.

The 1991 *Environmental Survey for NWM's Operations at the Inland Property* (NWMAR147625-NWMAR147645, NWMAR147646) lists the following specific substances as "suspected present" at the Shipyard:

- Asbestos (fibrous);
- Arsenic (total);
- Benzene;
- Naphthalene;
- Pentachlorophenol;
- Toluene; and
- 1,1,1-trichloroethane.

See Response 40 for waste handlers, Responses 35 and 36 for waste properties, and Responses 10 and 11 for unauthorized releases of waste materials caused by NWM. See also the detailed description of operational processes, NWMAR107173-NWMAR107207.

46. Provide copies of any records you have in your possession, custody or control relative to the activities described in response to the previous two Questions.

Response 46: See documents referenced above in Response 45. In general, to the extent such records are in Respondent's possession or under Respondent's control, they are accessible through the electronic document repository. See, e.g., NWMAR000158-NWMAR000199, NWMAR000204-NWMAR000215, NWMAR013151-NWMAR014005.

47. Describe any process or activity conducted on a Property identified in response to Question 4 involving the acquisition, manufacture, use, storage, handling, disposal or release or threatened release of polychlorinated biphenyl(s) ("PCB(s)" or PCB(s)-containing materials or liquids.

Response 47: This response is based on Respondent's interviews of the following former personnel of NWM – William H. Zavin II (see Response 80), William M. Johnston (see Response 2) and Dana M. Austin (see Response 2).

These employee interviews indicate that waste materials containing hazardous substances, such as asbestos and PCBs, were identified prior to removal, segregated from other wastes and disposed of in compliance with applicable regulatory requirements. For example, Respondent removed and disposed PCB-containing gasket materials from the USS Standley in July 1991 (NWMAR014596-NWMAR014598). Wastes not requiring special handling were placed into 55-gallon drums in the various shop areas. When these drums were full they were transported to a paved, covered, and bermed waste storage facility outside Building #2 for profiling and offsite disposal.

Such waste handling procedures are corroborated by the *1991 Wastewater Survey*[55] (NWMAR147624-NWMAR147645, NWMAR147646) notes that "paints, solvents, degreasers are consolidated into DOT approved 55 gallon drums and stored for transportation" (NWMAR147629). The survey states that NWM contracted with Chemical Hauling Corporation (identified in Responses 40(a) and 40(b)) to transport these waste products to an offsite disposal facility.

The same environmental survey notes that NWM was storing 136 lbs of PCB's at the Inland Property. Based on a receipt, invoice, and uniform hazardous waste manifest with Chemical Waste Management, Inc. for disposal of this PCB material (NWMAR013151-NWMAR013156), this material was three 55-gallon drums containing "PCB contaminated solids" (NWMAR013151) originating from the USS Standley (NWMAR013155). Again, these documents corroborate the waste handling procedures described by the former employees listed above.

In the past, liquid PCBs were common in dielectric fluids for transformer cooling. In addition, many Navy and commercial ships built prior to 1970 contained solid PCBs in various components, such as plastics, rubbers, adhesives, gaskets, power cable insulation and other commercial nonmetal products (see NWMAR055388). The U.S. Maritime Administration has performed extensive sampling of its inactive reserve fleet, in anticipation of disposal of these ships, and has identified an occasional ship that contained PCBs in the exterior hull coatings. The Maritime Administration has been unable to determine the source of PCBs in these marine coats and believes that the contamination may have occurred outside the U.S. when a ship was repainted overseas, using locally available coatings.[56] Other sources of information related to

[55] See discussion of the 8 November 1991 environmental survey's location at Response 41(a).
[56] Personal Communication from William Barnes, Maritime Administration, to Dana Austin, on 12 August 2008.

PCBs aboard naval vessels suggest that PCBs were potentially used in domestic marine paints as well. Reference materials discussing PCBs on marine vessels are provided at NWMAR107315-NWMAR107588, NWMAR114711-NWMAR114781, and NWMAR114782-NWMAR114802.

When NWM contracted to work on vessels containing liquid PCBs or liquid PCB containing materials (which to the best of the former employees' recollections were only U.S. military vessels), NWM required the vessel owner (e.g., the U.S. Navy) to remove, store, handle and/or dispose of such materials, except as noted below with respect to PCB-containing light ballasts. The U.S. Navy notified its contractors on 21 August 1990 that Navy ships may also be contaminated with solid PCB-containing materials (NWMAR055388). On rare occasions and again only in connection with U.S. military vessels,[57] NWM would remove, store, handle and/or dispose of such solid PCB-containing materials, like flange gaskets (see NWMAR014596-NWMAR014598, documentation of testing of gasket materials for PCBs on USS Standley). An invoice from Dexsil Corp. for NWM's purchase of 10 field screening kits for PCBs in liquids, dated 7 April 1992, demonstrates that NWM did screen some liquids for PCBs (NWMAR147443-NWMAR147450), although it is unknown whether the specific liquids tested with these kits were waste materials or liquids tangential to ship repair operations, such as transformer or hydraulic oils.

Respondent has not identified any information indicating that Respondent or NWM ever conducted any processes or activities at the Shipyard or on the Inland Property that involved the acquisition, manufacture, use, storage, handling, disposal or release of PCBs or PCB-containing materials or liquids, except for the above-described specific and infrequent processes and activities conducted on U.S. military vessels involving solid PCB-containing materials.

Electrical transformers potentially filled with PCB-containing dielectric fluid were present on the Inland Property and the Shipyard. Multiple sources (e.g., NWMAR106640, POP0106407-POP0106408, POP0106437-POP0106449, POP0112587-POP0112601)[58] indicate that the Port owned the transformers at the Shipyard, though it is uncertain who owned this equipment at the Inland Property. NWMAR021782 indicates the presence of eleven 200 kilovolt-ampere transformers observed in the primary facility located on the Inland Property. Four transformers were dry-type, one was labeled non-PCB containing, and six were unknown. Many documents highlight a history of leaking transformers and poor maintenance of PCB-contaminated electrical systems:

- In 1998, staining was observed on the concrete around the base of one of the transformers at the Inland Property (162-200). The *Phase Two Environmental Investigation Report* (NWMAR020485-NWMAR020531) indicates a wipe test found the stained area contained 20 micrograms of PCB Aroclor 1260 within a 100 square centimeter area (NWMAR020491). This report also states that "the oil-staining does not present a concern for subsurface contamination" (NWMAR020492) and that there did "not appear

[57] In fact, Respondent has documentation that these processes or activities occurred on only one occasion, in connection with NWM's work on the USS Standley. See, e.g., NWMAR036487 and NWMAR014596-NWMAR014598.

[58] Port documents submitted as attachments to the Port's 104(e) Responses for the Swan Island Upland Facility & Berth 311 (POP0138925-POP0139014).

to be significant environmental concerns associated with the existing onsite transformers" (NWMAR020495);

- The *Polychlorinated Biphenyl Inventory and Disposal Recommendations Report* (POP0111728-POP0111833)[58] found staining of 450,000 ppm and 490,000 ppm PCBs at two transformers located at Substation 1 at the Shipyard (POP0111733, POP0111749). It is unknown if electrical transformers potentially filled with PCB-containing dielectric fluid were present at the other properties at which Respondent is associated;
- Test of Port transformers in 1990 by Grasle Electric (POP0112587-POP0112601)[58] found PCB concentrations of approximately 30 ppm in the transformer oil present at Substation 3 of the Shipyard;
- The *Phase II RI Work Plan Addendum, Operable Unit 1* (POP0081636-POP0081807)[58] found that soil near the transformers at Shipyard Substation 4 contained between 10-35 ppm PCBs, soil near Shipyard Substation 5 had 10-24 ppm PCBs, and near Shipyard Substation 6 had 11-210 ppm PCBs. This report also states that soil around the Central Utility Building of the Shipyard had approximately 120 ppm PCBs; and
- A series of transformer inspection reports from April 1985 (POP0106437-POP0106449)[58] highlights the generally poor condition of PCB containing transformers at the Shipyard. In the reports, 9 of 11 transformers are noted to be leaking and all but one are noted to contain Pyranol or PCBs. "Puddling" of oil is noted beneath several transformers. A 5-gallon can of Pyranol is observed as being stored in the dry dock wingwalls for "additive."

48. For each process or activity identified in response to the previous Question, describe the dates and duration of the activity or process and the quantity and type of PCB(s) or PCB(s) containing materials or liquids.

Response 48: Respondent is aware of two specific incidents related to Respondent's operations involving PCBs. In July 1991, Respondent removed and contracted with Chemical Waste Management, Inc. (identified in Response 40) for the proper disposal of three 55-gallon drums of PCB-containing solids from the U.S. Naval vessel USS William H. Standley. See NWMAR013151-NWMAR013156, NWMAR014596-NWMAR014598 and NWMAR014658-NWMAR014661.[59]

The *1991 Wastewater Survey* indicates PCBs were stored at least temporarily at the Inland Property; however, this survey does not give an indication as to the duration or regularity of Respondent's PCB storage at the Shipyard (NWMAR147624-NWMAR147645, NWMAR147646). Respondent does not know with certainty the source of the PCB-containing waste recorded in the 1991 wastewater survey, but it most likely was the USS Standley. Based on a receipt, invoice, and uniform hazardous waste manifest from Chemical Waste Management, Inc. ("CWM") for the disposal of PCB-containing materials in 1991 (NWMAR013151-NWMAR013156), CWM disposed of three 55-gallon drums containing "PCB contaminated solids" (NWMAR013151) originating from the USS Standley (NWMAR013155). The uniform hazardous waste manifest and certification of disposal (NWMAR013153-NWMAR013154) are

[59] For NWM's standard subcontract terms and conditions, incorporated by reference into NWM's purchase orders, see NWMAR052049-NWMAR052064 and NWMAR071149-NWMAR071279.

dated 19 July 1991 and 23 July 1991, respectively. The timing of these disposal documents, as well as the solid nature and quantity of the PCB-contaminated material disposed by CWM, suggest strongly that these three drums of PCB-contaminated solids from the USS Standley are the 136 pounds of PCB-containing materials listed in the 1991 wastewater survey. See also Responses 41 and 47.

49. For each process or activity identified in response to the previous two Questions, identify the location of the process or activity on the property.

Response 49: While in the Portland Harbor, the USS Standley was located at Berth No. 305 and Dry Dock No. 3 of the Shipyard. See NWMAR006544-NWMAR006558.

Storage of PCB's occurred at the Inland Property, but no documented descriptions of specific storage locations were discovered. Generally, wastes not requiring special handling were placed into 55-gallon drums in the various shop areas. When these drums were full they were transported to a paved, covered and bermed waste storage facility outside Building #2 for profiling and offsite disposal. Chemical Hauling Corporation and Chemical Waste Management, Inc. were contracted to dispose of wastes at 11811 Upham St., Broomfield, CO, 80020 (see NWMAR147624-NWMAR147645, NWMAR147646, NWMAR013151-NWMAR013156).

The 1991 environmental survey does not given an indication as to the location of NWM's PCB storage at the Inland Property (NWMAR147624-NWMAR147645, NWMAR147646). See also Responses 41, 47, and 48.

Section 5.0 Regulatory Information

50. Identify all federal, state and local authorities that regulated the owner or operator of each Property and/or that interacted with the owner or operator of each Property. Your response is to address all interactions and in particular all contacts from agencies/departments that dealt with health and safety issues and/or environmental concerns.

Response 50: Respondent is unable to respond to this request with respect to owners or operators of a Property other than Respondent or NWM. With respect to Respondent and NWM, the relevant regulatory authorities are listed below. To the extent records regarding specific interactions and contacts in Respondent's possession or under Respondent's control, they are contained in the electronic document database. See specifically the references listed below.

Federal Agencies:

U.S. Coast Guard (NWMAR032981-NWMAR032988, NWMAR053722, NWMAR055510-NWMAR055511, NWMAR055716, NWMAR056257, NWMAR058280-NWMAR059345, NWMAR062489, NWMAR066286-NWMAR066486, NWMAR084801, NWMAR086431-NWMAR088974, NWMAR088872-NWMAR088978, NWMAR093585, NWMAR096859, NWMAR099399, NWMAR099507, NWMAR119973-NWMAR119981, NWMAR125214-NWMAR125940, NWMAR128958-NWMAR129078, NWMAR136313-NWMAR136314);

U.S. Department of Commerce (pre-1981)
Maritime Administration (NWMAR061484-NWMAR061811);
U.S. Department of Defense (NWMAR126801-NWMAR126868, NWMAR129801-NWMAR129802);
Defense Contract Audit Agency (NWMAR055239-NWMAR055440, NWMAR063255-NWMAR063263, NWMAR081884-NWMAR082930, NWMAR084032, NWMAR088161-NWMAR088162, NWMAR088320-NWMAR088336, NWMAR119777-NWMAR119797, NWMAR124955-NWMAR124956, NWMAR126869-NWMAR127320, NWMAR129092-NWMAR129108, NWMAR129759-NWMAR129800, NWMAR130415);
U.S. Department of the Navy (LOC0000808-LOC0000810, NAR10004380, NWMAR022442-NWMAR066507, NWMAR081925-NWMAR139476, POP0069603-POP0069606, NWMAR150646-NWMAR150648);[60]
U.S. Department of Labor
Occupational Safety & Health Administration (NWMAR033926-NWMAR033969, NWMAR071496-NWMAR071744, NWMAR071776-NWMAR071778);
U.S. Department of Transportation (post-1981)
Maritime Administration (NWMAR062113-NWMAR062191);
U.S. Environmental Protection Agency (NWMAR147859-NWMAR147863, NWMAR147864-NWMAR147868);

State Agencies:

Alaska Department of Transportation and Public Facilities (NWMAR055674, NWMAR055764, NWMAR056143-NWMAR056145, NWMAR056573, NWMAR089992-NWMAR090017, NWMAR090469-NWMAR091842, NWMAR091868-NWMAR092343, NWMAR092468-NWMAR092818, NWMAR119470-NWMAR119602);

California Department of Consumer Affairs (NWMAR058482-NWMAR058485);
California Secretary of State (NWMAR017747, NWMAR066653, NWMAR066657);
State of California (NWMAR021185-NWMAR021188);

State of Idaho (NWMAR051170-NWMAR051189);

Oregon Construction Contractors Board (NWMAR066659-NWMAR066718);
Oregon Department of Environmental Quality (NWMAR000655-NWMAR000683, NWMAR002115-NWMAR002124, NWMAR009613-NWMAR009614, NWMAR010097-NWMAR010125, NWMAR11344, NWMAR012583-NWMAR012775, NWMAR056271-NWMAR056276, NWMAR058095-NWMAR058096, NWMAR071841-NWMAR071878, NWMAR073085-NWMAR073088, NWMAR074954-NWMAR076486, NWMAR078890-NWMAR078892, NWMAR093570-NWMAR093572, NWMAR147378-NWMAR147379, POP0096146, POP0104560-POP0104572, NWMAR150649-NWMAR150650);[60]
Oregon Department of General Services (NWMAR097006);
Oregon Department of Human Resources (NWMAR095262-NWMAR095585);

[60] Port documents submitted as attachments to the Port's 104(e) Responses for the Swan Island Upland Facility & Berth 311 (POP0138925-POP0139014).

Oregon Department of Transportation, Motor Vehicles Division (NWMAR049328-NWMAR049329, NWMAR056091-NWMAR056095, NWMAR068445-NWMAR068446, NWMAR094905, NWMAR096890);
Oregon Secretary of State (NWMAR065749-NWMAR065752, NWMAR066646-NWMAR066658, NWMAR103126-NWMAR103151, NWMAR104663-NWMAR104666, NWMAR105493-NWMAR105494, NWMAR106728-NWMAR106729);
State of Oregon (NWMAR021190-NWMAR021192);

Washington Department of Licensing (NWMAR066566-NWMAR066592).

County Agencies:
Multnomah County
Department of Assessment and Taxation (NWMAR095591, NWMAR123539, NWMAR123546);

Local Agencies:

City of Portland (NWMAR040483, NWMAR040484, NWMAR041004, NWMAR041007, NWMAR041167, NWMAR041170, NWMAR056361, NWMAR058335, NWMAR066766-NWMAR066832);
Bureau of Buildings (NWMAR017413, NWMAR150644, NWMAR150653, NWMAR150654-NWMAR150655, NWMAR150656, NWMAR150664);
Bureau of Environmental Services (NWMAR147624-NWMAR147645, NWMAR147646);
Bureau of Fire (NWMAR150651, NWMAR150652);
Bureau of Fire, Rescue and Emergency Services (NWMAR147702-NWMAR147704);
Bureau of Licenses (NWMAR017561-NWMAR017562);
Bureau of Planning (NWMAR021075-NWMAR021124);
Bureau of Purchases and Stores (NWMAR040484-NWMAR040485, NWMAR066729-NWMAR066731, NWMAR066733-NWMAR066734, NWMAR066836-NWMAR066838);
Bureau of Water Works (NWMAR002111, NWMAR017418, NWMAR021414, NWMAR123673, NWMAR139735);
Chamber of Commerce (NWMAR135177, NWMAR135219);
Department of Public Works (NWMAR147620-NWMAR147623, NWMAR147694-NWMAR147697, NWMAR147698-NWMAR147701, POP0076935, NWMAR150657-NWMAR150663);
Fire Marshall (NWMAR036549);
Harbormaster (NWMAR002055-NWMAR002056, NWMAR002057, NWMAR123711-NWMAR123712, NWMAR123713);
Mayor (NWMAR058197, NWMAR058331, NWMAR058593);
Office of Transportation (NWMAR017607-NWMAR017608, NWMAR066752, NWMAR066753).

51. Describe all occurrences associated with violations, citations, deficiencies, and/or accidents concerning each Property during the period being investigated related to health and safety issues and/or environmental concerns. Provide copies of all documents associated with each occurrence described.

Response 51: To Respondent's knowledge, no citations were issued to Respondent and only five citations were issued to NWM during NWM's operations at the Shipyard, as described below.

On 22 March 1984, NWM received a citation from the City of Portland Bureau of Fire, Rescue and Emergency Services for cutting and welding occurring without a permit (NWMAR147702). The citation locates the infraction at "5555 N. Lagoon, Northwest Marine & Iron Works." This address corresponds to the Shipyard.

On 26 August 1988, NWM received a letter from ODEQ noting a potential water quality violation for an unpermitted discharge of sandblast grit to the River (POP0138974, NWMAR150649-NWMAR150650). Despite the potential water quality violation, the letter stated that NWM was "in compliance with the conditions of the Air Contaminant Discharge Permit." The letter also noted that ODEQ may no longer require NWM to have a permit for VOC and particulate air emissions.

On 11 January 1990, the Secretary of the U.S. Department of Labor filed a complaint against NWM with the Occupational Safety and Health Review Commission as Docket No. 89-3539 regarding asbestos handling on the Dutch-Holland Cruise Line Vessel Rotterdam. The complaint was settled without Respondent admitting the validity of the alleged violations. See NWMAR074877-NWMAR074878 (internal memorandum regarding asbestos precautions), NWMAR071538-NWMAR071547 (complaint), NWMAR071526-NWMAR071531 (answer), NWMAR071714-NWMAR071716 (settlement agreement).

Based on 30 January 1990 newspaper articles (POP0116137),[61] NWM was fined a total of $14,200 for violations by the U.S. Labor Department's Occupational Safety and Health Administration. The violations stemmed from a fire aboard the Bermuda Star, a cruise ship NWM was repairing. The citation was for failure to post a fire watch on shore during repairs, failure to have guardrails on scaffolding, and failure to enforce life-vest usage on above-water scaffolding.

A letter dated 29 October 1998 from ODEQ to Respondent (then known as Southwest Marine and doing business as NWM) reports that NWM failed to file an Annual Hazardous Waste Report for 1997 (NWMAR009614). Respondent found no other information regarding this incident; however, NWM's failure to report in 1997 is likely due to the fact NWM ceased to exist in 1992, and Respondent ended all involvement with the Inland Property in 1997. This situation was explained to ODEQ in a letter from Respondent dated 16 November 1998 (NWMAR009613). See Response 5.

Two sources denote deficiencies in NWM's operational procedures. The first is a set of letters from the Port requiring that NWM stop disposing of sandblast grit on Port-owned and NWM-leased property around the Shipyard (NWMAR010234, NWMAR140013-NWMAR140014). The second is Respondent's 1989 due diligence report (NWMAR106635-NWMAR106682)

[61] Submitted as an attachment to the Port's 104(e) Responses for the Swan Island Upland Facility & Berth 311 (POP0138925-POP0139014).

regarding NWM's operations, which notes that "the [health and safety related] accident incident rate for [NWM] is three times the worst of our divisions" (NWMAR106640, emphasis in original), but that generally NWM conducted a "nice, clean activity [that was] staffed by professionals" (NWMAR106643).

Additionally, Respondent is aware of two incidents of known asbestos exposure as part of NWM's operations. On 28 June 1989, a personal air sample taken aboard the Exxon Baton Rouge found an unacceptably high asbestos reading (0.52 F/cc) and action was taken by supervisors to reduce the number of locations worked simultaneously so that engineering controls and containment were more effective (NWMAR076628, NWMAR076686, NWMAR076731, NWMAR076778). On 14 July 1989, a worker was cutting paneling known to contain asbestos aboard the Exxon Baton Rouge and was exposed to asbestos of an unspecified nature (NWMAR076754).

For comparative purposes, the Port describes 31 injury accidents between 1 March 1953 and 11 November 1990, 21 violations issued to the Port between 1 August 1966 and 22 October 1996, and 22 violations issued to other parties operating at the Shipyard between 4 September 1985 and January 1990 (POP0138972-POP0138976). Violations and citations issued to the Port and other parties relate to:

- Unauthorized releases of oils, oily water, or other liquids into the Willamette River or drains;
- Violations of restrictions on the quantity and character of emissions into the air;
- Workplace cleanliness and safety issues;
- Improper storage and handling of hazardous materials and wastes; and
- Permit expirations and non-compliance issues.

For details related to these violations, citations, deficiencies, and accidents at the Port, see Response 51 of the Port's 104(e) Responses for the Swan Island Upland Facility & Berth 311 (POP0138972-POP0138976).

Furthermore, there were numerous spills and release events at the Shipyard that were not associated with a citation or documented violation. Such events are described in Responses 10, 11, and 62.

52. Provide a list of all local, state and federal environmental permits ever issued to the owner or operator on each Property (e.g., RCRA permits, NPDES permits, etc.). Please provide a copy of each federal and state permit, and the applications for each permit, ever issued to the owner or operator on each Property.

Response 52: It was and is Respondent's understanding that the Port was required to maintain permits for activities occurring at the Shipyard. Respondent's 1989 due diligence report (NWMAR106635-NWMAR106682) corroborates this fact. As such, see Response 52 of the Port's 104(e) Responses for the Swan Island Upland Facility & Berth 311 (POP0138976-POP0138980). The Port summarizes 38 permits issued to the Port and 8 permits involving other parties.

Generally, NWM and Respondent operated under the Port's tariffs and ordinances (e.g.,

NWMAR054093-NWMAR054094, NWMAR119062-NWMAR119064, NWMAR119065-NWMAR119078, POP0052889-POP0052891, POP0056455-POP0056500, POP0057472-POP0057520, NWMAR148239-NWMAR150643).[62] However, in September of 1991, near the end of Respondent's active operations, representative of NWM, Cascade General, and West State joined with Port officials to create a unified set of environmental standards called "Best Management Practices" (NWMAR010368-NWMAR010369). A copy of these "Best Management Practices" from January 1992 can be found at NWMAR010370-NWMAR010407.

Respondent is aware of the following permits granted by ODEQ to NWM or correspondence between ODEQ and NWM:

- Air Contaminant Discharge Permit 26-3101 granted on 15 March 1984[63] (POP0104560-POP0104572).[62] Permit 26-3101 allowed for the release of specific quantities of VOCs and particulates as part of NWM's sandblasting operations. On 26 November 1993, the ownership of Permit 26-3101 changed from NWM to Cascade General, Inc. (POP0110426-POP0110435); and
- Numerous asbestos removal notifications[64], licenses[65], waste shipment records[66], and quarterly/monthly reports[67] ranging from 6 January 1986 to 1 January 1992 (asbestos files located generally at NWMAR071745-NWMAR071775, NWMAR071779-NWMAR079602).

Respondent did not discover any other local, state, or federal environmental permits issued to NWM or Respondent for the Inland Property.

53. Did the owner or operator ever file a Hazardous Waste Activity Notification under the RCRA? If so, provide a copy of such notification.

Response 53: Respondent did not discover any Hazardous Waste Activity Notifications filed by NWM or Respondent for the Inland Property, Shipyard, or St. Johns Dry Dock. The Port, as owner of the Shipyard, filed Hazardous Waste Activity Notifications as described at POP0138980.

54. Did the owner or operator's facility on each Property ever have "interim status" under the RCRA? If so, and the facility does not currently have interim status; describe the circumstances under which the facility lost interim status.

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[62] Port documents submitted as attachments to the Port's 104(e) Responses for the Swan Island Upland Facility & Berth 311 (POP0138925-POP0139014).
[63] Note that the Port's 104(e) Response 52 incorrectly lists the date for Air Contaminant Discharge Permit 26-3101 as 5 March 1985 (POP0138980).
[64] NWMAR071842-NWMAR071877, NWMAR073085-NWMAR073088, NWMAR074953-NWMAR075053, NWMAR075234-NWMAR075235, NWMAR075950, NWMAR076122-NWMAR076184, NWMAR076385-NWMAR076389, NWMAR076391-NWMAR076394, NWMAR076649, NWMAR077060, NWMAR077519, NWMAR077570.
[65] NWMAR076079-NWMAR076120, NWMAR078852-NWMAR078885.
[66] NWMAR013862, NWMAR075869, NWMAR075870.
[67] NWMAR075868-NWMAR075952, NWMAR076125-NWMAR076185.

Response 54: No.

55. Provide all RCRA Identification Numbers issued to Respondent by EPA or a state for Respondent's operations.

Response 55: ID # ORD980665368

56. Identify all federal offices to which Respondent has sent or filed hazardous substance or hazardous waste information. State the years during which such information was sent/filed.

Response 56: See Responses 50 and 52. Respondent is unaware of any federal offices where NWM or Respondent filed hazardous waste or substance information.

57. Identify all state offices to which Respondent has sent or filed hazardous substance or hazardous waste information. State the years during which such information was sent/filed.

Response 57: See Responses 50 and 52. Respondent discovered the *1991 ODEQ Site Report* (NWMAR147378-NWMAR147379) that NWM filed with ODEQ. This Site Report lists NWM as "Inactive (11/25/1997)." NWM ceased to exist as an active entity in 1992. See Responses 21 and 26 for details about NWM's 1991 Hazardous Waste Site Report.

Respondent also found a notice to NWM from ODEQ over a failure to submit a hazardous material report in 1997 (NWMAR009614), five years after NWM ceased operations at the Shipyard and Inland Property.

NWM submitted numerous hazardous waste reports, notifications, and license requests to ODEQ related to its work on asbestos-containing vessels. Specifically, see Response 52 for details.

58. List all federal and state environmental laws and regulations under which Respondent has reported to federal or state governments, including but not limited to: Toxic Substances Control Act, 15 U.S.C. Sections 2601 et seq., (TSCA); Emergency Planning and Community Right-to-Know Act, 42 U.S.C. Sections 1101 et seq., (EPCRA); and the Clean Water Act (the Water Pollution Prevention and Control Act), 33 U.S.C. Sections 1251 et seq., Oregon Hazardous Substance Remedial Action Law, ORS 465.315, Oregon Water Quality law, ORS Chapter 468(b), Oregon Hazardous Waste and Hazardous Materials law, ORS Chapters 465 and 466, or Oregon Solid Waste law, ORS Chapter 459. Provide copies of each report made, or if only oral reporting was required, identify the federal and state offices to which such report was made.

Response 58: See Responses 50 and 51. To the extent such reports are in Respondent's possession or under Respondent's control, they are contained in the electronic document database. Specifically see NWMAR013118-NWMAR015527.

59. Provide a copy of any registrations, notifications, inspections or reports required by the

Toxic Substances Control Act, 15 USC § 2601 et seq., or state law, to be maintained or submitted to any government agency, including fire marshal(s), relating to PCB(s) or PCB(s) containing materials or liquids on any Property identified in response to Question 4.

Response 59: No reports under TSCA related to Respondent or NWM were discovered.

60. Has Respondent or Respondent's contractors, lessees, tenants, or agents ever contacted, provided notice to, or made a report to the Oregon Department of State Lands ("DSL") or any other state agency concerning an incident, accident, spill, release, or other event involving Respondent's leased state aquatic lands? If so, describe each incident, accident, spill, release, or other event and provide copies of all communications between Respondent or its agents and DSL or the other state agency and all documents that were exchanged between Respondent, its agents and DSL or other state agency.

Response 60: Respondent has never leased state aquatic lands.

61. Describe all notice or reporting requirements to DSL that you had under an aquatic lands lease or state law or regulation regarding incidents affecting, or activities or operations occurring on leased aquatic lands. Include the nature of the matter required to be reported and the office or official to whom the notice or report went to. Provide copies of all such notices or reports.

Response 61: Respondent has never leased state aquatic lands.

Section 6.0 Releases and Remediation

62. Identify all leaks, spills, or releases into the environment of any waste, including petroleum, hazardous substances, pollutants, or contaminants, that have occurred at or from each Property, which includes any aquatic lands owned or leased by Respondent. In addition, identify, and provide copies of any documents regarding:

- **a. when such releases occurred;**
- **b. how the releases occurred (e.g. when the substances were being stored, delivered by a vendor, transported or transferred (to or from any tanks, drums, barrels, or recovery units), and treated);**
- **c. the amount of each hazardous substances, pollutants, or contaminants so released;**
- **d. where such releases occurred;**
- **e. any and all activities undertaken in response to each such release or threatened release, including the notification of any agencies or governmental units about the release;**
- **f. any and all investigations of the circumstances, nature, extent or location of each release or threatened release including, the results of any soil, water (ground and surface), or air testing undertaken;**
- **g. all persons with information relating to these releases; and**
- **h. list all local, state, or federal departments or agencies notified of the release,**

if applicable.

Response 62: Previously, Respondent was associated with multiple properties within the boundaries of the Portland Harbor Superfund Site, each of which is discussed separately below. All information known to Respondent related to St. Johns Dry Dock has already been discussed, and will not be repeated in this response (see Response 20).

Inland Property
Respondent has identified very few documented leaks, spills, or specific release events at the Inland Property. Generally, wash-down water was recorded to have entered the drains at the Inland Property during NWM's operations (see Responses 13, 18, 19, and 63). A 1998 environmental survey of the Inland Property (NWMAR021717-NWMAR021763) identified one electrical transformer inside a building with an oil stain beneath it (see Response 71). See also Responses 10(c) and 11(d).

Shipyard
Respondent is aware of 208 known release events at the Shipyard. Parties other than NWM and Respondent are responsible for 191 of these events. There are 17 release events at the Shipyard that are associated at least in part with NWM or Respondent between 1943 and 1992 (see Responses 10(c) and 11(d)). Thus, NWM and Respondent were cummulatively associated with a total of 12% of known release events. For information pertaining to subparts (a) through (h) for these releases, see POP0138895-POP0138924.[68]

Respondent is also aware of numerous reports of leaking or damaged electrical transformers located around the Shipyard. For example, the Port takes responsibility for 42 leaking transformers at the Shipyard (see POP0138895-POP0138924).[68] See Responses 47-49 for more information related to Respondent's knowledge of leaking transformers as a potential source of PCB contamination at the Shipyard.

63. Was there ever a spill, leak, release or discharge of waste, including petroleum, or hazardous substances, pollutant or contaminant into any subsurface disposal system or floor drain inside or under a building on the Property? If the answer to the preceding question is anything but an unqualified "no", identify:

- **a. where the disposal system or floor drains were located;**
- **b. when the disposal system or floor drains were installed;**
- **c. whether the disposal system or floor drains were connected to pipes;**
- **d. where such pipes were located and emptied;**
- **e. when such pipes were installed;**
- **f. how and when such pipes were replaced, or repaired; and**
- **g. whether such pipes ever leaked or in any way released such waste or hazardous substances into the environment.**

Response 63: Previously, Respondent was associated with multiple properties within the

[68] Submitted as an attachment to the Port's 104(e) Responses for the Swan Island Upland Facility & Berth 311 (POP0138925-POP0139014).

boundaries of the Portland Harbor Superfund Site, each of which will be discussed separately below.

Inland Property

No specific documented releases are known to have occurred at the Inland Property during Respondent's or NWM's operations there. Generally, the only known source of discharge into the drains at the Inland Property was stormwater and possibly equipment wash-down runoff as described in NWMAR147624-NWMAR147645 and Responses 18 and 42. For spill procedures specific to the operation of vacuum trucks, see Response 35. In general, see Appendix 1: NWM Process Flow Charts to this detailed description for an explanation of how spills in Respondent's shops were contained and cleaned up (NWMAR107208-NWMAR107235).

a. Based on the maps located at NWMAR147646 and NWMAR106628, there were at least a dozen floor drains located at the Inland Property, with six located inside the main structure (Building #2) and about a dozen located outside of Building #2. Site investigations detailed in the 2006 PBS Engineering and Environmental report indicate at least one and potentially more of these stormwater catch basins were welded shut, which prevented stormwater from being conveyed (NWMAR000594). Standing water was observed in this catch basin, indicating a sufficiently tight seal that would prevent water from entering the stormwater conveyance line. The date associated with sealing of these catch basins is unknown. See also Responses 13, 18, and 19.

b. The exact date of the installation of these floor drains is unknown. Based on the history of storm drains at Swan Island described in Response 18, the Inland Property's system of floor drains would have been installed either in 1942 during Kaiser's development of the Swan Island into a shipyard, or between 1962-1964 during the Port's expansion and redevelopment of the Swan Island storm drainage network.

c. Based on the maps discussed in Response 63(a), these floor drains were connected to pipes.

d. Based on the maps discussed in Response 63(a), these floor drains led into the storm drain network beneath Swan Island. See Responses 13, 18, and 19.

e. Respondent has no specific knowledge of the installation of any pipes associated with the drainage network at the Inland Property. Based on the history of storm drains at Swan Island described in Response 18, the piping for the Inland Property's drainage network would have been installed either in 1942 during Kaiser's development of the Swan Island into a shipyard, or between 1962-1964 during the Port's expansion and redevelopment of the Swan Island storm drainage network.

f. Respondent has no specific knowledge of the replacement or repair of any pipes associated with the drainage network at the Inland Property.

g. Respondent has no specific knowledge of leaks or releases associated with any pipes associated with the drainage network at the Inland Property.

Shipyard

To Respondent's knowledge, there is only a single recorded incident of NWM releasing unauthorized waste through the storm drains at the Shipyard (based on the history of releases at the Shipyard from the Port, POP0138895-POP0138924).[69] Details about this 17 April 1991 release event can be found in Response 18 and at POP138905. Generally, only stormwater runoff would have entered the drains at the Shipyard as part of Respondent's normal operating procedures, as described in Response 18.

a. Based on the map located at NWMAR110426, there were approximately 100 drains located around the Shipyard in the outside yard area and approximately 100 drainage holes and catch basins on the berths at the Shipyard. See Responses 13, 18, and 19 for more details.

b. The exact date of the installation of these floor drains is unknown. Based on the history of storm drains at Swan Island described in Response 18, the Inland Property's system of floor drains would have been installed either in 1942 during Kaiser's development of the Swan Island into a shipyard, or between 1962-1964 during the Port's expansion and redevelopment of the Swan Island storm drainage network.

c. Based on the maps discussed in Response 63(a), these floor drains were connected to pipes.

d. Based on the maps discussed in Response 63(a), these floor drains led into the storm drain network beneath Swan Island. See Responses 13, 18, and 19.

e. Respondent has no specific knowledge of the installation of any pipes associated with the drainage network at the Shipyard. Based on the history of storm drains at Swan Island described in Response 18, the piping for the Shipyard's drainage network would have been installed either in 1942 during Kaiser's development of the Swan Island into a shipyard, or between 1962-1964 during the Port's expansion and redevelopment of the Swan Island storm drainage network.

f. Respondent has no specific knowledge of the replacement or repair of any pipes associated with the drainage network at the Shipyard.

g. Respondent has no specific knowledge of leaks or releases associated with any pipes associated with the drainage network at the Shipyard.

64. Has any contaminated soil ever been excavated or removed from the Property? Unless the answer to the preceding question is anything besides an unequivocal "no", identify

[69] Submitted as an attachment to the Port's 104(e) Responses for the Swan Island Upland Facility & Berth 311 (POP0138925-POP0139014).

and provide copies of any documents regarding:

a. **amount of soil excavated;**
b. **location of excavation presented on a map or aerial photograph;**
c. **manner and place of disposal and/or storage of excavated soil;**
d. **dates of soil excavation;**
e. **identity of persons who excavated or removed the soil, if other than a contractor for Respondent;**
f. **reason for soil excavation;**
g. **whether the excavation or removed soil contained hazardous substances, pollutants or contaminants, including petroleum, what constituents the soil contained, and why the soil contained such constituents;**
h. **all analyses or tests and results of analyses of the soil that was removed from the Property;**
i. **all analyses or tests and results of analyses of the excavated area after the soil was removed from the Property; and**
j. **all persons, including contractors, with information about (a) through (i) of this request.**

Response 64: Respondent is unaware of any excavation or removal of contaminated soil conducted by Respondent at the Inland Property or Shipyard during Respondent's Active Operations Period.

The Port's 104(e) for the Swan Island Upland Facility & Berth 311 summarizes 18 different instances of contaminated soil being excavated from the Shipyard (see POP0138983-POP0138990). Generally, these soil removals were conducted in coordination with the removal of leaking underground storage tanks or as responses to spills or releases. The contaminants within these soils varied, but included PCBs, PAHs, petroleum hydrocarbons, and VOCs.

65. Have you ever tested the groundwater under your Property? If so, please provide copies of all data, analysis, and reports generated from such testing.

Response 65: Yes. Two groundwater studies were conducted at NWM's or Respondent's request: the 1989 *(Revised) Phase II Environmental Property Transfer Assessment, Northwest Marine Iron Works, Portland, Oregon* (NWMAR032701-NWMAR032745) and the 1998 *Phase Two Environmental Investigation Report, 5555 N Channel Avenue, Portland Oregon* (NWMAR021717-NWMAR021763). See Responses 15 and 71.

66. Have you treated, pumped, or taken any kind of response action on groundwater under your Property? Unless the answer to the preceding question is anything besides an unequivocal "no", identify and provide copies of any documents regarding:

a. **reason for groundwater action;**
b. **whether the groundwater contained hazardous substances, pollutants or contaminants, including petroleum, what constituents the groundwater contained, and why the groundwater contained such constituents;**
c. **all analyses or tests and results of analyses of the groundwater;**
d. **if the groundwater action has been completed, describe the basis for ending**

the groundwater action; and

e. **all persons, including contractors, with information about (a) through (c) of this request.**

Response 66: No.

67. Was there ever a spill, leak, release or discharge of a hazardous substance, waste, or material into the Willamette River from any equipment, structure, or activity occurring on, over, or adjacent to the river? If the answer to the preceding question is anything but an unequivocal "no", identify and provide copies of any documents regarding:

a. **the nature of the hazardous substance, waste, or material spilled, leaked, released or discharged;**
b. **the dates of each such occurrence;**
c. **the amount and location of such release;**
d. **were sheens on the river created by the release;**
e. **was there ever a need to remove or dredge any solid waste, bulk product, or other material from the river as a result of the release? If so, please provide information and description of when such removal/dredging occurred, why, and where the removed/dredged materials were disposed.**

Response 67: Previously, Respondent was associated with multiple properties within the boundaries of the Portland Harbor Superfund Site, each of which will be discussed separately below.

Inland Property
The Inland Property is landlocked, so a spill, leak, release or discharge directly into the Willamette River is not possible.

Shipyard
Respondent is aware of 23 discharges at the Shipyard that were at least partially associated with NWM or Respondent, out of which sixteen discharges resulted in material entering the Willamette River. For reference, over the same time period, 168 release events were tied to parties other than NWM or Respondent, with most entering the Willamette River. See POP0138895-POP0138924 for answers to subparts (a) to (e).[70]

68. For any releases or threatened releases of PCB(s), identify the date, quantity, location and type of PCB(s), or PCB(s) containing materials or liquids, and the nature of any response to or cleanup of the release.

Response 68: See Responses 47-49.

69. For any releases or threatened releases of PCB(s) and/or PCB(s) containing materials or liquids, identify and provide copies of any documents regarding the quantity and

[70] Submitted as an attachment to the Port's 104(e) Responses for the Swan Island Upland Facility & Berth 311 (POP0138925-POP0139014).

type of waste generated as a result of the release or threatened release, the disposition of the waste, provide any reports or records relating to the release or threatened release, the response or cleanup and any records relating to any enforcement proceeding relating to the release or threatened release.

Response 69: See Responses 47-49.

Section 7.0 Property Investigations

70. Provide information and documentation concerning all inspections, evaluations, safety audits, correspondence and any other documents associated with the conditions, practices, and/or procedures at the Property concerning insurance issues or insurance coverage matters.

Response 70: Respondent has uncovered documentation indicating that historical insurance policies may have been issued by the insurers set forth in NWMAR106716-NWMAR106721. Respondent has placed the insurers on notice, to the extent solvent and still in existence, and is currently seeking coverage from these insurers. No insurer has accepted coverage for any obligation the Respondent might have for the costs of remediating properties within the Portland Harbor Superfund Site. Although Respondent has located policies and/or secondary evidence of coverage, it has not located any other documents referencing inspections, evaluations, safety audits, correspondence or other documents and concerning insurance issues or insurance coverage matters.

71. Describe the purpose for, the date of initiation and completion, and the results of any investigations of soil, water (ground or surface), sediment, geology, and hydrology or air quality on or about each Property. Provide copies of all data, reports, and other documents that were generated by you or a consultant, or a federal or state regulatory agency related to the investigations that are described.

Response 71: Only the environmental investigations relevant to the Inland Property (the only property owned by NWM) are discussed here. Of these surveys, three were conducted by NWM or Respondent (NWMAR021717-NWMAR021763, NWMAR021764-NWMAR021853, NWMAR032701-NWMAR032745), and one was conducted by Service Steel (NWMAR010026-NWMAR010048). Details of these surveys are found below. To Respondent's knowledge, NWM or Respondent conducted no additional surveys of the Inland Property, Shipyard, or St. Johns Dry Dock.

For information related to environmental surveys conducted at the Shipyard, see the Port's 104(e) Response 71 for the Swan Island Upland Facility & Berth 311(POP0138993-POP0139009) and Cascade General's 104(e) Response 71 (CAS0000053-CAS0000054). For information related to the environmental surveys conducted at St. Johns Dry Dock, see the Port's 104(e) Response 71 for Willamette Cove (POP0139343-POP0139347). See also Response 15 for a list of property investigations conducted for all relevant properties.

Additionally, NWM maintained a large volume of air monitoring data related to asbestos

monitoring for work on some asbestos-containing vessels at the Shipyard. These reports are too numerous to reasonably summarize here. See environmental, sample, and data reports located at NWMAR071745-NWMAR071775 and NWMAR071779-NWMAR079602.

Environmental studies of the Inland Property include:

- *(Revised) Phase II Environmental Property Transfer Assessment Report, Northwest Marine Iron Works Portland, Oregon*. Prepared for Southwest Marine by Dames & Moore. May 31, 1989. Note: The report was "revised" to include a table that was inadvertently left out of the original copy (NWMAR032701-NWMAR032745).

This investigation was performed as part of Respondent's acquisition of NWM. The assessment was conducted to evaluate potential environmental risk associated with the Inland Property as part of a due diligence property review to satisfy the "innocent purchaser" provisions of the Superfund Amendments and Reauthorization Act of 1986. The investigation included drilling and sampling four borings (30 feet below ground surface ("bgs")), the installation of four monitoring wells in these borings and the collection of two near surface soil samples, groundwater samples and two wall-wipe samples. All samples were collected around or within Building #2 (i.e., at the Inland Property) on 22-23 May 1989.

Boring soil samples were analyzed for metals, chlorinated solvents, and petroleum hydrocarbons. Analysis of these samples found concentrations for the following metals: nickel (0.053 ppm); arsenic (0.0074 ppm); and mercury (0.0077 ppm). This report notes that all these values fell below the relevant EPA regulatory levels, but does not specify what those screening levels were. Total petroleum hydrocarbon levels in the soil samples ranged from 22 to 710 ppm.

Groundwater samples were analyzed for metals and chlorinated solvents, with only cadmium (0.02-0.023 ppm), iron (1.88-64.6 ppm), and manganese (2.99-7.76 ppm) detected at values exceeding EPA drinking water standards at two wells. The wells also contained the following compounds in detectable quantities that fell below the EPA drinking water standards: 1,1-dichloroethane (1.8 ppb); 1,2-dichloroethane (1.0 ppb); 1,1-dichloroethene (0.6 ppb); tetrachloroethene (0.5 ppb); and trichloroethene (0.8 ppb).

Wipe samples were analyzed for metals. The following metals exceeded the value of 1 mg over the sample area of 387 cm^2: iron (472 mg); zinc (50.7 mg); copper (8.13 mg); manganese (6.38 mg); lead (5.22 mg); barium (1.87 mg); and nickel (1.36 mg).

- *Phase I Environmental Site Assessment Report, Northwest Marine Iron Works Portland, Oregon*. Prepared for Greenwich Capital Markets Inc. by Dames & Moore. June 2, 1998 (NWMAR021764-NWMAR021853).

The 1998 Phase I Assessment was performed on behalf of the Bradavin Property Trust, then the owner of the Inland Property. The Bradavin Property Trust was considering refinancing for the Inland Property and performed the site assessment to document its current conditions. The scope of services included review of the following: geologic and hydrogeologic conditions, topographic and historical land use maps of the previous 50 years (1948 to 1998) to assess site

uses involving hazardous substances and EPA lists of known potential hazardous waste sites or landfills and sites currently under investigation for environmental violations within the vicinity of the Inland Property. Additionally, the scope included performing a reconnaissance survey to document current conditions. No sampling was conducted as part of this reconnaissance survey.

- *Phase Two Environmental Investigation Report, 5555 N. Channel Avenue. Portland, Oregon*. Prepared for Carillon Advisers, Inc. c/o National Mortgage Company and Mr. William H. Zavin II by PBS Environmental. October 1998. (NWMAR021717-NWMAR021763);

This investigation was performed based on the results of the 1998 *Phase I Environmental Site Assessment* conducted by Dames and Moore. Specifically, the *Phase Two Environmental Investigation* reviewed ODEQ files pertaining to the adjacent property to the west (Dillingham Ship Repair) and the status of remedial activities there, collected a wipe sample from a small stained concrete pad area near an indoor electrical transformer, collected soil samples from four borings at a former UST location and decommissioned the four existing monitoring wells installed during the Dames and Moore 1989 *Phase II Environmental Property Transfer Assessment*. An attempt to collect groundwater from the four temporary borings was unsuccessful due to a very slow recharge of groundwater into the borings. All site work was complete on 20 October 1998.

A single wipe sample was collected from a one square foot large oil stain beneath a transformer located inside the northeast corner of Building #2 of the Inland Property. This sample found 20 mg of PCBs (Aroclor 1260 specifically) within the 100 cm^2 wipe area. The report suggests that the site be cleaned for PCBs based on the wipe sample exceeding a baseline of 10 mg PCB per 100 cm^2 wipe area.

Six borings were completed ranging in depth from 19 feet to 27 feet bgs concentrated around the location of a former underground storage tank. No petroleum hydrocarbons in the gasoline, diesel or heavy oil ranges were found in any of the soil samples.

- *Phase Two Environmental Site Assessment Report, 5815 and 5851 N. Lagoon Avenue Portland, Oregon*. Prepared for Service Steel by PBS Environmental. September 2006 (NWMAR010026-NWMAR010048).

In February 2006, Point Source Solutions performed a *Phase I Environmental Site Assessment*[71] at the Shipyard and Inland Property. As a result of concerns raised by this assessment, Service Steel, which at the time leased the Inland Property from Respondent, requested a *Phase Two Environmental Site Assessment* at the Inland Property. The scope of work was developed in cooperation with Service Steel, Respondent and Service Steel's lender. The 2006 *Phase Two Environmental Site Assessment* included a geophysical survey and soil investigation to assess the potential presence of historical USTs not identified in previous studies and to evaluate potential impacts to shallow soils from historical steel fabrication activities on the Inland Property. In addition, sludge samples were collected from eight catch basins on the Inland Property. No

[71] Respondent was unable to locate a copy of the Phase I Environmental Site Assessment.

groundwater samples were collected as part of this investigation. All samples were collected on 3 August 2006.

Thirteen soil samples were collected at depths ranging from 5 to 15 feet bgs at nine sites around the Inland Property. These samples were analyzed for TPH, metals, and VOCs. Three samples had detectable quantities of diesel fuel range hydrocarbons (7.9-78 ppm) and four samples had detectable motor oil range hydrocarbons (29-66 ppm) at a maximum depth of ten feet bgs for both TPH ranges. The following metals were detected within some soil samples: arsenic (11-12 ppm); barium (85-400 ppm); cadmium (0.34-0.45 ppm); chromium (17-47 ppm); and lead (2.5-9.3 ppm). Only chromium exceeded EPA Region Nine's "migration to groundwater" screening levels.[72] One sample at ten feet depth detected the following VOCs: 1,2,4-trimethylbenzene (0.066 ppm); 1,2,3-trimethylbenzene (0.024 ppm); 1,3,5-trimethylbenzene (0.020 ppm); total xylenes (0.018 ppm). None of these VOCs exceeded EPA Region Nine's "migration to groundwater" screening levels.

Nine catch basin sludge samples from eight catch basins were analyzed for TPH and metals. All tested samples detected heavy oil range hydrocarbons (1,500-64,000 ppm). The following metals were detected in some samples: arsenic (2-8 ppm); barium (10-312 ppm); chromium (10-183 ppm); and lead (17-799 ppm).

72. Describe any remediation or response actions you or your agents or consultants have ever taken on each Property either voluntarily or as required by any state or federal agency. If not otherwise already provided under this Information Request, provide copies of all investigations, risk assessments or risk evaluations, feasibility studies, alternatives analysis, implementation plans, decision documents, monitoring plans, maintenance plans, completion reports, or other document concerning remediation or response actions taken on each Property.

Response 72: Respondent is unaware of any remediation or response actions undertaken by Respondent at the Inland Property or the Shipyard during Respondent's Active Operations Period.

See also Response 64.

73. Are you or your consultants planning to perform any investigations of the soil, water (ground or surface), geology, hydrology, and/or air quality on or about the Property? If so, identify:

- **a. what the nature and scope of these investigations will be;**
- **b. the contractors or other persons that will undertake these investigations;**
- **c. the purpose of the investigations;**
- **d. the dates when such investigations will take place and be completed; and where on the Property such investigations will take place.**

[72] Region 10, which is the EPA regulatory region in which the Site is located, appeared to defer to the Region 9 soil-to-groundwater migration concentrations. No concentrations specific to Region 10 are known for the time period during which this assessment was made.

Response 73: No.

Section 8.0 Corporate Information

74. Provide the following information, when applicable, about you and/or your business(es) that are associated with each Property identified in response to Question 4:

- **a. state the current legal ownership structure (e.g., corporation, sole proprietorship);**
- **b. state the names and current addresses of current and past owners of the business entity or, if a corporation, current and past officers and directors;**
- **c. discuss all changes in the business' legal ownership structure, including any corporate successorship, since the inception of the business entity. For example, a business that starts as a sole proprietorship, but then incorporates after a few years, or a business that is subsequently acquired by and merged into a successor. Please include the dates and the names of all parties involved;**
- **d. the names and addresses of all current or past business entities or subsidiaries in which you or your business has or had an interest that have had any operational or ownership connection with the Properties identified in response to Question 4. Briefly describe the business activities of each such identified business entities or subsidiaries; and**
- **e. if your business formerly owned or operated a Property identified in response to Question 4, describe any arrangements made with successor owners or operators regarding liability for environmental contamination or property damage.**

Response 74:

a. See Response 1.

b. The current members of Marine Group are: Arthur E. Engel, Trustee; Herbert G. Engel, Trustee; and David R. Engel, Trustee. The current officers of Marine Group are: Arthur E. Engel, Managing Member/President; and Laura J. Machado, Secretary and Chief Financial Officer.

Past Directors of Southwest Marine:
Art Engel
Herb Engel
David Engel
William Johnston
Alex Vinck
Milton Fredman
D. Carl Hanson
Allan Holt
Raymond A. Whiteman
Daniel A. Ajamian

Edward Ewing
Dev Kapadia
David V. Kolovat
Frances Raborn
Alexander Krekich
Mark H. Ronald
Sheila C. Cheston

c. Northwest Marine Iron Works was incorporated in Oregon on 28 May 1943, and started operating at locations within the Portland Harbor Superfund Site. Southwest Marine, Inc., which was BAE's prior name, was incorporated in California on 27 August 1976. On 14 April 1989, Southwest Marine, Inc. acquired Northwest Marine Iron Works (see documents related to acquisition at NWMAR010487-NWMAR010684). Prior to this date, Southwest Marine, Inc. had no involvement with the Inland Property or Shipyard.

On 25 January 1990, Northwest Marine Iron Works changed its name to Northwest Marine, Inc. On 31 December 1990, Northwest Marine, Inc. merged into Southwest Marine, Inc., which was the surviving corporation. Southwest Marine, Inc. continued to do business under the assumed business name of Northwest Marine until it ceased active operations at the Inland Property and Shipyard on 9 November 1992, thus ending its involvement with the Shipyard.

Marine Group was organized on 14 October 1997. On 24 November 1997, Southwest Marine, Inc. transferred all of the assets and liabilities of the former Northwest Marine to Marine Group. This transfer terminated the involvement of Southwest Marine, Inc. with the Inland Property. On 27 June 2005, Southwest Marine, Inc. was renamed BAE San Diego Ship Repair Inc., after BAE Systems Ship Repair Inc. acquired Southwest Marine's parent corporation. Marine Group terminated its involvement with the Inland Property on 6 November 2006, when it conveyed the Inland Property to an unaffiliated entity, EWH, LLC, an Oregon limited liability company.

In sum, BAE was involved with the Shipyard from 14 April 1989, to 9 November 1992, and with the Inland Property from 14 April 1989, to 24 November 1997. Marine Group was never involved with the Shipyard and was involved with the Inland Property from 24 November 1997, to 6 November 2006. Most importantly, BAE and Marine Group (in its role as successor to BAE) were involved in active operations at the Inland Property and Shipyard for a mere three and one-half years, from 14 April 1989, to 9 November 1992, and neither was ever involved with the SBP Dock or St. Johns Dry Dock.

Respondent urges EPA to also consider as a valuable information source the prior CEO of NWM, William H. Zavin II, whose contact information is contained in Response 80.

d. See Response 74(c).

e. None.

75. List all names under which your company or business has ever operated and has ever been incorporated. For each name, provide the following information:

a. whether the company or business continues to exist, indicating the date and means by which it ceased operations (e.g., dissolution, bankruptcy, sale) if it is no longer in business;

b. names, addresses, and telephone numbers of all registered agents, officers, and operations management personnel; and

c. names, addresses, and telephone numbers of all subsidiaries, unincorporated divisions or operating units, affiliates, and parent corporations if any, of the Respondent.

Response 75:

a. See Response 74(c).

b. The current registered agent for Marine Group is Arthur Engel, 1311 First Street, Coronado CA 92118; Phone: (619) 437-6999 ext. 2011. For officers, see Response 74(b). For operations management personnel, see Response 38.

c. Affiliated entity: Marine Group Boat Works, 997 G Street, Chula Vista, CA 91910; Phone: (619) 427-6767.

76. Provide all copies of the Respondent's authority to do business in Oregon. Include all authorizations, withdrawals, suspensions and reinstatements.

Response 76: Marine Group registered on October 2, 2002, to do business in Oregon with the Oregon Secretary of State, Corporation Division, as Registry No. 106094-93. Marine Group's registration is current. NWM is an inactive Oregon corporation, and it no longer operates or files reports with the Oregon Secretary of State.

77. If Respondent is, or was at any time, a subsidiary of, otherwise owned or controlled by, or otherwise affiliated with another corporation or entity, then describe the full nature of each such corporate relationship, including but not limited to:

a. a general statement of the nature of relationship, indicating whether or not the affiliated entity had, or exercised, any degree of control over the daily operations or decision-making of the Respondent's business operations at the Site;

b. the dates such relationship existed;

c. the percentage of ownership of Respondent that is held by such other entity(ies);

d. for each such affiliated entity provide the names and complete addresses of its parent, subsidiary, and otherwise affiliated entities, as well as the names and addresses of each such affiliated entity's officers, directors, partners,

trustees, beneficiaries, and/or shareholders owning more than five percent of that affiliated entity's stock;

e. provide any and all insurance policies for such affiliated entity(ies) which may possibly cover the liabilities of the Respondent at each Property; and

f. provide any and all corporate financial information of such affiliated entities, including but not limited to total revenue or total sales, net income, depreciation, total assets and total current assets, total liabilities and total current liabilities, net working capital (or net current assets), and net worth.

Response 77:

a. See Response 75(c).

b. See Responses 74(c) and 77(f).

c. See Response 75(c).

d. See Responses 74 and 75.

e. See the list of insurance policies at NWMAR106716-NWMAR106721.

f. Not applicable.

78. If Respondent is a partnership, please describe the partnership and provide a history of the partnership's existence. Provide a list of all current and past partners of any status (e.g., general, limited, etc.) and provide copies of all documents that created, govern, and otherwise rules the partnership, including any amendments or modifications to any of the originals of such documents, and at least five years of partnership meeting minutes.

Response 78: Respondent is not a partnership.

Section 9.0 Compliance With This Request

79. Describe all sources reviewed or consulted in responding to this request, including, but not limited to:

a. the name and current job title of all individuals consulted;

b. the location where all sources reviewed are currently reside; and

c. the date consulted.

Response 79:

a. See Response 2.

b. Documents produced with the Prior Responses or herewith are maintained by Karen L. Reed, Ring Bender McKown & Castillo LLLP, Attorneys for Respondent. Additional records are maintained by Laura J. Machado, Raymond A. Parra and Shaun Halvax. Contact information is provided in Response 2.

c. Consultations have occurred on a frequent basis from 28 February 2008, to present, varying from multiple time a day to several times a month.

80. If not already provided, identify and provide a last known address or phone number for all persons, including Respondent's current and former employees or agents, other than attorneys, who have knowledge or information about the generation, use, purchase, storage, disposal, placement, or other handling of hazardous materials at, or transportation of hazardous substances, waste, or materials to or from, each Property identified in response to Question 4.

Response 80: The following person has extensive knowledge and information regarding such matters occurring prior to Respondent's Active Operations Period:

William H. Zavin II
P.O. Box 39
Portland, OR 97207
(b) (6)
(b) (6)
Representative of prior owner/operator of Northwest Marine

Other persons who may have relevant knowledge include:

Don Nugent (Sundial Marine)
Fletcher Hunt (Port of Portland/Airport)

Former Northwest Marine employees that are not deceased and of which Respondent is aware are listed. Their personal contact information is available upon request.

Margie Abts	Marie Howell	Donna Santos
Doris Akin	Jack Jothen	Thomas Saunders
Margaret Beckwith	Ray Jothen	Eileen Serinotti
Lillian Butler	Juanita Kincaid	Raymond Sullivan
Nicholas Calley	Jeddie Linker	Fred Thoman
George Demetrakos	Norma Peterson	
Grace Hite	Donald Robeck	

81. If any of the documents solicited in this information request are no longer available, please indicate the reason why they are no longer available. If the records were destroyed, provide us with the following:

a. the document retention policy between 1937 and the present;
b. the approximate date of destruction;
c. a description of the type of information that would have been contained in the documents;
d. the name, job title and most current address known by you of the person(s) who would have produced these documents; the person(s) who would have been responsible for the retention of these documents; the person(s) who

would have been responsible for destroying the documents; and the person(s) who had and/or still have the originals or copies of these documents; and

e. the names and most current addresses of any person(s) who may possess documents relevant to this inquiry.

Response 81: NWM operated a record retention program, as outlined in the undated procedure guide at NWMAR138858-NWMAR138902. These guidelines stipulate that:

- Departmental records could be disposed of quarterly with no disposal record at the discretion of the department head;
- Records in the Records Retention Center could be disposed of at the discretion of the appropriate department head. In such cases, a disposal certificate was required to be filled out; and
- Disposal certificates were to be maintained for a period of no more than six years, after which they were to be disposed of without a disposal record.

Additionally, Respondent is aware of two instances, in 1964 and 1989, when records relevant to these Responses were destroyed in the ordinary course of business, as described below.

A special meeting of the board of directors of Northwest Marine Iron Works was held on 22 August 1964. The minutes of this meeting stated the following with regard to the destruction of documents:

> Mr. George Grebe presided and brought up the problem of accumulation of company records and the need of more space. The Directors thoroughly discussed this matter, and at the conclusion unanimously adopted the following Resolution:
>
> RESOLVED that the Secretary and Treasurer of the company be and they hereby are authorized to examine the records of the company and determine which records no longer be kept and destroy the same.

See NWMAR104765-NWMAR104766. George Grebe (b) (6)

After Respondent acquired NWM on 14 April 1989, historical records again were destroyed in the ordinary course of business to obviate the need for additional document storage space. Respondent has been unable to locate documentation regarding what records were destroyed and believes that such documentation does not exist. The information regarding document destruction in 1989 was obtained in interviews with former and current employees of NWM and Respondent.

82. Provide a description of all records available to you that relate to all of the questions in this request, but which have not been included in your responses.

Response 82: Respondent has excluded records that constitute confidential client-attorney communications or attorney work product. Respondent submitted a privilege log listing these records with the Prior Responses (NWMAR109964-NWMAR109986). All other such records have been produced with the Prior Responses or herewith.

DECLARATION

I declare under penalty of perjury that I am authorized to respond on behalf of Respondent and that the foregoing is complete, true, and correct.

Executed on May ____, 2014.

The Marine Group LLC

Signature

Arthur E. Engel
Type or Print Name

Chief Executive Officer
Title

Mailing Address:
1311 First Street
Coronado, CA 92118