State of Oregon
Department of Environmental Quality Memorandum

Date: November 12, 2025

To: FILE

Through: Kevin Parrett, Katie Daugherty, and Dave Lacey

From: Kevin Dana
Northwest Region

Subject: Hoyt Street Railyard, ECSI #1080; Staff Memorandum in support of a Partial No Further Action determination for groundwater contamination.

This document presents the basis for the Oregon Department of Environmental Quality's (DEQ's) recommended Partial No Further Action (PNFA) determination for groundwater at the former Hoyt Street Railyard in Portland. As discussed in this report, contaminant concentrations in groundwater are below acceptable risk levels.

The proposed PNFA determination meets the requirements of Oregon Administrative Rules (OAR) Chapter 340, Division 122, Sections 010 to 0140; and Oregon Revised Statutes (ORS) 465.200 through 465.455.

The proposal is based on information documented in the administrative record for this site. A copy of the administrative record index is presented at the end of this report.

1. BACKGROUND

Site location.
The site's location can be described as follows:
- Address: Northwest Naito Parkway south to NW Lovejoy Street between NW 9th and 12th Avenues, Portland, Multnomah County, Oregon.
- Latitude 45.5318° North; Longitude 122.6818° West
- Township 1 North, Range 1 East, Section 28 DD (between NW 14th and Naito) and Township 1 North, Range 1 East, Section 34 BB (west of NW 9th), Willamette Baseline and Meridian.

Site setting.
The majority of the 26-acre Hoyt Street Railyard site extends south from Northwest Naito Parkway (formerly Front Avenue) to NW Lovejoy Street between NW 9th and 12th Avenues. The site also includes two blocks extending south from Lovejoy between NW 9th and 10th Avenues, two blocks extending south from Naito between NW 12th and 13th Avenues, and two blocks extending south from Naito between NW 13th and 14th Avenues. In total, the site covers approximately 23 city blocks. See Attachment 1 for a circa 1977 topographic map of the area,

Attachment 2 for a circa 1959 aerial photo of the site, and Attachment 3 for a 2024 satellite photo of the area.

Hydrogeologic setting.
Soils at the site consist of 10-30 feet of imported fill, a mixture of sands, silts, clays, and industrial debris. Beneath the fill lie 5-15 feet of sandy and silty clays (the original surface soils) underlain by layers of Pleistocene-age sand and gravel flood deposits to about 90 feet below ground surface (bgs). The depth to groundwater ranges from 6 feet to 25 feet bgs depending on seasonal conditions.

Historically, the shallow groundwater flow direction was to the north-northeast, toward the Willamette River. From 2006-2013, however, monitoring wells in the vicinity of Fields Park showed shallow groundwater flowing southeast, towards the Tanner Creek Sewer line. The change in the groundwater flow direction has been attributed to the development of the site, including the construction and dewatering of subsurface parking garages and the installation of impervious surfaces (buildings, sidewalks, and roads).

Site history.
The site was originally low marshlands surrounding Tanner Creek, which flowed north through the site to the Willamette River. Beginning in the 1880s, the site was covered with 10-20 feet of imported fill soils mixed with some industrial debris (bricks, slag, cinders, glass, etc.). At the north end of the site, the fill consisted of sawdust from the adjacent Willamette Steam Mills Lumbering and Manufacturing Company, which was operating as of 1889 but was gone by 1897. Between 1887 and 1890 a brick sewer approximately five feet wide and 7½ feet high was constructed beneath NW 9th Avenue to contain Tanner Creek.

The Portland & Seattle Railway Company purchased the site in 1906 and constructed the Hoyt Street Yard. The 40-acre railyard extended north from NW Hoyt Street between NW 9th and 12th Avenues, with the rail lines turning northwest just south of NW Front Street (now Naito Parkway). A new concrete sewer for Tanner Creek, 10 feet high and 6½ feet wide, was constructed beneath what is now NW 10th Avenue in 1917-18, reportedly because the original brick sewer was structurally unsound. The original Tanner Creek Sewer was backfilled with sand and severed at Front Avenue, terminating its connection to the Willamette River.

The renamed Spokane, Portland & Seattle (SP&S) Railway Company was purchased by Burlington Northern Railroad Company in 1970, and Burlington Northern purchased the site in the mid-1970s. Burlington Northern transferred ownership of the railyard to a holding company in 1988, and in January 1994 the site was sold to Hoyt Street Properties for redevelopment. Burlington Northern Railroad Company merged with Santa Fe Pacific Corporation in September 1995 to form Burlington Northern and Santa Fe (BNSF) Railway Company. BNSF continued to lease the site until the end of 1998, when operations at the railyard ceased.

2. BENEFICIAL LAND AND WATER USE DETERMINATIONS

Land use.
The site is zoned Central Employment with a design overlay (EXd) by the City of Portland, excepting two city parks (The Fields and Tanner Springs) which are zoned Open Space with a design overlay (OSd). See Attachment 4 for a zoning map. The Central Employment zoning allows for a full range of high density commercial, light industrial, institutional, and multi-family residential uses near the Central City. The design overlay promotes design excellence through the application of additional design standards and guidelines to ensure that development will enhance the area.

Groundwater use.
A search of well logs on file with the Oregon Water Resources Department identified no domestic, irrigation, or community wells within the Hoyt Street Railyard site.

The City of Portland is served by a municipal water supply system. The water is primarily obtained from surface water reservoirs in the Bull Run watershed on the western slopes of Mount Hood, and supplemented as needed with groundwater from the Columbia South Shore Wellfield.

Surface water use.
The nearest surface water body is the Willamette River, about 400 feet northeast of the site at its closest point. The Willamette is used for navigation, fishing and recreation, and provides habitat for wildlife including steelhead and Chinook and Coho salmon. Stormwater at the site is directed to the City of Portland's storm sewer system, which includes the Tanner Creek Sewer. The Tanner Creek Sewer discharges to the Willamette beneath the Centennial Mills site (ECSI #5136) at River Mile 11.4.

3. INVESTIGATION AND CLEANUP WORK

File information on the site begins in the fall of 1975, when the City of Portland contacted Burlington Northern Railroad and expressed concern with subsurface petroleum contamination at the railyard. The City and the U.S. Coast Guard had documented 14 discharges of oil to the Willamette River "from the Tanner Creek storm sewer or the surrounding bank soil" between August 1970 and August 1975. The City considered it "obvious that Burlington Northern and possibly Portland Terminal Railroad are the sources of this oil." Representatives of Burlington Northern agreed to address the contamination.

Four product recovery wells (WP-1 through WP-4) were installed along NW 9th Avenue in December 1975 to recover diesel from the railyard refueling area. Three of the wells (WP-1 through WP-3) were installed between Northrup Street and Overton Street, as shown on Attachment 5. Note that north is to the left on this figure, and on many subsequent figures. The location of WP-4 is unknown. The wells were reportedly pumped regularly until February 1980, when WP-2 was enlarged to accommodate a "floating oil scavenger system". The recovery wells continued to operate until 1983.

In December 1987, nine groundwater monitoring wells (H-1 through H-9) were installed across the center of the Hoyt Street Railyard, as shown on Attachment 5. (Note that H-3 is not shown on the map. The location of H-3 is unknown). A subsequent investigation (completed in February 1989) reportedly identified petroleum hydrocarbons, heavy metals, polycyclic aromatic hydrocarbons (PAHs) and polychlorinated biphenyls (PCBs) in both soils and groundwater.

Additional monitoring wells were installed at the site in July 1989 (HMW-1 through HMW-3) and September 1989 (HMW-4 through HMW-6), as part of an Environmental Assessment of the site. As shown on Attachment 5 and Attachment 6, the wells were installed north of Lovejoy Street between 9th and 10th Avenues, where a railroad turntable, fueling tanks, and a wash rack were located. The Environmental Assessment, completed in February 1990, reported that a 250,000-gallon aboveground diesel fuel tank was present in the area, along with a 120,000-gallon oil sump (adjacent to the locomotive fueling area and wash rack) and a 5,600-gallon oil sump. Seven underground storage tanks (USTs), including five 30,000-gallon diesel USTs and two 20,000-gallon diesel USTs, had previously been present in the area but had been decommissioned in 1980. As of 1990, a 19,500-gallon lube oil UST was the only remaining UST. The Assessment noted that up to 3½ feet of free-product diesel was present atop the groundwater.

The product recovery system was upgraded and restarted in 1992. Two new recovery wells (RW-1 and RW-2) were installed along 9th Avenue, as shown on Attachment 7, and operated in conjunction with WP-1 and WP-2. The 19,500-gallon lube oil UST was decommissioned by removal in August 1992.

In June 1993, Burlington Northern completed an investigation of the southern portion of the 40-acre Hoyt Street Railyard, extending south from the Lovejoy Viaduct to Hoyt Street between 10th and 12th Avenues. The investigation included the installation of six groundwater monitoring wells in March and April 1993. The wells were sampled for PAHs. Virtually no PAHs were detected. Static groundwater in the area was about 20 feet bgs.

Burlington Northern Railroad enrolled 26 acres of the "Hoyt Street Train Yard" north of the Lovejoy Viaduct with DEQ's Voluntary Cleanup Program in March 1994. The site address was given as 1105 NW 9th Avenue, which corresponded to a shop near the railyard turntable. Burlington Northern reported that the upgraded product recovery system was extracting 200-300 gallons of diesel from the ground every month.

In January 1995, DEQ transferred the Hoyt Street Railyard project from the Voluntary Cleanup Program to the Site Response Program, and required Burlington Northern to enter into an enforceable agreement to investigate and clean up the site. DEQ signed an "Order on Consent" (Consent Order) with Burlington Northern Railroad in August 1995. The Consent Order required Burlington Northern to conduct a Remedial Investigation and Feasibility Study for the site, along with Human Health and Environmental Risk Assessments and any Interim Removal Measures that might be necessary. The Hoyt Street Railyard "site" was defined as the portion of the railyard north of the Lovejoy Viaduct, as well as two blocks extending south from Lovejoy between 9th and 10th Avenues. Columbia Steel Corporation had operated a steel foundry on the two blocks (leased from SP&S) from about 1902 to 1962. (See Attachment 8 for a layout of the Hoyt Street Railyard site, including the steel foundry, circa 1940). The railyard south of Lovejoy had shown little to no contamination, and so was excluded from the Hoyt Street Railyard site.

Groundwater samples were collected quarterly from 22 monitoring wells at the site in 1996 as part of the Remedial Investigation. The well locations are shown on Attachment 9. All of the samples were analyzed for PAHs, and some samples were further analyzed for metals and volatile organic compounds (VOCs). The maximum concentrations of individual contaminants detected in groundwater at the site are shown on Attachment 10. In July 1996, DEQ approved additional improvements to the groundwater containment and recovery system, including the installation of two new product recovery wells (RW-3 and RW-4).

The Remedial Investigation Report was completed in October 1996. The report noted that from June 1995 through May 1996 approximately 1,500 gallons of free-product petroleum had been recovered from 777,500 gallons of treated groundwater.

In September 1997, the City of Portland signed a Development Agreement with Hoyt Street Properties for redevelopment of the Hoyt Street Yards. Portland City Council had adopted the River District Development Plan in May 1994, which called for the River District (extending north from Burnside Street between Interstate 405 and the Willamette River) to be redeveloped as a high-density, mixed use neighborhood. Hoyt Street Properties had purchased the Hoyt Street Yards in January 1994 in anticipation of the development plan. Under the Development Agreement, the city would extend the existing street grid through the railyard. The city would also be responsible for demolition of the Lovejoy Viaduct, the construction of park blocks, and the building of a streetcar line through the area.

A Risk Assessment for the Hoyt Street Railyard project was completed in February 1998, followed by a Feasibility Study in July 1999. A 90-day public notice and comment period for a draft Staff Report extended from January 1 to March 31, 2000. By that time, soil and/or groundwater samples had been collected from 203 test pits, 89 borings, and 42 monitoring wells at the site. Up to 44,000 parts per million (ppm) total petroleum hydrocarbons (TPH) had been detected in soils at the site, and up to 18.6 parts per billion (ppb) total dissolved PAHs were present in groundwater. The product recovery system, with six recovery wells, was continuing to operate as an interim remedial measure, removing “light non-aqueous phase liquids” (LNAPL, a.k.a. floating free-product) from the groundwater.

The Record of Decision (ROD) for the Hoyt Street Railyard was issued on December 15, 2000. For groundwater, the selected remedy was to continue operation of the LNAPL recovery system until LNAPL was largely removed or until site redevelopment forced abandonment of the system, at which time contingency LNAPL remedial measures would be evaluated. Groundwater in backfill around the Tanner Creek Sewer would be separately evaluated before selection of a final remedy for the backfill-to-Willamette contaminant migration pathway.

In 2001, BNSF Railway and their consultant decided to excavate contaminated soils from the LNAPL area to accelerate the cleanup of the area. The six LNAPL recovery wells and nine groundwater monitoring wells were decommissioned in September 2001. BNSF later reported that, during the last year of its operation (October 2000 to September 2001), the product recovery system had extracted 912,614 gallons of groundwater and recovered 70 gallons of LNAPL. From 1995 to September 2001, approximately 2,900 gallons of LNAPL had been recovered.

The LNAPL excavation was conducted from September 28 to November 8, 2001, and roughly covered the city block bounded by Northrup & Overton Streets and 9th & 10th Avenues, as shown on Attachment 11. A total of 13,145 tons of LNAPL soils and 5,781 tons of stained overburden soils were excavated and shipped off-site for thermal treatment and disposal. A total of 284,730 gallons of water were pumped from the excavation and treated on-site, recovering 1,890 gallons of LNAPL, and an additional 16,634 gallons of water and sludge were shipped off-site for recycling and disposal. The excavation extended up to 24½ feet bgs.

In January 2002, DEQ signed a Stipulation and Consent Decree with BNSF and Hoyt Street Properties (HSP) to design and implement the remedies selected in the ROD. In general, HSP agreed to implement the soil remedy, while BNSF agreed to implement the groundwater remedy. A Remedial Design/Remedial Action Work Plan for the groundwater remedy was completed in June 2002. The work plan noted that most of the groundwater monitoring wells that had previously been installed at the site had subsequently been decommissioned or removed, either as part of the LNAPL excavation or as part of the on-going redevelopment of the site. New monitoring wells would be installed at the north end of the site to confirm that residual contaminated groundwater did not have the potential to "cause significant adverse effects to the beneficial use of the Willamette River".

A final Groundwater Monitoring and Contingency Plan was completed in January 2004. The 1998 Risk Assessment had identified PAHs and lead in the groundwater as "constituents of potential ecological concern", as "there could be an unacceptable risk to benthic organisms" in Willamette River sediments if sediment pore-water contained the same concentrations of PAHs and lead present in groundwater at the site. To determine potential ecological risks to the river, a groundwater fate and transport model (FATE 5) was used to calculate "trigger levels" of groundwater contamination, above which there could be potential unacceptable risks to the river.

The initial calculations showed that PAH concentrations at the downgradient edge of the former railyard would have to exceed the solubility limit of each PAH in water in order to pose a potential unacceptable risk to the river. So, the solubility limit of each PAH was used as the trigger level. For lead, the trigger level was calculated at 338 ppb.

Six long-term monitoring wells were installed at the north end of the railyard in August 2006. The wells, labeled LTM-102 through LTM-107, are shown on Attachment 12. LTM-101 could not be installed as planned due to construction in the area. Instead, a single groundwater sample was collected from a temporary well at the LTM-101 location in May 2007. The other wells were sampled for lead and PAHs in October 2006 and quarterly in 2007.

Part of the groundwater monitoring plan was to use pairs of monitoring wells (LTM-103 and -104, and LTM-105 and -106) to calibrate the modeling using site-specific flow conditions towards the river. However, the monitoring showed a groundwater flow direction to the southeast, parallel to the Willamette River in the upstream direction. It was determined that groundwater at the north end of the former railyard (north of Pettygrove Street) was flowing toward the Tanner Creek Sewer line beneath 10th Avenue and The Fields Park.

During the first year of groundwater monitoring, lead was detected at a maximum concentration of 323 ppb, in the single groundwater sample from LTM-101. All but one of the other groundwater samples showed lead concentrations less than 50 ppb. As lead concentrations were generally less than 50 ppb and did not exceed the trigger level of 338 ppb, DEQ determined in 2008 that no additional sampling for lead would be required.

DEQ also determined in 2008 that no further investigation of the Tanner Creek Sewer backfill was necessary. An initial investigation, completed in February 2004, had concluded that there was evidence of past free-product migration through the backfill, but "there was no evidence of ongoing migration of free product". In July 2005, monitoring wells were installed in the backfill on either side of the Tanner Creek Sewer near the intersection of NW 9th Avenue and Front Avenue / Naito Parkway. The wells were sampled quarterly for PAHs for a year. Only a handful of PAHs were detected, and the concentrations were below both the trigger levels and Toxicity Reference Values (TRVs) from the 1998 Risk Assessment, as shown on Attachment 13.

The six long-term monitoring wells (LTM-102 through LTM-107) were sampled semi-annually (in January and July) in 2008 and 2009, and again in January 2010. From 2011 to 2013, the wells were sampled annually, in September. All of the groundwater samples were analyzed for PAHs. Through 2013, the maximum PAH concentrations were 0.65 ppb benzo[a]anthracene, 0.61 ppb benzo[a]pyrene, 0.44 ppb benzo[b]fluoranthene, 0.419 ppb benzo[k]fluoranthene, 0.73 ppb chrysene, 1.57 ppb fluoranthene, 0.26 ppb indeno[1,2,3-cd]pyrene, and 2.7 ppb pyrene. See Attachment 14 for a spreadsheet of the groundwater monitoring results.

The environmental consultant for BNSF Railway (Integral Consulting) submitted an *Updated Groundwater Project Closeout Report* to DEQ in November 2014, summarizing the results from the long-term monitoring wells. The report concluded that residual shallow groundwater contamination associated with the site did not pose an unacceptable risk to human health or the environment, and requested that DEQ issue a Certification of Completion for the groundwater remedy, as specified in the 2002 Stipulation and Consent Decree.

In a March 2015 e-mail, DEQ declined to issue the requested Certification, citing "concerns about petroleum contamination in Tanner Creek Sewer backfill [at the] Centennial Mills property". The Tanner Creek Sewer outfall to the Willamette River was on the Centennial Mills site (ECSI #5136). Sampling of backfill around the sewer line at Centennial Mills had identified pockets of liquid petroleum hydrocarbons. The Hoyt Street Railyard had been identified as a potential source of the contamination, along with Centennial Mills and a former upgradient manufactured gas plant. The Portland Development Commission (PDC, now known as Prosper Portland) owned the Centennial Mills site and had agreed to address the contaminated backfill, but DEQ declined to certify completion of groundwater cleanup at the Hoyt Street Railyard until the potential contaminant migration pathway to the Willamette was closed.

In May 2020, Prosper Portland installed groundwater extraction wells through the backfill on either side of the Tanner Creek Sewer at Centennial Mills in an attempt to remove the pockets of liquid petroleum hydrocarbons (LPH). As of March 2021, over 4,300 gallons of groundwater had been extracted from the wells, recovering about six gallons of LPH. Prosper Portland installed two concrete collars around the Tanner Creek Sewer at Centennial Mills in September 2022 to seal off the backfill as a preferential contaminant migration pathway. DEQ approved Prosper Portland's work in May 2023.

Nature and extent of contamination.
Low concentrations of lead and PAHs remain in groundwater at the Hoyt Street Railyard site.

4. RISK EVALUATION

Conceptual site model.
A conceptual site model identifies the sources of contamination at a site, the human or ecological receptors that could be exposed to the contamination, and the pathways by which the exposures could occur.

To evaluate human exposure to residual chemical contamination requires an assessment of the type and extent of that exposure. This is based on current and reasonably likely future site use. DEQ publishes risk-based concentrations (RBCs) for contaminants commonly encountered, for different types of exposure scenarios. These RBCs are conservative estimates of protective levels of contaminants in soil, groundwater and air. Table 1 shows potential exposure pathways and receptors for this site. Based on this, applicable RBCs are identified and used for risk screening.

Table 1. Identification of applicable RBCs, based on pertinent pathways and receptors

Pathway	Receptor	Applicable RBC?	Basis for exclusion
GROUNDWATER			
Ingestion and inhalation from tap water	Residential	No	See Note 1.
	Occupational	No	See Note 1.
Volatilization to outdoor air	Residential	No	See Note 2.
	Occupational	No	See Note 2.
Vapor intrusion into buildings	Residential	No	See Note 2.
	Occupational	No	See Note 2.
Groundwater in excavation	Construction and excavation worker	Yes	

Notes:
1. A municipal water supply is available to the area, and no domestic water wells have been identified in the vicinity of the site. This exposure pathway is not likely to be complete.
2. The residual groundwater contaminants at the site (lead and PAHs) are nonvolatile.

Contaminant concentrations.
Contaminants of Potential Concern (COPCs) are contaminants that are present at a site at concentrations exceeding an RBC for a complete exposure pathway.

Carcinogenic PAHs (cPAHs) are evaluated individually and in the aggregate to determine their risks to human health. To calculate a conservative total cPAH value, the maximum detected concentration of each cPAH was multiplied by a toxic equivalency factor (TEF) and summed to derive a toxic equivalency (TEQ) relative to benzo[a]pyrene. See Attachment 15 for a spreadsheet showing the calculations.

Construction and excavation workers may come into direct contact with contaminated groundwater at the site. Table 2 shows the maximum concentrations of contaminants detected in groundwater at the site, and compares those concentrations with DEQ's groundwater in excavation RBCs to determine if there are any COPCs.

Table 2. Screening for Construction & Excavation Worker COPCs for the Groundwater in Excavation exposure pathway.

Contaminant of Interest	Maximum GW Concentration	Construct/Excavate Worker RBC	COPC (Y/N)
Benzo[a]anthracene	0.65 ppb	>S	N
Benzo[a]pyrene	0.61 ppb	>S	N
Benzo[b]fluoranthene	0.44 ppb	>S	N
Benzo[k]fluoranthene	0.42 ppb	>S	N
Chrysene	0.73 ppb	>S	N
Fluoranthene	1.57 ppb	>S	N
Indeno[1,2,3-cd]pyrene	0.26 ppb	>S	N
Lead	323 ppb	>S	N
Pyrene	2.70 ppb	>S	N
Total cPAHs	0.85 ppb	>S	N

Notes:
1. The symbol ">S" signifies that the RBC for this pathway is greater than the solubility limit of the contaminant.

Human health risk.
Groundwater at the north (downgradient) end of the Hoyt Street Railyard was sampled at regular intervals from 2006 to 2013. As shown in Tables 1 and 2 above, residual contaminant concentrations in the groundwater do not pose unacceptable risks to human health. The residual contaminants (lead and PAHs) are not volatile and do not pose inhalation risks. There are no ingestion risks, as a municipal water supply is available to the area and no shallow domestic or municipal water supply wells are likely to be installed at the site. Free-product petroleum could potentially pose a direct contact risk to construction and excavation workers, but no free-product has been observed in the groundwater since the LNAPL excavation was completed in 2001.

Ecological risk.
The only identified ecological exposure pathway is groundwater discharge to the Willamette River. Groundwater modeling initially determined that PAH concentrations at the north end of the Hoyt Street Railyard would have to exceed solubility limits to pose an unacceptable risk to the river. Subsequent groundwater sampling from 2006 to 2013 showed individual PAHs mostly at concentrations less than 1 ppb. Concentrations of lead in the groundwater similarly did not exceed calculated trigger levels. Groundwater monitoring also showed that the groundwater flow direction had been altered, likely by development in the area, from the original northeast direction (toward the Willamette River) to southeast (parallel to the river).

As shown on Attachment 16, Willamette River sediments adjacent to the Pearl District (on the opposite bank from River Mile 11 East) are not significantly contaminated and do not require active remediation. Only monitored natural recovery is planned in the area.

5. SOURCE CONTROL EVALUATION

Groundwater pathway.
The December 2000 Record of Decision for the Hoyt Street Railyard selected removal of LNAPL as the groundwater remedial action. Contaminated soils were excavated from the LNAPL source area in 2001, and contaminated groundwater was pumped from the excavation pit. A Remedial Design/Remedial Action Work Plan for the groundwater remedy was approved in 2002, requiring the installation of monitoring wells at the north end of the site to confirm that groundwater did not have the potential to "cause significant adverse effects to the beneficial use of the Willamette River".

Six long-term monitoring wells were installed at the north end of the railyard in 2006. The wells were sampled periodically through 2013. An *Updated Groundwater Project Closeout Report* was prepared in 2014, and DEQ approved completion of the groundwater monitoring in 2015. Based on the results of the groundwater monitoring, DEQ excluded the Hoyt Street Railyard groundwater pathway as a pathway requiring a source control evaluation in a 2016 update of the *Portland Harbor Upland Source Control Summary Report*.

Centennial Mills SCD.
In 2014, DEQ issued a *Source Control Decision* for the Centennial Mills site, where Outfall 11 (the Tanner Creek Sewer) discharges to the Willamette River. DEQ determined that soil and groundwater contamination at Centennial Mills were not adversely impacting the Willamette. However, the *Source Control Decision* specifically excluded an evaluation of backfill around Outfall 11 as a potential contaminant migration pathway. In 2020, Prosper Portland initiated work to address the backfill pathway, and in 2022, the backfill around Outfall 11 at Centennial Mills was sealed off with the installation of two concrete collars, addressing the gap in the *Source Control Decision*.

6. RECOMMENDATION

Following the removal of LNAPL and seven years of confirmation monitoring, DEQ determined in 2015 that residual groundwater contamination at the former Hoyt Street Railyard did not pose unacceptable risks to human health or the environment. Certification of Completion of the groundwater cleanup at the Hoyt Street Railyard was only placed on hold at the time due to concerns regarding petroleum contamination in backfill around the Tanner Creek Sewer at its outfall on the Centennial Mills site, which BNSF Railway Company was potentially liable for.

In 2022, Prosper Portland sealed the backfill around the Tanner Creek Sewer at Centennial Mills with two concrete collars. In November 2024, DEQ prepared an initial Staff Closure Memorandum recommending closure of the groundwater portion of the Hoyt Street Railyard project. The recommendation was put out for public notice and comment in December 2024 and January 2025.

In February 2025, representatives of Five Tribes with federal treaty rights to the Willamette River at Portland Harbor questioned whether the Memorandum sufficiently demonstrated that the groundwater investigations and cleanup were protective of the river. Representatives of BNSF Railway Company submitted a Response to Comments in September 2025 with additional information on the groundwater modeling and monitoring that had been conducted.

DEQ reaffirms its 2015 determination that residual groundwater contamination at the former Hoyt Street Railyard does not pose unacceptable risks to human health or the environment. DEQ recommends issuing a Certification of Completion to BNSF Railway Company for the completion of its work under the 2002 Stipulation and Consent Decree. DEQ also recommends a Partial No Further Action determination for the groundwater portion of the Hoyt Street Railyard project. The Certification of Completion and Partial No Further Action determination will be recorded in Your DEQ Online (YDO) for Environmental Cleanup Site Information (ECSI) file #1080.

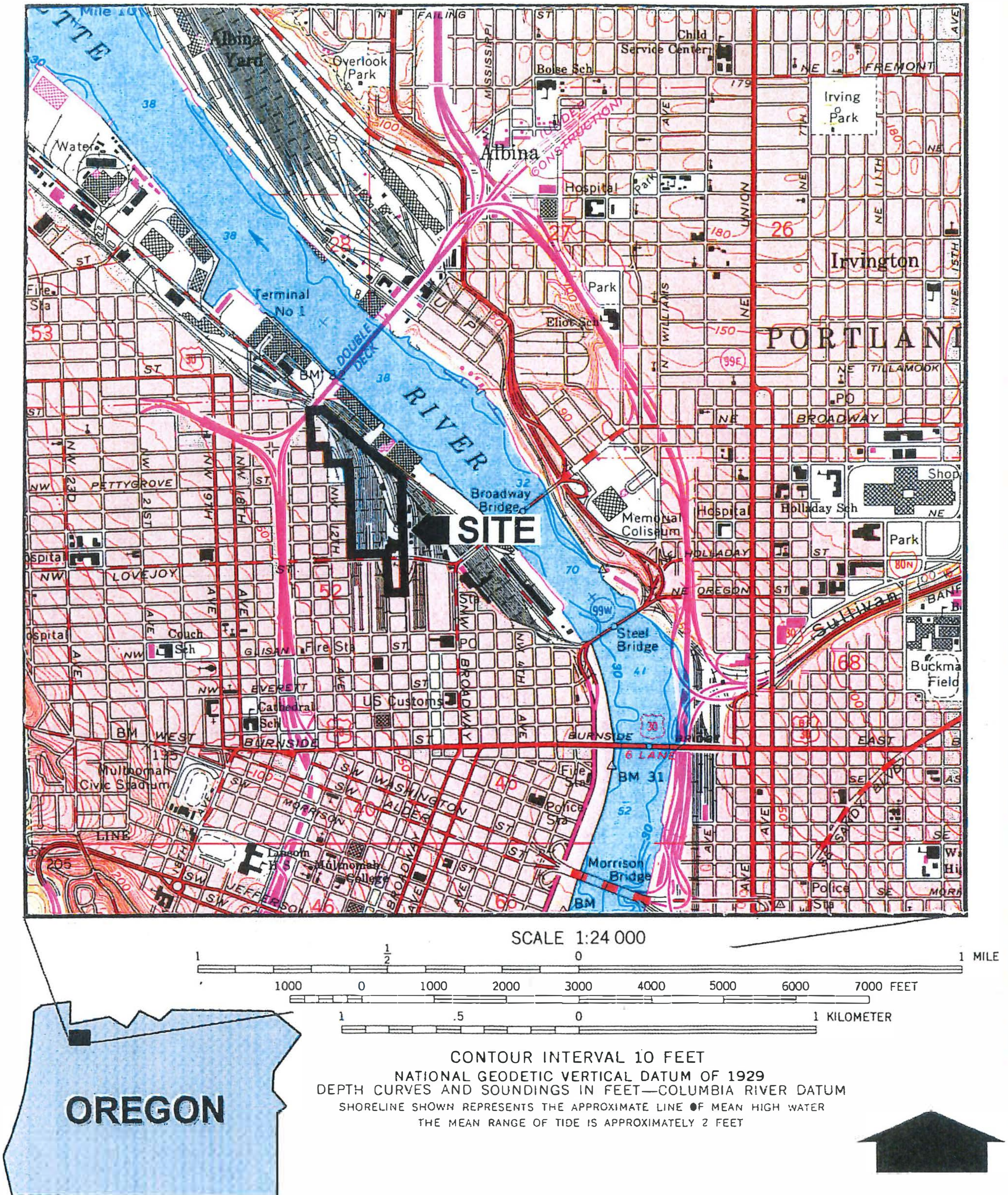
7. ADMINISTRATIVE RECORD

1. Hart Crowser "Preliminary Environmental Assessment" (January 12, 1990).
2. John Mathes & Associates "Phase I Environmental Assessment" (February 2, 1990).
3. Remediation Technologies (RETEC) "Preliminary Assessment Information Package" (June 1992).
4. Geotechnical Resources Inc. (GRI) "Level II Environmental Investigation of the Southern Portion of the Hoyt Street Yard" (June 3, 1993).
5. DEQ/BNRR "Order on Consent" (August 16, 1995).
6. RETEC "Remedial Investigation Report" (October 9, 1996).
7. DEQ "Record of Decision" (December 15, 2000).
8. DEQ "Stipulation and Consent Decree" (January 31, 2002).
9. The RETEC Group "2001 Annual Progress Report: Hoyt Street Property Containment & Recovery System and LNAPL Excavation Completion Report" (April 4, 2002).

10. The RETEC Group "Groundwater Remedial Design/Remedial Action Work Plan" (June 6, 2002).
11. The RETEC Group "Final Groundwater Monitoring & Contingency Plan" (January 29, 2004).
12. The RETEC Group "Tanner Creek Sewer Investigation and Evaluation" (February 2, 2004).
13. DEQ "Tanner Creek Sewer Investigation Memo" (May 1, 2008).
14. DEQ "Source Control Decision" [for Centennial Mills] (March 7, 2014).
15. Integral Consulting "Updated Groundwater Project Closeout Report" (November 2014).
16. DEQ "Portland Harbor Upland Source Control Summary Report" (November 21, 2014; updated March 25, 2016).
17. Haley & Aldrich "Phase II Remedial Action Summary" [for Tanner Creek Sewer Outfall] (December 21, 2022).
18. Integral Consulting "Well Decommissioning Summary" (July 31, 2024).
19. DEQ "Staff Closure Memorandum" (November 6, 2024).
20. Industrial Economics "Comments Memorandum" (February 4, 2025).
21. Integral Consulting "Response to Comments on Staff Memorandum" (September 24, 2025).

8. ATTACHMENTS

1. Topographic Map (1977)
2. Aerial Photograph (1959)
3. Satellite Photograph (2024)
4. Zoning Map
5. Well Location Map (1992)
6. Fueling Facility Map (1992)
7. Hydrocarbon Pool Diagram
8. Site Layout (1940)
9. Groundwater Sample Locations (1996)
10. Groundwater Sample Results (1996)
11. LNAPL Excavation Map
12. Groundwater Sample Locations (2006)
13. TCS Backfill Sample Results (2005-06)
14. Groundwater Sample Results (2006-13)
15. cPAH TEQ Spreadsheet
16. Portland Harbor Sediments Map



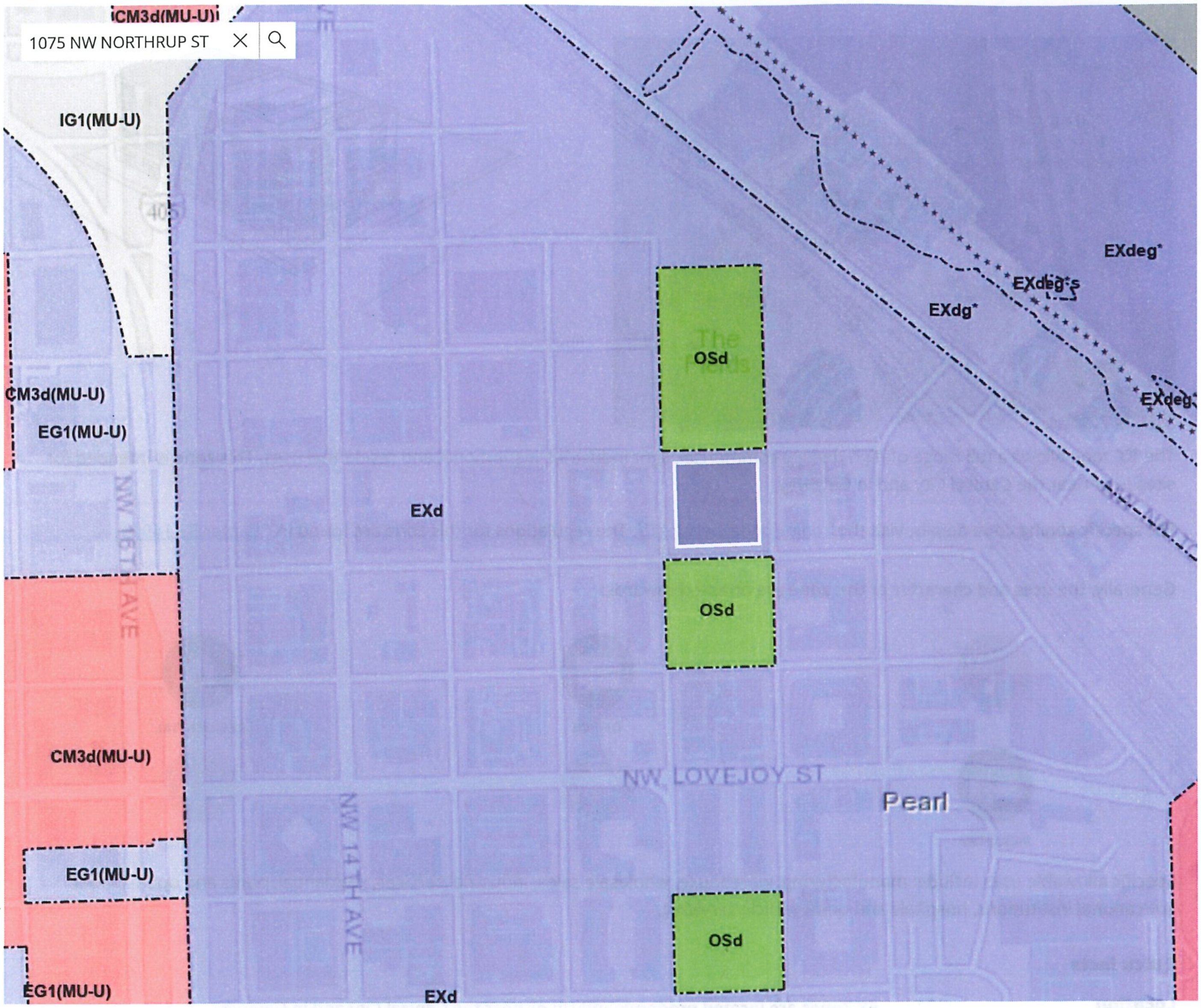
SOURCE: USGS 7.5 Minute Portland Quadrangle (1977).

SITE LOCATION MAP
HOYT STREET PROPERTY
PORTLAND, OREGON

FIGURE 1

Attachment 2

Attachment 3



Attachment 4

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Oregon Metro, Bureau of Land Management, State of Oregon, State of Oregon DOT, State of Oregon GEO, Esri, HERE, Garmin, GeoTechnologies, Inc., USGS, EPA | City ... Powered by Esri

NW OVERTON ST

Comprehensive information for this property is available on PortlandMaps.com: R676583

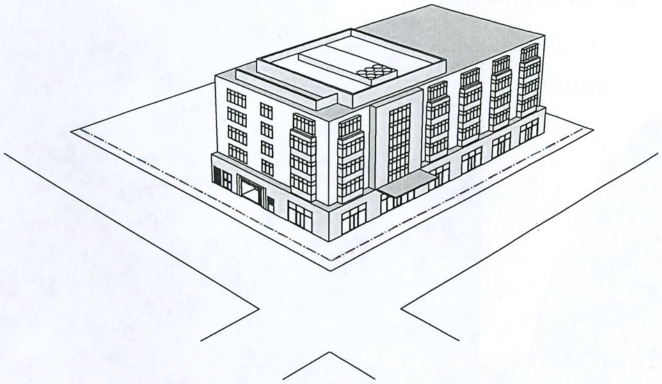
The official zoning quarter section map(s) for this property is 2929

This property contains the following Comprehensive Plan Map Designation(s):
Central Employment

Detailed zone summaries are available below.

Base zones

Central Employment (EX)



The **EX** zone allows a full range of high density commercial, light industrial, institutional and residential uses. This zone is intended for sites in or near the Central City and in Gateway.

For specific zoning code details, visit the zoning code website. The regulations for this zone are found in Chapter 33.140.

Generally, the uses and character of this zone are oriented towards:

Specific allowable uses include: manufacturing, warehouse, wholesale sales, industrial services, residential, parks and open spaces, educational institutions, hospitals and quick vehicle servicing.

Quick facts

Location	EX Zones are located predominantly in or near the Central City and in Gateway.
65'+	**maximum height**, which is generally 6 stories.
FAR Range	FAR in the EX zone ranges from **3:1 - 9:1**

Height and FAR varies per plan district maps. Generally, buildings in EX zones are at least 65' and can reach up to 225' in some places.

Parking	is generally not required for non-residential uses when development is located near transit or contains fewer than 30 residential units.

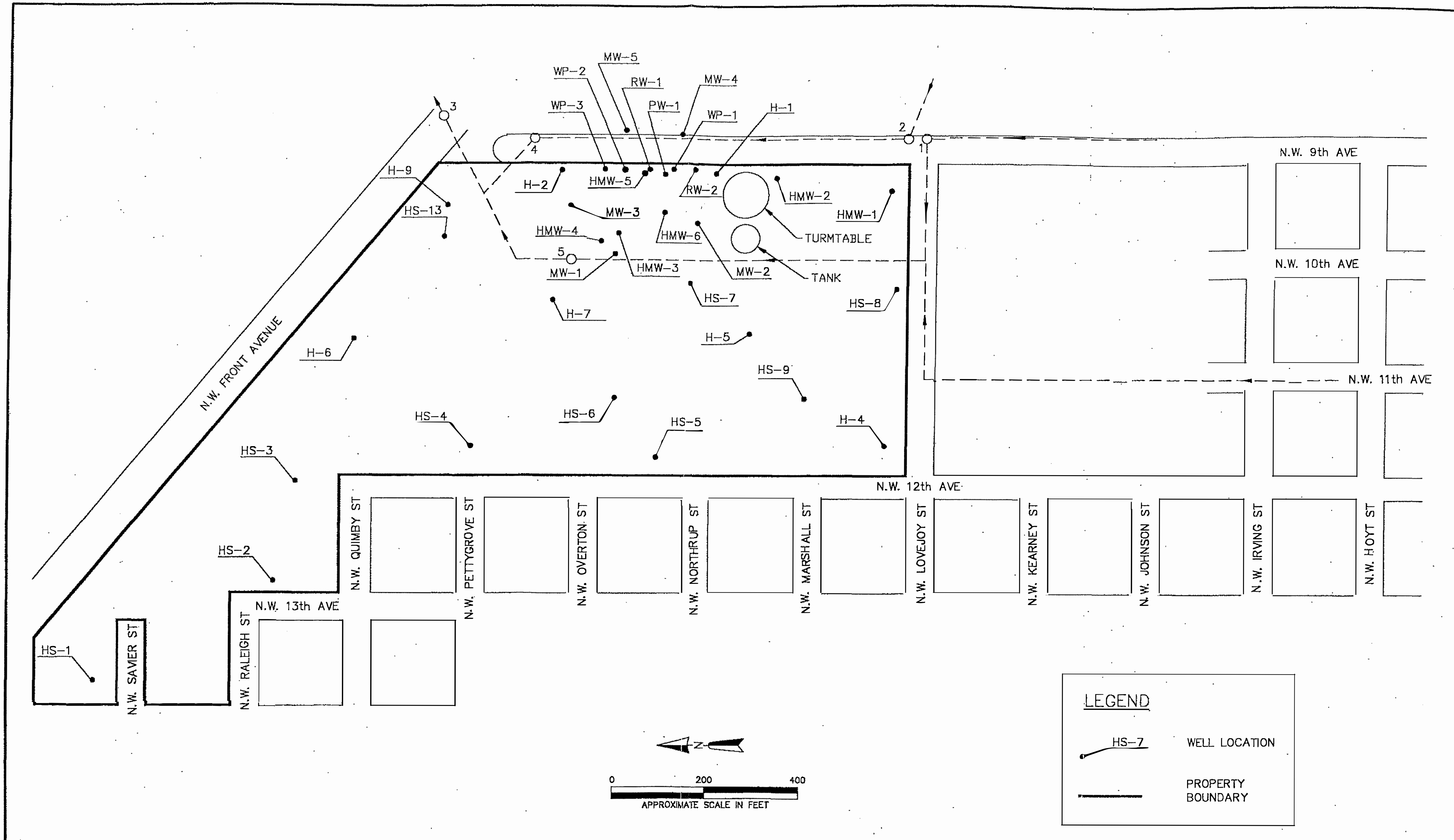
Overlay zones

Design (d)

The Design **(d)** overlay zone ensures that Portland is both a city designed for people and a city in harmony with nature. The Design overlay zone supports the city's evolution within current and emerging centers of civic life. The overlay promotes design excellence in the built environment through the application of additional design standards and design guidelines that:

- Build on context by enhancing the distinctive physical, natural, historic and cultural qualities of the location while accommodating growth and change;
- Contribute to a public realm that encourages social interaction and fosters inclusivity in people's daily experience; and
- Promotes quality and long-term resilience in the face of changing demographics, climate and economy.

For specific zoning code details, visit the zoning code website. The regulations for this zone are found in Chapter 33.420.



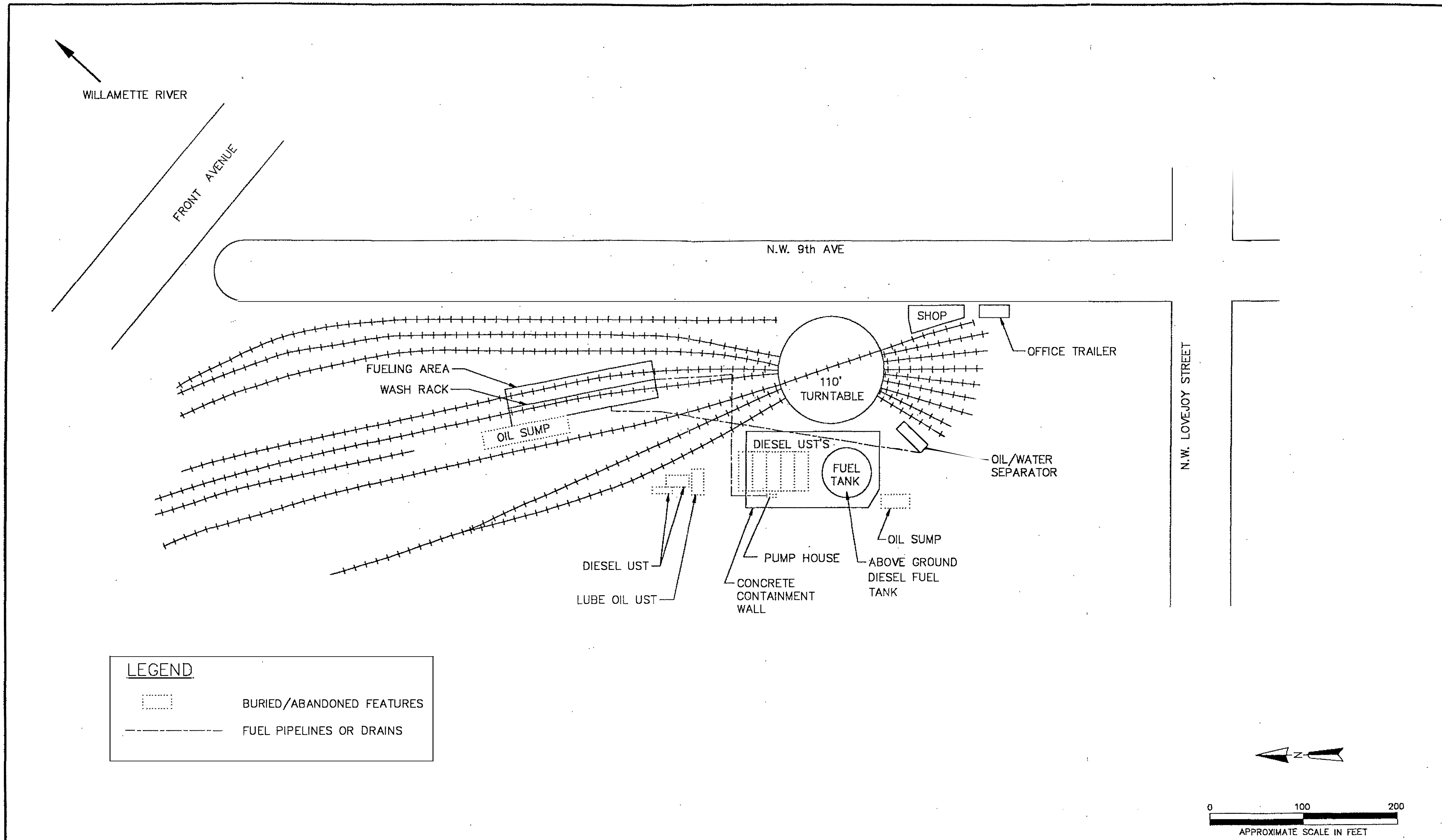
SOURCES: JOHN MATHES & ASSOCIATES (1989), CITY OF PORTLAND, DEPARTMENT OF PUBLIC WORKS SEWER MAP (1980), AND BURLINGTON NORTHERN FACILITY MAP

DRAWN BY	L.Y.
DATE	6/19/92
CHK'D BY	W.B.
DATE	6/19/92
SCALE	NOTED
CAD FILE:	821/92B005

WELL LOCATION MAP
HOYT STREET PROPERTY
PORTLAND, OREGON

RETEC
REMEDIATION TECHNOLOGIES INC

FIGURE 5



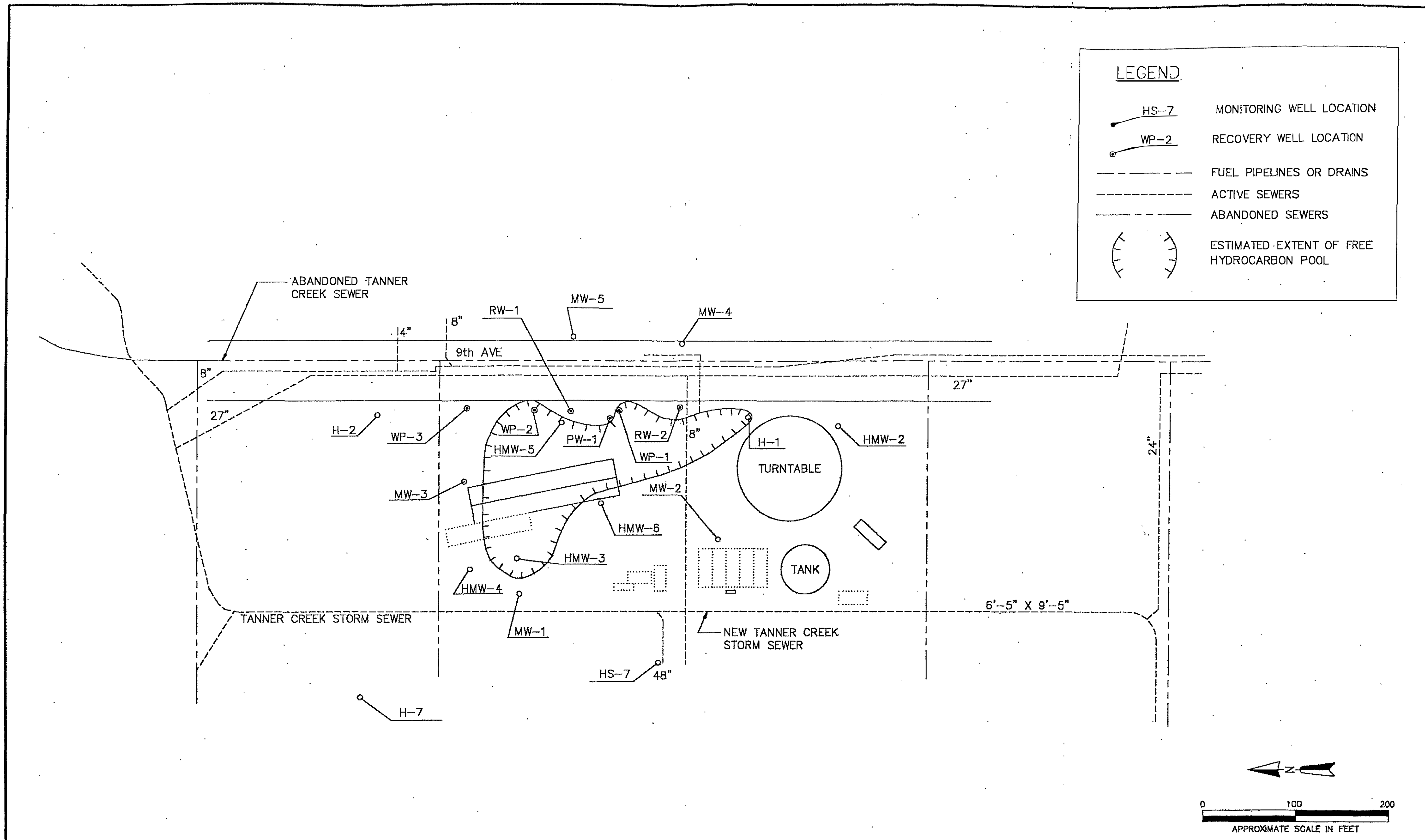
SOURCES: JOHN MATHES & ASSOCIATES (1989), CITY OF PORTLAND, DEPARTMENT OF PUBLIC WORKS SEWER MAP (1980), AND BURLINGTON NORTHERN FACILITY MAP

DRAWN BY	L.Y.
DATE	6/18/92
CHK'D BY	W.B.
DATE	6/18/92
SCALE	NOTED
CAD FILE:	821/928003

FUELING FACILITY MAP
HOYT STREET PROPERTY
PORTLAND, OREGON

RETEC
REMEDIATION TECHNOLOGIES INC

FIGURE 6



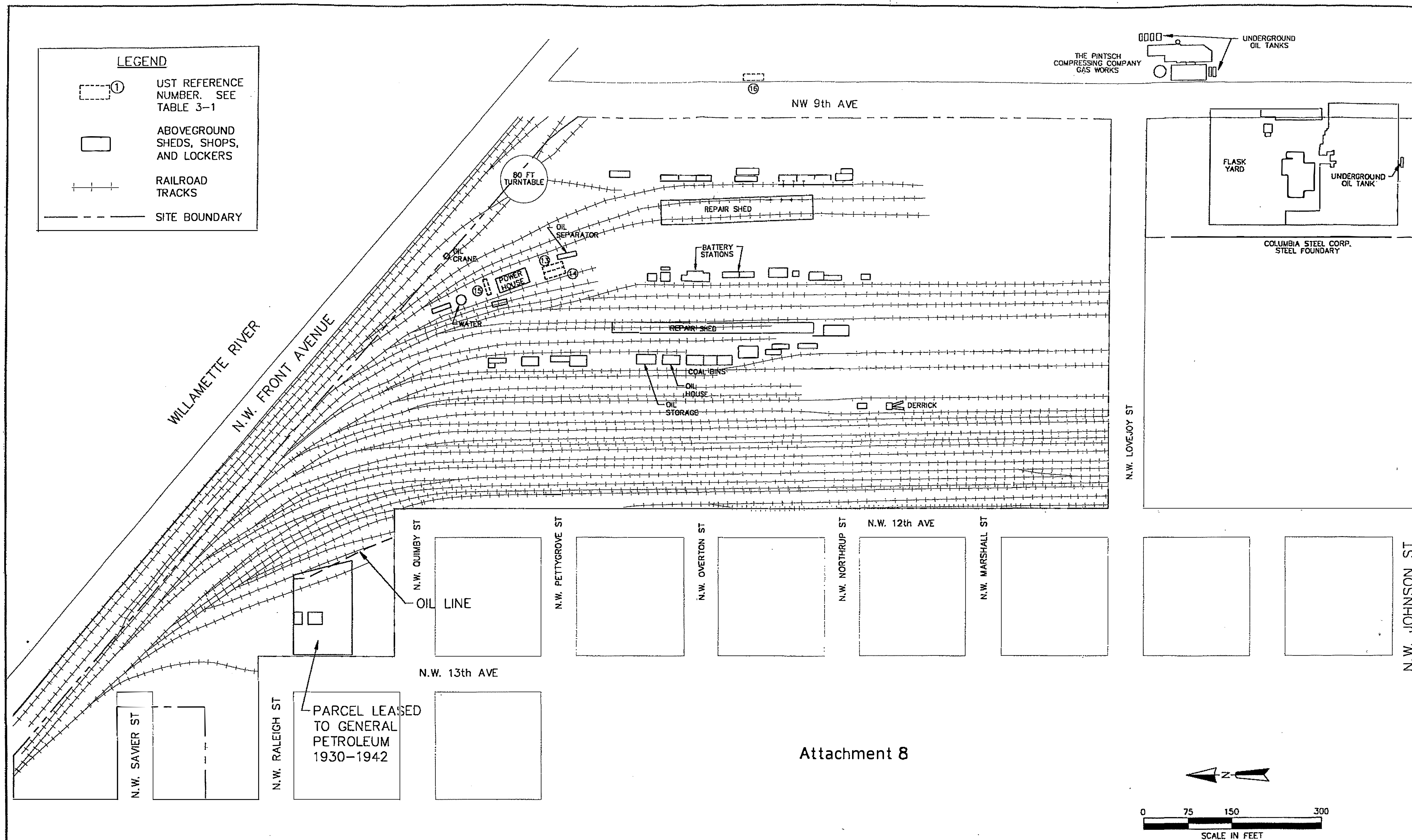
SOURCES: JOHN MATHES & ASSOCIATES (1989), CITY OF PORTLAND, DEPARTMENT OF PUBLIC WORKS SEWER MAP (1980), AND BURLINGTON NORTHERN FACILITY MAP

DRAWN BY	L.Y.
DATE	5/5/92
CHK'D BY	W.B.
DATE	5/5/92
SCALE	NOTED
CAD FILE:	821/92B002

EXTENT OF FREE HYDROCARBON POOL
HOYT STREET PROPERTY
PORTLAND, OREGON

RETEC
REMEDIATION TECHNOLOGIES INC

FIGURE 7



Attachment 8

SOURCES: CITY OF PORTLAND, DEPARTMENT OF PUBLIC WORKS SEWER MAP (1980) AND BURLINGTON NORTHERN FACILITY MAPS AND FILES

NO	DRWN	DATE	REVISION	CHKD	DATE	APPVD	DATE
0	E.F.	5/6/96	INITIAL ISSUE				

REFERENCE DWG | DESCRIPTION

BURLINGTON NORTHERN RAILROAD

1-0821-310

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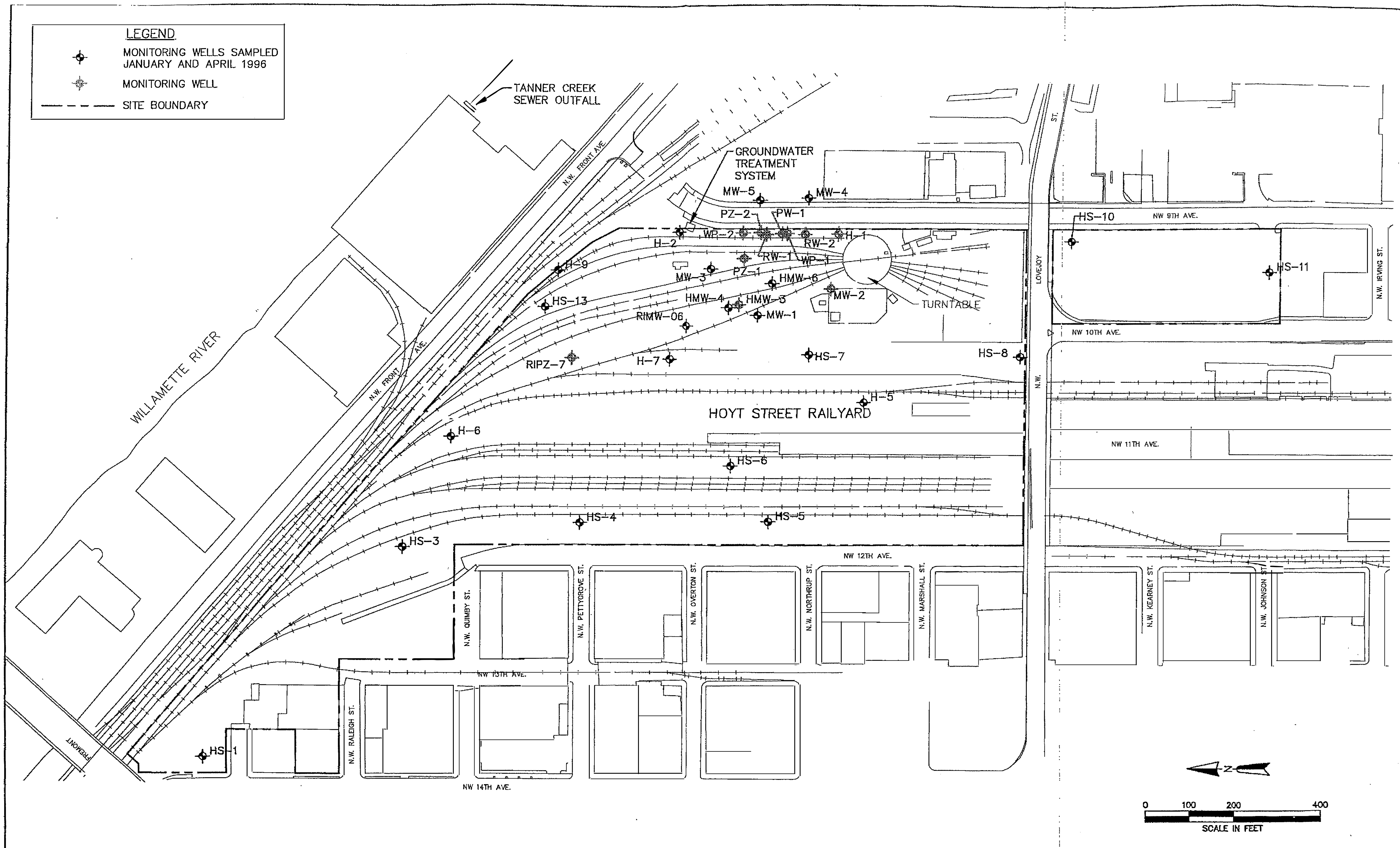
CURRENT DATE: 5/6/96 | CAD FILE 08215425

SITE LAYOUT (CIRCA 1940)

HOYT STREET PROPERTY
PORTLAND, OREGON

RETEC
REMEDIATION TECHNOLOGIES INC

DRAWING NO. FIGURE 2-2 | REV. 0



		6						
		5						
		4						
		3						
		2						
		1						
		0	E.F.	6/13/96	DRAFT			
REFERENCE DWG	DESCRIPTION	NO	DRWN	DATE	REVISION	CHKD DATE	APPVD	DATE

BURLINGTON NORTHERN RAILROAD

Attachment 9

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CURRENT DATE: 6/13/96 CAD FILE 0621S63S

RI GROUNDWATER SAMPLE LOCATIONS

HOYT STREET PROPERTY
PORTLAND, OREGON

RETEC
REMEDIATION TECHNOLOGIES INC

DRAWING NO. FIGURE 4-2 REV. 0

REIEC

ATTACHMENT 10
SUMMARY OF CONSTITUENTS DETECTED IN GROUNDWATER FROM PREVIOUS INVESTIGATIONS HOYT STREET PROPERTY

Parameters	Groundwater Results			Screening Criteria	
	Number of Analysis	Number of Detections	Maximum Concentration	Aquatic Criteria [1]	Drinking Water MCL
Volatile Organics (µg/L)					
Benzene	18	1	940	71	5
Ethylbenzene	18	1	500	29,000	700
Methylene Chloride	18	4	26	1,600	--
Toluene	18	1	130	200,000	1,000
Xylenes (Total)	18	1	610	--	10,000
PAHs (µg/L)					
Naphthalene	26	9	6,900	--	--
2-Methylnaphthalene	5	1	150	--	--
Acenaphthylene	26	1	14	--	--
Acenaphthene	26	7	280	--	--
Fluorene	26	11	240	14,000	--
Phenanthrene	26	18	730	--	--
Anthracene	26	17	140	110,000	--
Fluoranthene	26	12	560	370	--
Pyrene	26	16	540	11,000	--
Benzo(a)anthracene	26	4	130	0.031	0.1
Bis(2-ethylhexyl)phthalate	10	4	4	5.9	--
Chrysene	26	10	140	0.031	0.2
Benzo(b)fluoranthene	26	8	55	0.031	0.2
Benzo(k)fluoranthene	26	7	65	0.031	0.2
Benzo(a)pyrene	26	9	100	0.031	0.2
Indeno(1,2,3-cd)pyrene	26	4	40	0.031	0.4
Dibenzo(a,h)anthracene	26	2	39	0.031	0.3
Benzo(g,h,i)perylene	26	3	42	--	--
Dissolved Metals (µg/L)					
Antimony	2	2	20	4,300	6
Chromium	21	1	27.5	210	100
Copper	18	5	20	12	1,300
Lead	21	4	130	3.2	15 [2]
Vanadium	3	1	109	--	--
Zinc	18	14	90	110	5,000 [3]

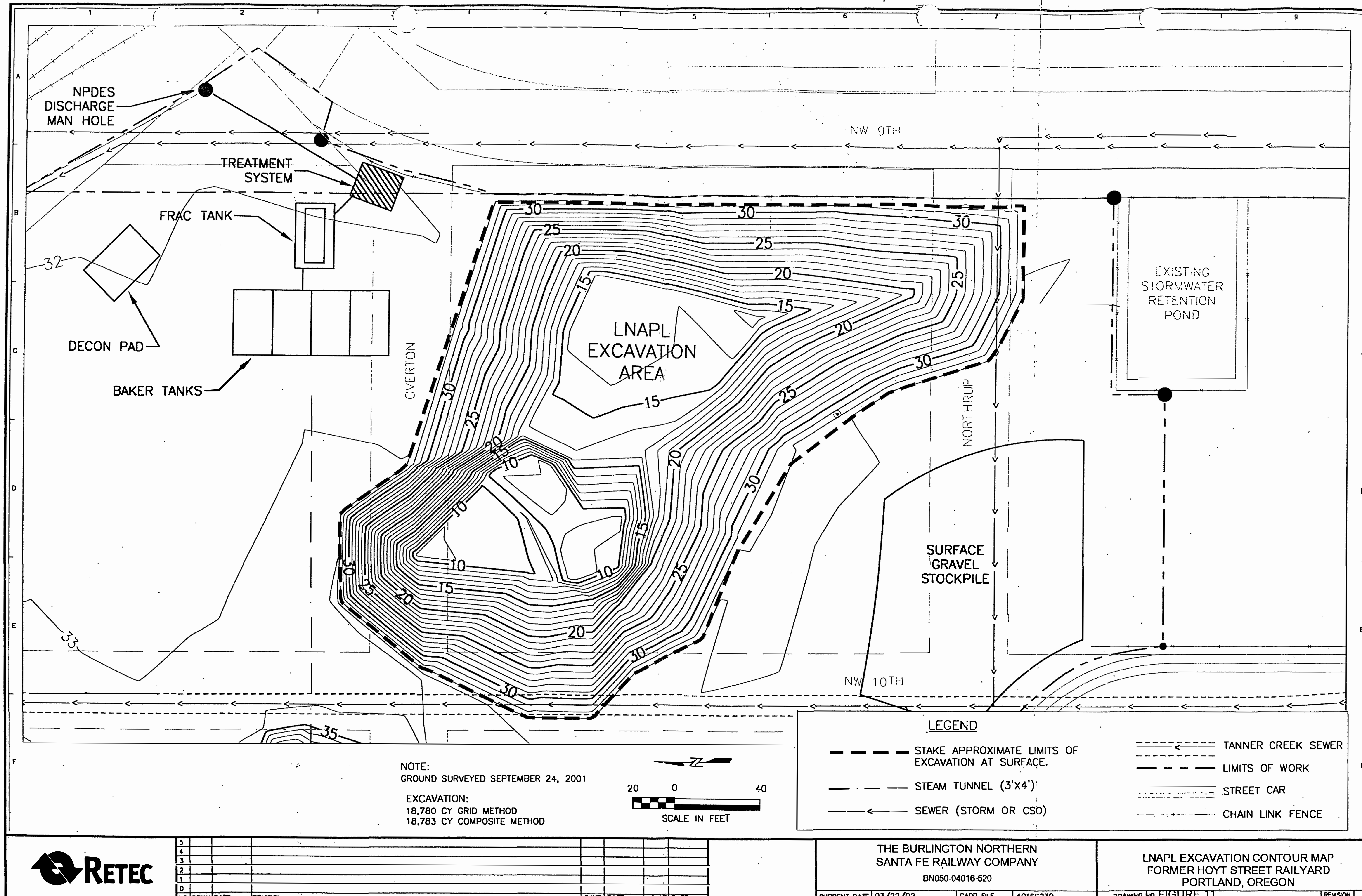
NOTES:

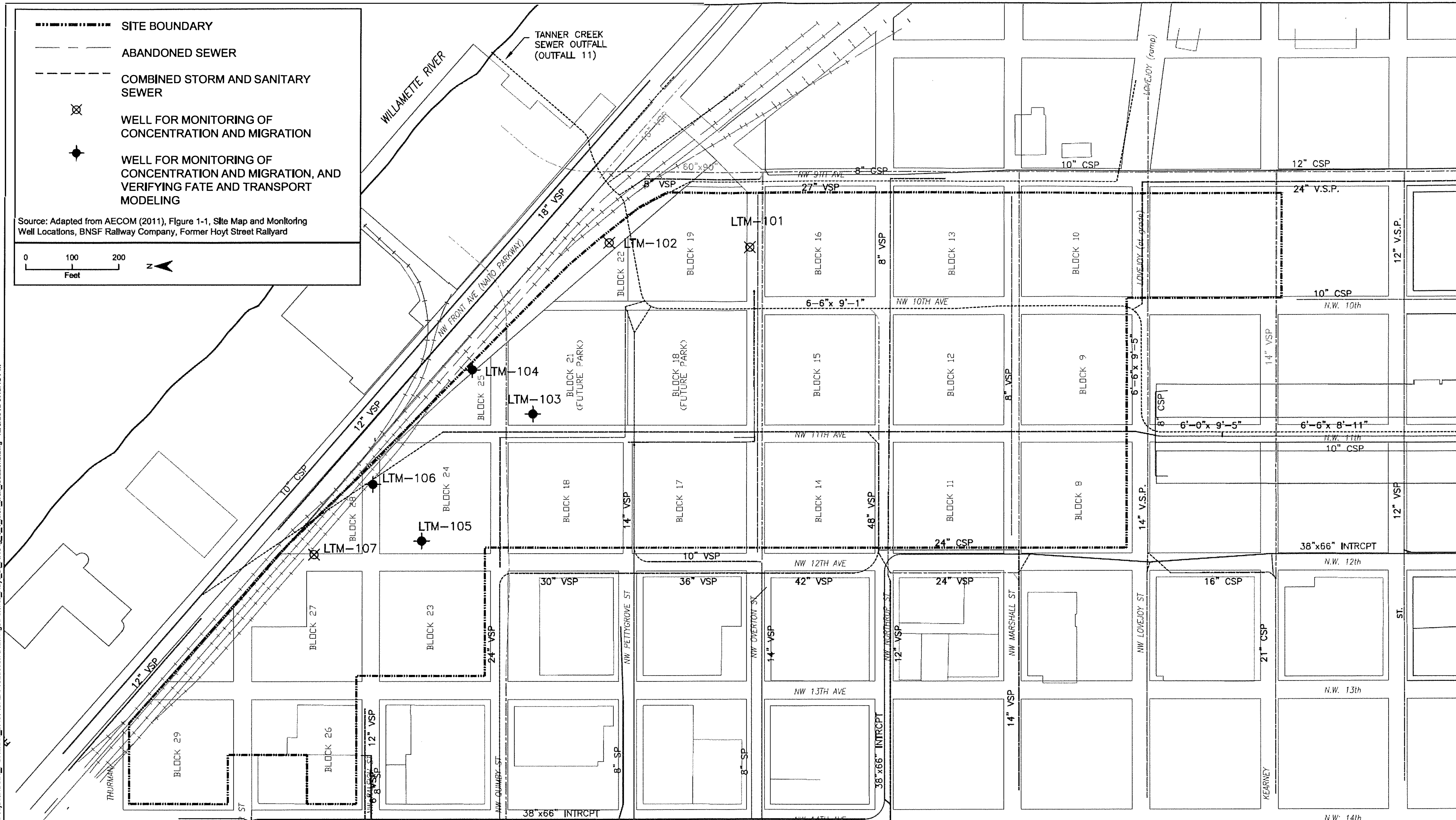
Groundwater data from 1987 has not been included due to the unusually high concentrations of total suspended solids. Please refer to Appendix C for analytical data summarized in this table.

Screening criteria established using the "EPA Water Quality Standards for Human Consumption of Organisms, 40 CFR Part 131.36(b)(1)," May 1993, and "EPA Drinking Water Standards," November 1994.

"--" - No criteria available.

1. Aquatic criteria include human consumption of organisms for volatile organics and PAHs and freshwater aquatic criteria for metals (no human consumption criteria are available).
2. Action level (treatment technique).
3. Secondary standard.


NPDES DISCHARGE MAN HOLE
TREATMENT SYSTEM
FRAC TANK
DECON PAD
BAKER TANKS
NW 9TH
OVERTON
NORTHRUP
NW 10TH
LNAPL EXCAVATION AREA
EXISTING STORMWATER RETENTION POND
SURFACE GRAVEL STOCKPILE
NOTE:
GROUND SURVEYED SEPTEMBER 24, 2001
EXCAVATION:
18,780 CY GRID METHOD
18,783 CY COMPOSITE METHOD
SCALE IN FEET
LEGEND
STAKE APPROXIMATE LIMITS OF EXCAVATION AT SURFACE.
STEAM TUNNEL (3'X4')
SEWER (STORM OR CSO)
TANNER CREEK SEWER
LIMITS OF WORK
STREET CAR
CHAIN LINK FENCE
RETEC
THE BURLINGTON NORTHERN SANTA FE RAILWAY COMPANY
BN050-04016-520
CURRENT DATE 03/22/02
CADD FILE 4016S230
LNAPL EXCAVATION CONTOUR MAP
FORMER HOYT STREET RAILYARD
PORTLAND, OREGON
DRAWING NO. FIGURE 11



integral consulting inc.

Figure 12.
Site Map and Monitoring Well Locations
Former Hoyt Street Railyard

P:\Projects\C921_POHarbor_BNSF\CAD\Production Drawings\Former_Hoyt_St_RR\Fig_1_1_mon_well_locations.dwg 12/5/2012 5:10:18 PM

Attachment 13 - Page 1 - Groundwater Analytical Results

Chemical Name	Unit		Task Code Location ID Sample ID Sample Date	3Q_2005 CMW-1 CMW-1-0705 7/28/2005	3Q_2005 CMW-1 (dup) CMW-10-0705 7/28/2005	4Q_2005 CMW-1 CMW-1-1005 10/31/2005	4Q_2005 CMW-1 (dup) CMW-10-1005 10/31/2005	1Q_2006 CMW-1 CMW-1-0106 1/31/2006	1Q_2006 CMW-1 (dup) CMW-10-0106 1/31/2006
		Trigger Level	Surface Water TRV						
1-Methylnaphthalene	µg/L			NR	NR	0.41	0.39	0.353	0.37
2-Methylnaphthalene	µg/L			NR	NR	< 0.1	< 0.1	< 0.0971	< 0.101
Acenaphthene	µg/L		55.85	6.31	5.48	5.71	5.58	3.69	3.75
Acenaphthylene	µg/L		306.9	0.357 J	< 0.1 J	0.13	0.122	< 0.0971	< 0.101
Anthracene	µg/L		20.73	0.286	0.24	0.276	0.282	0.19	0.218
Benzo(a)anthracene	µg/L	10	2.23	< 0.119	< 0.1	< 0.1	< 0.1	< 0.0971	< 0.101
Benzo(a)pyrene	µg/L	3.8	0.96	< 0.119	< 0.1	< 0.1	< 0.1	< 0.0971	< 0.101
Benzo(b)fluoranthene	µg/L	14	0.68	< 0.119	< 0.1	< 0.1	< 0.1	< 0.0971	< 0.101
Benzo(g,h,i)perylene	µg/L	0.26	0.44	< 0.119	< 0.1	< 0.1	< 0.1	< 0.0971	< 0.101
Benzo(k)fluoranthene	µg/L	0.55	0.64	< 0.119	< 0.1	< 0.1	< 0.1	< 0.0971	< 0.101
Chrysene	µg/L	1.5	2.04	< 0.119	< 0.1	< 0.1	< 0.1	< 0.0971	< 0.101
Dibenz(a,h)anthracene	µg/L			NR	NR	< 0.1	< 0.1	< 0.0971	< 0.101
Fluoranthene	µg/L	14	7.109	0.595	0.52	0.612	0.63	0.384	0.453
Fluorene	µg/L		39.30	1.31	1.18	0.456	0.474	0.858	0.895
Indeno(1,2,3-cd)pyrene	µg/L	62	0.28	< 0.119	< 0.1	< 0.1	< 0.1	< 0.0971	< 0.101
Naphthalene	µg/L			NR	NR	0.106	< 0.1	0.113	0.139
Phenanthrene	µg/L		19.13	0.333	0.28	0.246	0.25	0.346	0.434
Pyrene	µg/L	3.8	10.11	0.714	0.6	0.778	0.826	0.586	0.663

Notes

Trigger Levels are from the *Final Groundwater Monitoring and Contingency Plan* (RETEC, 2005) Table 5-3.

TRV = Toxicity Reference Values, from the *Risk Assessment* (RETEC, 1998) and the *Tanner Creek Investigation and Evaluation Report* (RETEC, 2004)

Attachment 13 - Page 2 - Groundwater Analytical Results

Chemical Name	Unit	Trigger Level	Surface Water TRV	2Q_2006	2Q_2006	3Q_2005	4Q_2005	1Q_2006	2Q_2006
			Task Code	2Q_2006	2Q_2006	3Q_2005	4Q_2005	1Q_2006	2Q_2006
			Location ID	CMW-1	CMW-1 (dup)	CMW-2	CMW-2	CMW-2	CMW-2
			Sample ID	CMW-1-0506	CMW-10-0506	CMW-2-0705	CMW-2-1005	CMW-2-0106	CMW-2-0506
			Sample Date	5/23/2006	5/23/2006	7/28/2005	10/31/2005	1/31/2006	5/23/2006
1-Methylnaphthalene	µg/L			0.128	0.13	NR	< 0.101	< 0.0971	< 0.1
2-Methylnaphthalene	µg/L			< 0.1	< 0.1	NR	< 0.101	< 0.0971	< 0.1
Acenaphthene	µg/L		55.85	4.2	4.46	< 0.1	< 0.101	< 0.0971	< 0.1
Acenaphthylene	µg/L		306.9	< 0.1	< 0.1	2.88	0.105	< 0.0971	< 0.1
Anthracene	µg/L		20.73	0.198	0.214	< 0.1	< 0.101	< 0.0971	< 0.1
Benzo(a)anthracene	µg/L	10	2.23	< 0.1	< 0.1	< 0.1	< 0.101	< 0.0971	< 0.1
Benzo(a)pyrene	µg/L	3.8	0.96	< 0.1	< 0.1	< 0.1	< 0.101	< 0.0971	< 0.1
Benzo(b)fluoranthene	µg/L	14	0.68	< 0.1	< 0.1	< 0.1	< 0.101	< 0.0971	< 0.1
Benzo(g,h,i)perylene	µg/L	0.26	0.44	< 0.1	< 0.1	< 0.1	< 0.101	< 0.0971	< 0.1
Benzo(k)fluoranthene	µg/L	0.55	0.64	< 0.1	< 0.1	< 0.1	< 0.101	< 0.0971	< 0.1
Chrysene	µg/L	1.5	2.04	< 0.1	< 0.1	< 0.1	< 0.101	< 0.0971	< 0.1
Dibenz(a,h)anthracene	µg/L			< 0.1	< 0.1	NR	< 0.101	< 0.0971	< 0.1
Fluoranthene	µg/L	14	7.109	0.456	0.502	< 0.1	< 0.101	< 0.0971	< 0.1
Fluorene	µg/L		39.30	0.836	0.898	< 0.1	< 0.101	< 0.0971	< 0.1
Indeno(1,2,3-cd)pyrene	µg/L	62	0.28	< 0.1	< 0.1	< 0.1	< 0.101	< 0.0971	< 0.1
Naphthalene	µg/L			< 0.1	< 0.1	NR	< 0.101	< 0.0971	< 0.1
Phenanthrene	µg/L		19.13	< 0.1 J	0.104 J	< 0.1	< 0.101	< 0.0971	< 0.1
Pyrene	µg/L	3.8	10.11	0.642	0.682	< 0.1	< 0.101	< 0.0971	< 0.1

Notes

Trigger Levels are from the *Final Groundwater Monitoring and Contingency Plan* (RETEC, 2005) Table 5-3.

TRV = Toxicity Reference Values, from the *Risk Assessment* (RETEC, 1998) and the *Tanner Creek Investigation and Evaluation Report* (RETEC, 2004)

Attachment 14. Long-term Groundwater Monitoring Analytical Results

		Chemical Name	Benzo(a) anthracene (µg/L)	Benzo(a) pyrene (µg/L)	Benzo(b) fluoranthene (µg/L)	Benzo(g,h,i) perylene (µg/L)	Benzo(k) fluoranthene (µg/L)	Chrysene (µg/L)	Fluoranthene (µg/L)	Indeno(1,2,3-cd) pyrene (µg/L)	Pyrene (µg/L)	Lead (µg/L)
		Action Level	10	3.8	14	0.26	0.55	1.5	14	62	3.8	338
Sample ID	Sample Date	Sample Type										
LTM-101												
LTM-101-0507	5/5/2007		0.0305	0.0397	< 0.01	< 0.1	< 0.01	0.0351	< 0.1	< 0.01	< 0.1	323
LTM-102												
LTM-102-1006	10/19/2006		< 0.00971	< 0.00971	< 0.00971	< 0.0971	< 0.00971	< 0.00971	< 0.0971	< 0.00971	< 0.0971	2.65
LTM-102-0107	1/30/2007		< 0.01	< 0.01	< 0.01	< 0.1	< 0.01	< 0.01	< 0.1	< 0.01	< 0.1	< 50
LTM-102-0407	4/26/2007		< 0.00943	< 0.00943	< 0.00943	< 0.0943	< 0.00943	< 0.00943	< 0.0943	< 0.00943	0.125	< 50
LTM-102-0707	7/11/2007		0.0143	< 0.00962	0.0189	< 0.0962	0.0154	0.0247	< 0.0962	0.0272	0.159	< 50
LTM-102-0108	1/21/2008		0.013	< 0.00943	< 0.00943	< 0.0943	< 0.00943	0.0114	< 0.0943	< 0.00943	0.129	—
LTM-102-0708	7/10/2008		0.0676	< 0.00943	0.0417	< 0.0943	0.0474	0.0596	< 0.0943	< 0.00943	< 0.0943	—
LTM 102 0109	1/29/2009		< 0.00962	< 0.00962	< 0.00962	< 0.0962	< 0.00962	< 0.00962	< 0.0962	< 0.00962	0.131	—
LTM 102 072909	7/29/2009											
LTM-102-0110	1/29/2010		< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	0.24	—
LTM-102-0911	9/15/2011		< 0.5 J	< 0.5 J	< 0.5 J	≤ 0.5 J	< 0.5 J	< 0.5 J	< 0.5 J	< 0.5 J	< 0.5 J	—
GW2012091901	9/19/2012		< 0.029	< 0.029	< 0.029	≤ 0.029	< 0.029	< 0.029	< 0.029	< 0.029	< 0.029	—
GW2013092001	9/20/2013		< 0.0059	< 0.0059	< 0.0059	< 0.0059	< 0.0059	< 0.0059	0.01 J	< 0.0059	0.045	—
LTM-103												
LTM-103-1006	10/19/2006		0.0153	< 0.0101	< 0.0101	< 0.101	< 0.0101	0.0157	0.378	< 0.0101	0.644	< 1
LTM-103-0107	1/30/2007		0.0342	< 0.0108	< 0.0108	< 0.108	< 0.0108	0.0457	0.404	< 0.0108	0.799	< 50
LTM-103-0407	4/26/2007		0.0864	0.0836	0.0503	< 0.0971	0.0681	0.0998	0.681	0.031	1.18	< 50
LTM-103-0707	7/11/2007		0.0524	0.0457	0.0187	< 0.0962	0.0303	0.0638	0.568	0.0258	0.966	< 50
LTM-103-1007	10/9/2007		0.0654	0.0439	0.0247	0.0281 J	0.0464	0.0824	0.47	0.0254	0.59	< 50
LTM-103-0108	1/21/2008		0.0778 J	0.022	0.0132	< 0.099	0.017	0.0956 J	0.661	0.0766 J	0.997	—
LTM-103-0708	7/10/2008		0.0711	< 0.00943	< 0.00943	< 0.0943	< 0.00943	0.0681	0.904	< 0.00943	1.35	—
LTM 103 0109	1/29/2009		< 0.00971	< 0.00971	< 0.00971	< 0.0971	< 0.00971	< 0.00971	< 0.0971	< 0.00971	< 0.0971	—
LTM103072909	7/28/2009		0.044	< 0.01	< 0.0096	< 0.0096	< 0.0096	0.042	0.99	< 0.0096	2.3	—
LTM-103-0110	1/29/2010		0.25	0.19	< 0.09	0.097	0.13	0.23	1.2	< 0.09	2.3 J	—
LTM-103-0911	9/15/2011		< 0.0971 J	< 0.0971 J	< 0.0971 J	< 0.0971 J	< 0.0971 J	< 0.0971 J	0.197 J	< 0.0971 J	2.44 J	—
LTM-113-0911	9/15/2011	Duplicate	< 0.0943 J	< 0.0943 J	< 0.0943 J	< 0.0943 J	< 0.0943 J	< 0.0943 J	0.154 J	< 0.0943 J	1.86 J	—
GW2012100201	10/2/2012		< 0.029	< 0.029	< 0.029	< 0.029	< 0.029	< 0.029	0.17	< 0.029	0.81	—
GW2013091901	9/19/2013		0.14	0.034	0.03	0.017 J	0.024	0.12	0.41	0.021	2.7	—
LTM-104												
LTM-104-1006	10/19/2006		< 0.01	< 0.01	< 0.01	< 0.1	< 0.01	< 0.01	< 0.1	< 0.01	< 0.1	< 1
LTM-104-0107	1/30/2007		< 0.00962	< 0.00962	< 0.00962	< 0.0962	< 0.00962	< 0.00962	< 0.0962	< 0.00962	< 0.0962	< 50
LTM-104-0407	4/26/2007		< 0.00962	< 0.00962	< 0.00962	< 0.0962	< 0.00962	< 0.00962	< 0.0962	< 0.00962	< 0.0962	< 50
LTM-104-0707	7/11/2007		< 0.00971	< 0.00971	< 0.00971	< 0.0971	< 0.00971	< 0.00971	< 0.0971	< 0.00971	< 0.0971	< 50
LTM-104-1007	10/9/2007		< 0.00943	< 0.00943	< 0.00943	< 0.0943	< 0.00943	< 0.00943	< 0.0943	< 0.00943	< 0.0943	< 50
LTM-104-0108	1/21/2008		0.0114	< 0.00962	< 0.00962	< 0.0962	< 0.00962	< 0.00962	< 0.0962	< 0.00962	< 0.0962	—
LTM-204-0108	1/21/2008	Duplicate	0.0147	< 0.01	< 0.01	< 0.1	< 0.01	< 0.01	< 0.1	< 0.01	< 0.1	—
LTM-104-0708	7/10/2008		< 0.00943	< 0.00943	< 0.00943	< 0.0943	< 0.00943	< 0.00943	< 0.0943	< 0.00943	< 0.0943	—
LTM 104 0109	1/29/2009		< 0.00943	< 0.00943	< 0.00943	< 0.0943	< 0.00943	< 0.00943	< 0.0943	< 0.00943	< 0.0943	—
LTM104072809	7/28/2009		< 0.0097	< 0.01	< 0.0097	< 0.0097	< 0.0097	< 0.0097	< 0.0097	< 0.0097	0.01	—
LTM-104-0110	1/29/2010		< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	—
LTM-104-0911	9/15/2011		< 0.0943 J	< 0.0943 J	< 0.0943 J	< 0.0943 J	< 0.0943 J	< 0.0943 J	< 0.0943 J	< 0.0943 J	< 0.0943 J	—
GW2012091801	9/18/2012		< 0.029	< 0.029	< 0.029	< 0.029	< 0.029	< 0.029	< 0.029	< 0.029	< 0.029	—
GW2013092002	9/20/2013		< 0.0057	< 0.0057	< 0.0057	< 0.0057	< 0.0057	< 0.0057	< 0.0057	< 0.0057	< 0.0057	—
LTM-105												
LTM-105-1006	10/19/2006		< 0.103	< 0.103	< 0.103	≤ 1.03	< 0.103	< 0.103	< 1.03	< 0.103	< 1.03	128
LTM-105-0107	1/30/2007		< 0.0962	< 0.0962	< 0.0962	≤ 0.962	< 0.0962	< 0.0962	< 0.962	< 0.0962	< 0.962	< 50
LTM-105-0407	4/26/2007		< 0.00943	< 0.00943	< 0.00943	≤ 0.0943	< 0.00943	< 0.00943	< 0.0943	< 0.00943	< 0.0943	< 50
LTM-105-0707	7/11/2007		< 0.0472	< 0.0472	< 0.0472	≤ 0.472	< 0.0472	< 0.0472	< 0.472	< 0.0472	< 0.472	< 50
LTM-105-1007	10/9/2007		< 0.0952	< 0.0952	< 0.0952	≤ 0.952	< 0.0952	< 0.0952	< 0.952	< 0.0952	0.316 J	< 50
LTM-105-0108	1/21/2008		< 0.0098 J	< 0.0098 J	< 0.0098 J	< 0.098 J	< 0.0098 J	< 0.0098 J	< 0.098 J	< 0.0098 J	< 0.098 J	—
LTM-105-0708	7/10/2008		< 0.00943	< 0.00943	< 0.00943	< 0.0943	< 0.00943	< 0.00943	< 0.0943	< 0.00943	< 0.0943	—
LTM 105 0109	1/29/2009		0.012	< 0.00971	< 0.00971	< 0.0971	< 0.00971	< 0.00971	< 0.0971	< 0.00971	< 0.0971	—
LTM105072909	7/29/2009		0.045	0.05	0.058	0.027	0.019	0.061	0.098	0.022	0.12	—
LTM500072909	7/29/2009	Duplicate	0.044	0.043	0.051	0.025	0.018	0.057	0.096	0.022	0.12	—
LTM-105-0110	1/29/2010		< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	—
LTM-500-0110	1/29/2010	Duplicate	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	—
LTM-105-0911	9/15/2011		< 0.0952 J	< 0.0952 J	< 0.0952 J	< 0.0952 J	< 0.0952 J	< 0.0952 J	< 0.0952 J	< 0.0952 J	< 0.0952 J	—
GW2012091904	9/19/2012		< 0.029	< 0.029	< 0.029	< 0.029	< 0.029	< 0.029	< 0.029	< 0.029	< 0.029	—
GW2013092005	9/20/2013		0.0095 J	< 0.0057	< 0.0057	< 0.0057	0.0059 J	< 0.0057	0.022	< 0.0057	0.024	—

Attachment 14. Long-term Groundwater Monitoring Analytical Results

Chemical Name			Benzo(a) anthracene (µg/L)	Benzo(a) pyrene (µg/L)	Benzo(b) fluoranthene (µg/L)	Benzo(g,h,i) perylene (µg/L)	Benzo(k) fluoranthene (µg/L)	Chrysene (µg/L)	Fluoranthene (µg/L)	Indeno(1,2,3-cd) pyrene (µg/L)	Pyrene (µg/L)	Lead (µg/L)
Action Level			10	3.8	14	0.26	0.55	1.5	14	62	3.8	338
Sample ID	Sample Date	Sample Type										
LTM-106												
LTM-106-1006	10/19/2006		< 0.0102	< 0.0102	< 0.0102	< 0.102	< 0.0102	< 0.0102	< 0.102	< 0.0102	< 0.102	< 1
LTM-206-1006	10/19/2006		< 0.00943	< 0.00943	< 0.00943	< 0.0943	< 0.00943	< 0.00943	< 0.0943	< 0.00943	< 0.0943	< 1
LTM-106-0107	1/30/2007		< 0.01	< 0.01	< 0.01	< 0.1	< 0.01	< 0.01	< 0.1	< 0.01	< 0.1	< 50
LTM-206-0107	1/30/2007	Duplicate	< 0.00962	< 0.00962	< 0.00962	< 0.0962	< 0.00962	< 0.00962	< 0.0962	< 0.00962	< 0.0962	< 50
LTM-106-0407	4/26/2007		< 0.00943	< 0.00943	< 0.00943	< 0.0943	< 0.00943	< 0.00943	< 0.0943	< 0.00943	< 0.0943	< 50
LTM-206-0407	4/26/2007	Duplicate	< 0.00943	< 0.00943	< 0.00943	< 0.0943	< 0.00943	< 0.00943	< 0.0943	< 0.00943	< 0.0943	< 50
LTM-106-0707	7/11/2007		< 0.00962	< 0.00962	< 0.00962	< 0.0962	< 0.00962	< 0.00962	< 0.0962	< 0.00962	< 0.0962	< 50
LTM-206-0707	7/11/2007	Duplicate	< 0.00943	< 0.00943	< 0.00943	< 0.0943	< 0.00943	< 0.00943	< 0.0943	< 0.00943	< 0.0943	< 50
LTM-106-1007	10/9/2007		0.0116	< 0.0098	< 0.0098	< 0.098	< 0.0098	< 0.0098	< 0.098	< 0.0098	0.0507 J	< 50
LTM-206-1007	10/9/2007	Duplicate	0.0129	< 0.00943	< 0.00943	< 0.0943	< 0.00943	0.0117	0.0331 J	< 0.00943	< 0.0943	< 50
LTM-106-0108	1/21/2008		< 0.00943	< 0.00943	< 0.00943	< 0.0943	< 0.00943	0.0111	< 0.0943	< 0.00943	< 0.0943	—
LTM-106-0708	7/10/2008		< 0.00962	< 0.00962	< 0.00962	< 0.0962	< 0.00962	< 0.00962	< 0.0962	< 0.00962	< 0.0962	—
LTM-206-0708	7/10/2008	Duplicate	< 0.00943	< 0.00943	< 0.00943	< 0.0943	< 0.00943	< 0.00943	< 0.0943	< 0.00943	< 0.0943	—
LTM 106 0109	1/29/2009		< 0.00962	< 0.00962	< 0.00962	< 0.0962	< 0.00962	< 0.00962	< 0.0962	< 0.00962	< 0.0962	—
LTM106072909	7/29/2009		0.015	< 0.01	0.014	< 0.0097	< 0.0097	0.014	0.053	< 0.0097	0.051	—
LTM-106-0110	1/29/2010		< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	0.095	—
LTM-106-0911	9/15/2011		< 0.0943 J	< 0.0943 J	< 0.0943 J	< 0.0943 J	< 0.0943 J	< 0.0943 J	< 0.0943 J	< 0.0943 J	< 0.0943 J	—
GW2012091802	9/18/2012		< 0.029	< 0.029	< 0.029	< 0.029	< 0.029	< 0.029	< 0.029	< 0.029	0.037 J	—
GW2013092003	9/20/2013		0.012 J	< 0.0058	0.0067 J	< 0.0058	< 0.0058	0.01 J	0.044	< 0.0058	0.047	—
GW2013092004	9/20/2013	Duplicate	0.0073 J	< 0.0057	< 0.0057	< 0.0057	< 0.0057	0.0064 J	0.031	< 0.0057	0.038	—
LTM-107												
LTM-107-1006	10/19/2006		0.114	< 0.01	0.0385	< 0.1	0.0569	0.124	0.903	0.0685	1.13	< 1
LTM-107-0107	1/30/2007		0.102	0.05	0.0256	< 0.0943	0.0451	0.107	0.836	0.0216	1.23	< 50
LTM-107-0407	4/26/2007		0.103	0.0828	0.0532	< 0.0943	0.0664	0.119	0.903	0.0288	1.05	< 50
LTM-107-0707	7/11/2007		0.183	0.345	0.105	< 0.962	< 0.0962	0.19	1.09	0.137	1.21	< 50
LTM-107-1007	10/9/2007		0.522	0.46	0.236	0.248 J	0.419	0.577	1.57	0.213	2.64	< 50
LTM-107-0108	1/21/2008		0.162	0.108	0.0537	< 0.472	0.0805	0.193	0.947	< 0.0472	0.784	—
LTM-107-0708	7/10/2008		0.144	0.103	0.0594	< 0.0943	0.0877	0.131	1.01	0.0508	0.764	—
LTM 107 0109	1/29/2009		0.0608	0.0364	0.0178	< 0.0943	0.0304	0.0665	0.653	0.0136	0.86	—
LTM107072909	7/29/2009		0.65	0.61	0.44	**0.32**	0.22	0.73	1.4	0.26	1.7	—
LTM-107-0110	1/28/2010		0.14	0.11	< 0.095	< 0.095	< 0.095	0.13	0.51	< 0.095	0.6	—
LTM-107-0911	9/15/2011		< 0.0952 J	< 0.0952 J	< 0.0952 J	< 0.0952 J	< 0.0952 J	< 0.0952 J	0.603 J	< 0.0952 J	0.681 J	—
GW2012091902	9/19/2012		0.19	0.12 J	0.12	0.071 J	0.052 J	0.21	0.88	0.085 J	1.1	—
GW2012091903	9/19/2012	Duplicate	0.043 J	< 0.029	< 0.029	< 0.029	< 0.029	0.042 J	0.56	< 0.029	0.64	—
GW2013091902	9/19/2013		0.086	0.051	0.037	0.02	0.025	0.086	0.83	0.024	0.89	—
FieldQC												
FB-0707	7/11/2007	FB	< 0.00952	< 0.00952	< 0.00952	< 0.0952	< 0.00952	< 0.00952	< 0.0952	< 0.00952	< 0.0952	< 50
FB-0108	1/21/2008	FB	< 0.00943 J	< 0.00943 J	< 0.00943 J	< 0.0943 J	< 0.00943 J	< 0.00943 J	< 0.0943 J	< 0.00943 J	< 0.0943 J	—
FIELD BLANK_0109	1/29/2009	FB	< 0.0099	< 0.0099	< 0.0099	< 0.099	< 0.0099	< 0.0099	< 0.099	< 0.0099	< 0.099	—
Field Blank072909	7/29/2009	FB	< 0.0098	< 0.02	< 0.0098	< 0.0098	< 0.0098	< 0.0098	< 0.0098	< 0.0098	< 0.0098	—
Rinsate Blank_0110	1/29/2010	RB	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	—
LTM-RB-0911	9/15/2011	RB	< 0.1 J	< 0.1 J	< 0.1 J	< 0.1 J	< 0.1 J	< 0.1 J	< 0.1 J	< 0.1 J	< 0.1 J	—
ERB2012091901	9/19/2012	RB	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0	—
ERB2013092001	9/20/2013	RB	< 0.0058	< 0.0058	< 0.0058	< 0.0058	< 0.0058	< 0.0058	< 0.0058	< 0.0058	< 0.0058	—

Notes:

All analytes are totals.

Underline = detection limit exceeds trigger level

Bold = result exceeds trigger level

< = not detected at detection limit shown

— = not sampled

COC = contaminant of concern

FB = field blank

J = estimated concentration

NR = not reported

RB = rinsate blank

Attachment 15

Calculation of Benzo[a]pyrene TEQ from cPAH Concentrations in Groundwater Samples

Hoyt Street Railyard

Location ID:		**LTM-101 thru LTM-107**		
cPAH Analyte	**TEF**	**Sample Concentration (ug/L)**		**BaP TEQ (ug/L)**
Benz[a]anthracene	0.1	0.65		0.065
Benzo[a]pyrene	1	0.61		0.61
Benzo[b]fluoranthene	0.1	0.44		0.044
Benzo[k]fluoranthene	0.01	0.42		0.00419
Chrysene	0.001	0.73		0.00073
Dibenz[a,h]anthracene	1	0.10	U	0.1
Indeno[1,2,3-cd]pyrene	0.1	0.26		0.026
Benzo[a]pyrene TEQ				**0.850**

Notes:

TEF = toxic equivalency factor (relative to benzo[a]pyrene)

TEQ = toxic equivalency (relative to benzo[a]pyrene)

BaP = benzo[a]pyrene

U = Undetected (method detection limit shown)

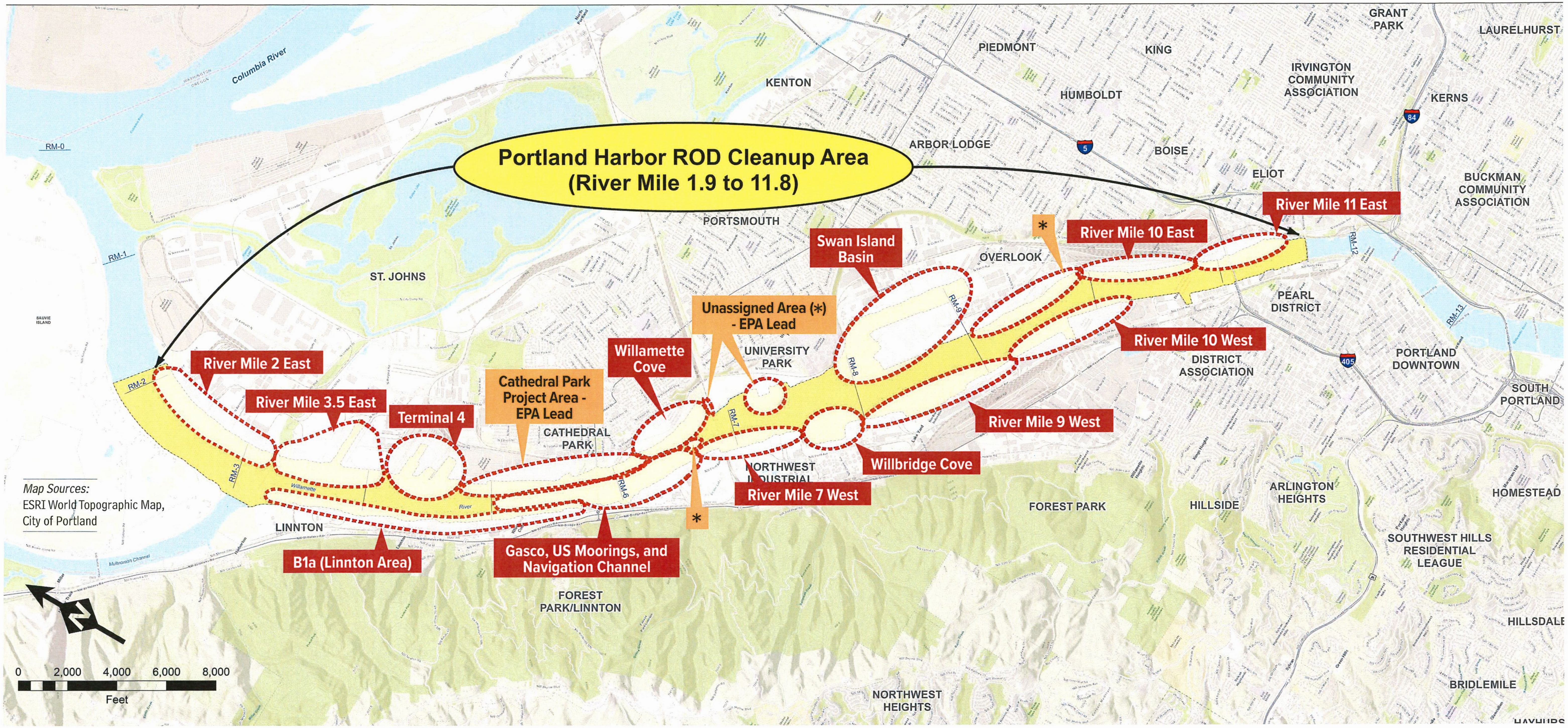
PORTLAND HARBOR SUPERFUND SITE UPDATES

SEPTEMBER 2025

OVERVIEW The in-river portion of the Portland Harbor Superfund Site spans about 10 miles of the Lower Willamette River in Portland, OR. EPA released a final cleanup plan (also called the Record of Decision or ROD) in January 2017 to address contamination in the sediment, surface water, and groundwater that poses an unacceptable risk to human health and the environment. All of the acres designated for active in-water remediation at the Site are now in remedial design. This document provides a general project update.

EPA United States Environmental Protection Agency

Attachment 16



Red outlines signify that working parties are conducting remedial design with EPA oversight. For unassigned areas and the Cathedral Park Project Area (labeled in orange), EPA is implementing full remedial design. *Please see reverse page for more information.*

This shaded area indicates areas where only monitored natural recovery is planned to occur, per the Record of Decision.

QUESTIONS?

Please visit EPA's Portland Harbor website at www.epa.gov/superfund/portland-harbor

Contact Laura Knudsen (EPA Community Involvement Coordinator) at knudsen.laura@epa.gov or **206-553-1838**.

WHAT ABOUT SOURCE CONTROL?

The term source control refers to controlling sources of contamination that are entering the Portland Harbor Superfund Site from upriver and lands along the river. **The Oregon Department of Environmental Quality (DEQ)** oversees source control and works closely with EPA. To date, DEQ has completed work on 119 of 175 sites identified as requiring source control within the study area and is currently working on 49 other sites. Visit DEQ's Portland Harbor Upland Source Control website here: **https://www.oregon.gov/deq/Hazards-and-Cleanup/CleanupSites/Pages/Portland-Harbor-Strategy.aspx**.