SECOND PERIODIC REVIEW REPORT
FINAL

Turnbull Landfill
Facility Site ID#: 51658363
Cleanup Site ID#: 4677

12001 NE Fourth Plain Boulevard
Orchards, WA 98682

TOXICS CLEANUP PROGRAM
Southwest Regional Office

February 2019

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1.0 INTRODUCTION

This document is a review by the Washington State Department of Ecology (Ecology) of post-cleanup conditions and monitoring data to assure that human health and the environment are being protected at the former Turnbull Landfill (Site). Cleanup at this Site was implemented under the Model Toxics Control Act (MTCA) regulations, Chapter 173-340 Washington Administrative Code (WAC). The first periodic review was conducted in January 2014. This periodic review evaluates the period from February 2014 through January 2019.

Cleanup activities at this Site were conducted under the Voluntary Cleanup Program (VCP). The cleanup actions resulted in municipal landfill solid waste and concentrations of dissolved manganese in groundwater exceeding MTCA Method B cleanup levels remaining at the Site. The MTCA Method B cleanup levels for groundwater are established under WAC 173-340-720(4). WAC 173-340-420 (2) requires that Ecology conduct a periodic review of a Site every five years under the following conditions:

- Whenever the department conducts a cleanup action.
- Whenever the department approves a cleanup action under an order, agreed order, or consent decree.
- Or, as resources permit, whenever the department issues a no further action (NFA) opinion.
- And one of the following conditions exists:

    (a) Institutional controls or financial assurance are required as part of the cleanup.
    (b) Where the cleanup level is based on a practical quantitation limit.
    (c) Where, in the department's judgment, modifications to the default equations or assumptions using site-specific information would significantly increase the concentration of hazardous substances remaining at the site after cleanup or the uncertainty in the ecological evaluation or the reliability of the cleanup action is such that additional review is necessary to assure long-term protection of human health and the environment.

When evaluating whether human health and the environment are being protected, the factors the department shall consider include [WAC 173-340-420(4)]:

1) The effectiveness of ongoing or completed cleanup actions, including the effectiveness of engineered controls and institutional controls in limiting exposure to hazardous substances remaining at the Site.
2) New scientific information for individual hazardous substances of mixtures present at the Site.
3) New applicable state and federal laws for hazardous substances present at the Site.
4) Current and projected Site use.
5) Availability and practicability of higher preference technologies.
6) The availability of improved analytical techniques to evaluate compliance with cleanup levels.

The department shall publish a notice of all periodic reviews in the Site Register and provide an opportunity for public comment.

2.0 SUMMARY OF SITE CONDITIONS

2.1 Site History

The former Turnbull Landfill property is located at 12001 NE Fourth Plain Boulevard in Orchards (Clark County), Washington. The Site is approximately 6.5 acres and is located at the southeast corner of the intersection of State Route 500 and NE Fourth Plain Boulevard. The Site is bounded by NE Fourth Plain Boulevard to the north, commercial and light industrial facilities to the south, State Route 500 to the west, and NE 121st Avenue and an auto supply and repair shop to the east. A vicinity map is available as Appendix 6.1 and a Site plan is available as Appendix 6.2.

The subject Site was used as a gravel quarry from the early 1900s to the mid-1960s. From approximately 1970 to 1974, the Site was used as a solid waste disposal facility. The Site reportedly received municipal solid waste, construction debris, and demolition debris. In 1973, the Southwest Washington Health District (SWHD) revoked the solid waste disposal permit. Disposal at the landfill reportedly continued through 1974. From 1974 to mid-1998, the Site was apparently vacant and essentially unused.

In mid-1998, the Site was cleared of brush in preparation for the early stages of development. The Site was then filled and compacted with granular fill material. The resulting surface was graded to reduce infiltration of stormwater. These Site activities were completed in September 1998.

2.2 Site Investigations

2.2.1 1983 - Northwest Geotechnical Consultants, Inc.

Northwest Geotechnical Consultants, Inc. (NGC) completed a geotechnical investigation of the Site on behalf of Pacific Northwest Life in May 1983. The investigation included 18 test pit excavations throughout the Site to depths between 15 and 25 feet below ground surface (bgs). The test pit investigation revealed the presence of uncontrolled fill consisting primarily of refuse (including household waste, scrap metal, concrete debris, lumber, and appliances) to depths of up to 22 feet bgs. Groundwater was encountered at depths of between 15 and 20 feet bgs. NGC recommended evaluating the economic feasibility of removing the uncontrolled fill and evaluating groundwater beneath the Site for potential impacts. The test pit locations and a cross section showing the landfill subsurface/refuse is available as Appendix 6.3.

2.2.2 1991 – Northwest Envirocon, Inc.

Northwest Envirocon, Inc. (NEI) completed an environmental investigation of the Site in March 1991. The environmental investigation included advancing four soil borings at the Site to depths of up to 15.0 feet bgs. Three soil samples collected from one of the soil borings advanced near the western boundary of the Site were submitted to an analytical laboratory for chemical analysis of lead and total petroleum hydrocarbons (TPHs). The soil samples were collected from depths between 3.0 and 15.0 feet bgs. Lead was detected in each soil sample analyzed at concentrations between 3.5 and 79 milligrams per kilogram (mg/Kg). TPH was detected in each soil sample analyzed at concentrations between 12 and 770 mg/Kg. Two groundwater samples collected

from two of the soil borings were submitted to an analytical laboratory for analysis of total dissolved solids (TDS) and total organic carbon (TOC). TDS were detected at concentrations between 322 and 1,070 mg/Kg. TOC was detected at concentrations between 1.7 and 19.2 mg/Kg. According to NEI, the detected concentrations of TDS and TOC in groundwater "warranted further analysis." The NEI report also indicated that the volume of buried refuse at the Site was considerably less than the volume of refuse indicated by NGC in 1983. Soil boring locations and soil sample results are available as Appendix 6.4.

2.2.3 1991 – Northwest Envirocon, Inc.

NEI completed a test pit investigation in June 1991 to verify the volume of refuse present at the Site. The investigation included 20 test pit excavations to depths between 5.0 and 13.0 feet bgs. Each test pit was reportedly excavated until visual indications of refuse were no longer present. NEI concluded, based on the results of the June 1991 investigation, that the volume of refuse present at the landfill was significantly less than previous volume estimates. Test pit locations and approximate depth of garbage present at the landfill is included as Appendix 6.5.

2.2.4 1992 - EMCON Northwest, Inc.

In 1992, EMCON Northwest, Inc. installed 27 soil gas probes and three groundwater monitoring wells at the Site. The soil gas probes were installed to determine if landfill gases were present in the upper 4 feet of soil along the Site perimeter. Landfill gases were not detected in any of the 27 soil gas probes installed by EMCON Northwest along the perimeter of the Site.

In May 1992, three groundwater monitoring wells (MW-1 through MW-3) were installed on the northern and western portions of the property, in the general area of the former landfill. The purpose of the groundwater monitoring wells was to evaluate potential groundwater contamination beneath the landfill. Groundwater samples collected from each of the monitoring wells were analyzed for select dissolved metals, conventional chemistry parameters, and common cat-ions and anions. The analytical results were compared to primary and secondary drinking water standards. Dissolved manganese was detected at concentrations up to 3.15 milligrams per liter (mg/L), greater than the MTCA Method B cleanup level of 2.2 mg/L. Total coliform bacteria was detected in each of the groundwater samples analyzed at concentrations greater than primary drinking water standards. No other compounds were detected at concentrations greater than primary or secondary drinking water standards. Approximate locations of soil probes and the groundwater monitoring well locations and soil gas and groundwater sample results are available as Appendix 6.6.

2.2.5 1997 – Stockton and Associates, Inc.

Stockton and Associates, Inc. conducted a subsurface investigation of the Site in November 1997 that included collecting grab groundwater samples from six direct-push soil borings advanced near the northeastern comer of the property. The groundwater samples were analyzed for total metals, polycyclic aromatic hydrocarbons (PAHs), and volatile organic compounds (VOCs). Selected metals were reportedly detected in some of the groundwater samples at concentrations above MTCA cleanup levels; however, PAHs and VOCs were not detected. Based on the information generated in the Stockton and Associates study and other previous studies,

approximately 39,000 cubic feet of solid waste remains on Site. Soil boring locations are available as Appendix 6.7.

2.2.6 1998 - PNG Environmental

PNG Environmental (PNG) installed two additional groundwater monitoring wells (MW-3A and MW-4) and initiated quarterly groundwater monitoring activities on December 10, 1998. The results of quarterly groundwater monitoring indicated that, with the exception of elevated levels of manganese in groundwater in the vicinity of well MW-1 (at concentrations up to 8.95 mg/L), contaminants were not present in groundwater samples at concentrations greater than MTCA cleanup levels. The groundwater monitoring well locations, groundwater flow direction and groundwater sample results are available as Appendix 6.8.

2.2.7 2000 – PNG Environmental

PNG completed an investigation of dissolved manganese in groundwater in the area of MW-1. Groundwater samples were collected on February 9, 2000 from monitoring well (MW-1) and five direct-push borings. The groundwater samples were analyzed for dissolved manganese by EPA 6010/7000 series. The following results were obtained:

- Dissolved manganese was detected in each sample ranging between 0.095 to 9.07 mg/L. The highest concentrations were found in the samples collected in close proximity to MW-1 (GP-1 through GP-3 and MW-1), while the lowest concentrations were found near the property boundaries and downgradient of monitoring well MW-1 (GP-4 and GP-6).

- Water level data indicates that groundwater flow is generally towards the east with a slight component to the southeast. A flow direction generally to the east is consistent when compared to historic data from prior quarterly sampling events.

MW-1 exhibited a manganese concentration of approximately 2 mg/L, which is consistent with the historic concentration range at the well of approximately 2.5 to 9 mg/L. Manganese has been undetected at MW-4, which is located further to the southeast relative to MW-1.

Two samples (GP-4 and GP-6) were collected in the downgradient direction from the area of MW-1, GP-1, and GP-2. Samples from GP-4 and GP-6 indicated a dramatic decrease in the concentration of manganese (in the range of one to two orders of magnitude) as groundwater moves downgradient. Dissolved manganese concentrations at GP-4 and GP-6 were approximately 0.1 and 0.2 mg/L, respectively, well below the MTCA Method B cleanup level for manganese of 2.2 mg/L. Soil boring locations and soil sample results are available as Appendix 6.9.

Data from this sampling event is available in Table 1 below.

Table 1

Former Turnbull Landfill
Groundwater Dissolved Metals Results
(mg/L-ppm)

Location #	Date Sampled	Iron	Manganese	Zinc
MW-1	12/10/98	0.041	3.043	0.010*U*
	3/16/99	0.048	2.520	0.010*U*
	6/8/99	0.02*U*	4.790	0.010*U*
	9/14/99	0.044	8.950	0.010*U*
	2/9/00	*NA*	2.010	*NA*
MW-2	12/10/98	0.022	0.016	0.010*U*
	3/16/99	0.02*U*	0.012	0.010*U*
	6/8/99	0.02*U*	0.005*U*	0.010*U*
	9/14/99	0.02*U*	0.011	0.010*U*
MW-3R	12/10/98	0.026	0.005*U*	0.010*U*
	3/16/99	0.053	0.005*U*	0.010*U*
	6/8/99	0.02*U*	0.005	0.010*U*
	9/14/99	0.041	0.014	0.010*U*
MW-4	12/11/98	0.034	0.005*U*	0.010*U*
	3/16/99	0.033	0.005*U*	0.010*U*
	6/8/99	0.02*U*	0.005*U*	0.010*U*
	9/14/99	0.031	0.005*U*	0.010*U*
GP-1	2/9/00	*NA*	7.17	*NA*
GP-2	2/9/00	*NA*	9.07	*NA*
GP-3	2/9/00	*NA*	5.26	*NA*
GP-4	2/9/00	*NA*	0.218	*NA*
GP-6	2/9/00	*NA*	0.095	*NA*

U = Not detected at method reporting limit shown
NA = Not analyzed

2.2.8 2006 - GeoDesign, Inc.

On August 9 and 10, 2006, a representative from GeoDesign observed the completion of 11 test pits at the Site to depths of between 9.0 and 20.5 feet bgs. The protective cap material consisted of a 12- to 36-inch-thick layer of dense, brown sand with some gravel underlain by black, silty sand with some gravel to depths between 3 and 8 feet bgs. From below the cap to between 8 to 18 feet bgs, the sand contained variable amounts of refuse (e.g., concrete, lumber, and domestic

refuse). In general, the refuse was highly degraded and densely compacted. Native sand and gravel deposits were present below the refuse. Test pit locations are available as Appendix 6.10.

2.3 Remedial Actions

Sometime in mid-1998, surficial landfill refuse and debris were removed from the Site and 3 to 12 feet of clean, compacted construction-grade fill was placed over the remaining debris. The fill was intended to limit the infiltration of storm water through buried waste and into the groundwater. Roadways and associated utilities were installed at this time. Monitoring well MW-3 was reportedly damaged during Site grading and road construction activities, and was replaced with MW-3a. Pre-graded and post-graded figures are included as Appendix 6.11.

2.4 Cleanup Levels

WAC 173-340-704 states that MTCA Method A may be used to establish cleanup levels at sites that have few hazardous substances, are undergoing a routine cleanup action, and where numerical standards are available for all indicator hazardous substances in the media for which the Method A cleanup level is being used.

MTCA Method A cleanup levels for unrestricted land use were determined to be appropriate for this Site. The cleanup actions conducted at the Site were determined to be 'routine', few hazardous substances were found at the Site, and numerical standards were available in the MTCA Method A table for each hazardous substance except manganese.

A MTCA Method A standard is not available for manganese, the primary contaminant of concern at the Site. The MTCA Method B standard formula value for manganese in groundwater is 2.2 mg/L.

2.5 Restrictive Covenant

It was determined that the Site would be eligible for a NFA determination if institutional controls were implemented in the form of a Restrictive Covenant (RC). An RC would serve to notify future property owners of municipal solid waste remaining at the Site and prevent disturbance and exposure of soils potentially containing hazardous materials that remain contained at the Site. An RC was recorded for the Site in August 2000, and a second RC was recorded in September 2000. The second Covenant was recorded to clarify ownership of the property, and it imposes the following limitations:

Section 1:

a) No groundwater may be taken for any use from the Property.
b) A portion of the Property contains solid waste beneath a soil cover. Solid waste is located on Parcel 1 in the areas depicted on Exhibit B, attached hereto. These areas have been capped with 3 to 12 feet of clean soil. The Owner shall not alter, modify, or remove the existing structure(s) or the soil cover in any manner that may result in the release or exposure to the environment of the contained refuse or create a new exposure pathway without prior written approval from Ecology.

c) No new structures shall be constructed on areas of the Property where solid wastes have been deposited without the written approval of Ecology and approval by the local agency(s) of jurisdiction.
d) Any activity on the Property that may result in the release or exposure to the environment of the solid waste that was contained as part of the Remedial Action, or create a new exposure pathway, is prohibited without first obtaining written approval from Ecology. Absent obtaining prior written approval from Ecology, some examples of activities that are prohibited in the capped areas include: drilling, digging, placement of any objects or use of any equipment which deforms or stresses the surface beyond its load bearing capability, piercing the surface with a rod, spike or similar item, bulldozing or earthwork.

Section 2: Any activity on the Property that may interfere with the integrity of the Remedial Action and continued protection of human health and the environment is prohibited.

Section 3: Any activity on the Property that may result in the release or exposure to the environment of a hazardous substance that remains on the Property as part of the Remedial Action, or create a new exposure pathway, is prohibited without prior written approval from Ecology.

Section 4: The Owner of the property must give thirty (30) day advance written notice to Ecology of the Owner's intent to convey any interest in the Property. No conveyance of title, easement, lease, or other interest in the Property shall be consummated by the Owner without adequate and complete provision for continued monitoring, operation, and maintenance of the Remedial Action.

Section 5: The Owner must restrict leases to uses and activities consistent with the RC and notify all lessees of the restrictions on the use of the Property.

Section 6: The Owner must notify and obtain approval from Ecology prior to any use of the Property that is inconsistent with the terms of this RC. Ecology may approve any inconsistent use only after public notice and comment.

Section 7: The Owner shall allow authorized representatives of Ecology the right to enter the Property at reasonable times for the purpose of evaluating the Remedial Action; to take samples, to inspect remedial actions conducted at the property, and or inspect records that are related to the Remedial Action.

Section 8: The Owner of the Property reserves the right under WAC 173-340-440 to record an instrument that provides that this RC shall no longer limit use of the Property or be of any further force or effect. However, such an instrument may be recorded only if Ecology, after public notice and opportunity for comment, concurs.

The RC is available as Appendix 6.15.

3.0 PERIODIC REVIEW

3.1 Effectiveness of Completed Cleanup Actions

Ecology conducted a Site visit on December 28, 2018. As discussed in section 3.1.3, part of the Site has been developed which includes a restaurant and associated parking lot. The other portion of the Site is vacant, unpaved, and roughly graded. The Site contains a paved access road, stormwater drainage, and a newly constructed Golden Corral Restaurant and associated parking. Unpaved portions of the Site remain roughly graded. A photo log is available as Appendix 6.16.

The property owner recorded a RC for the Site in 2000, and it remains active. This RC prohibits activities that will result in the release of contaminants contained as part of the cleanup without approval from Ecology.

3.1.1 Groundwater

Following an NFA request in 1998, the proposed property developer reached an agreement with Ecology and the SWHD to conduct four quarterly groundwater sampling events to demonstrate stability in groundwater chemistry at the Site. The agreement included the understanding that Hawkins would again request an NFA at the conclusion of the fourth sampling event. Sampling continued on a quarterly basis through the fall of 1999.

The final sampling event was completed in September 1999. It was determined that an additional limited investigation was necessary to fully characterize manganese contamination in groundwater. The purpose of this investigation was to determine the concentrations of dissolved manganese in groundwater near MW-1, where manganese concentrations remained above MTCA cleanup levels, and to evaluate the potential for manganese to be migrating off Site. This investigation by PNG included collecting a sample from MW-1 and collecting groundwater samples from five direct-push borings in the vicinity of MW-1. This investigation was completed in February 2000, and demonstrated that manganese was not migrating off Site above MTCA levels.

It was determined that groundwater contamination no longer posed a threat to human health and the environment for the following reasons:

- Arsenic, chromium, and lead were not detected in Site monitoring wells.
- No volatile organic compounds were detected in Site monitoring wells.
- Traditional indicators of landfill impacts to groundwater have not been detected, or have only been detected sporadically.
- Manganese was detected at 2.0 mg/L in MW-1, and at concentrations up to 9.07 mg/L in other borings. The two downgradient borings contained manganese at concentrations below 0.2 mg/L and demonstrate that manganese is not migrating off Site at, or above, the MTCA Method B cleanup level of 2.2 mg/L.

- Beneficial use of shallow groundwater within 0.5 miles of the Site is limited due to availability of city water. Based on the well inventory, no use of groundwater from depths of less than 50 feet has been identified.
- There are no nearby surface water bodies where groundwater discharges.
- Pre-development filling and grading activities limit the infiltration of stormwater through buried waste and into groundwater.
- Future development of the property will essentially eliminate infiltration to groundwater. This will be accomplished through capping by construction of buildings, parking areas, and stormwater controls. Site development plans are detailed in the following section.

3.1.2 Future Site Remedial Actions and Development

In February 2007, GeoDesign submitted a Summary Report to Ecology. The purpose of the Summary Report was to seek an opinion from Ecology as to the adequacy of remedial and construction activities associated with future Site development. The Summary Report included the following proposed development plans:

- Dynamic Deep Compaction. Dynamic deep compaction would be conducted by dropping a 10-ton weight from a height of 50 feet throughout the footprint area of each proposed building. The dynamic deep compaction would increase the density of the existing cap and minimize surface water infiltration into groundwater.
- Grading. Following dynamic deep compaction, extensive grading and surface compaction would be conducted to level the Site and further increase the density of the cap material.
- Cement Amendment. After the fill materials had been graded and compacted, the upper 12 inches of the building areas would be amended with 6 percent cement and compacted in place.
- Soil Gas Barriers. Although methane was not detected during the soil gas survey completed in 1992, the proposed development design would incorporate, as appropriate, impermeable membranes or other engineering controls for methane mitigation.
- Excavation Requirements. While significant excavation of the existing cap material or buried debris is not anticipated, some trenching may be required during installation of planned utilities. If excavation of the existing cap material or buried debris is required during Site development, the existing cap material present in the excavation area will be segregated and stockpiled so that it can be replaced following completion of the excavation. Refuse and debris removed from the excavation will be transported off Site for disposal at a permitted solid waste landfill.
- Final Review. Final construction documents are not yet available. However, based on a review of the conceptual Site plans provided by Apex, it appears that at least 85 percent of the Site will be covered with structures, paved parking areas, or paved sidewalk/common areas when development is complete. When finalized, construction plans will be forwarded to Ecology for review and approval.

Ecology reviewed this proposed work plan and issued an opinion on February 28, 2007 stating that the proposed remedial action is likely to be sufficient to meet the specific substantive requirements contained in MTCA.

However, subsequently the property ownership has been changed. Based on September 25, 2013 meeting with the current property owner, it was decided that any deviations from the above approved property development plans must be reviewed and approved by Ecology prior to starting of the construction. Property Development Conceptual Plan is available as Appendix 6.12.

3.1.3 2016 - GeoDesign Property Development Proposal

In 2016, on behalf of the property owner GeoDesign submitted a proposal to develop approximately 2.55 acres (out of a total of 6.5 acres of the Site) on the western portion of the landfill. The proposed development included the construction of an approximately 11,000 square-foot one-story building (which will be used as a restaurant), associated infrastructures, utilities and parking lot. Ecology reviewed and approved this alternate Site Development Plan/Engineering Design Report (SDP/EDR) waiving some of the requirements outlined above in section 3.1.2 (Dynamic Deep Compaction, Cement Amendment, and Excavation) that were required to address any potential ground/structure settlement issues for the Site Development. The SDP/EDR addresses the settlement issues by supporting the structure on approximately 352 engineered aggregate piers spaced approximately 8 feet on-center and the parking lot was paved with asphalt. In addition, a methane mitigation system design was incorporated into the SDP/EDR, which included a sub-slab passive venting system and a low-permeable membrane (soil-gas barrier). To support the design of the methane mitigation system, GeoDesign completed a methane investigation consisting of the installation of 11 soil-gas sampling points. Five soil-gas sampling points were located within the area of the proposed building footprint and six soil-gas sampling points located within the area of the proposed parking lot. Locations are shown on Figure 2 in Appendix 6.14. The soil-gas sampling points were allowed to stabilize for a minimum of 24 hours. Peak methane and stabilized methane concentrations were measured and recorded. In addition, oxygen, carbon dioxide, balance gases (nitrogen), and pressure were measured and recorded. Soil gas data are summarized in Table 1 in Appendix 6.14. Within the proposed building footprint, detected methane concentrations ranged between 0.7 and 1.7 percent by volume (ppv). Pressure readings ranged from -0.05 to 0.00 inches of water (iow). In the proposed parking lot area, detected methane concentrations ranged between 0.1 and 3.4 ppv. Pressure readings ranged from -0.65 to 0.00 iow.

The sub-slab passive venting system consists of a network of perforated pipes set within a gravel conveyance layer. The perforated pipes are connected to four 3-inch-diameter vent risers fitted with wind driven turbine ventilators to allow gases to passively vent from underneath the building to the atmosphere. In the event the sub-slab passive venting requires activation, the in-line fans installed on the vent risers actively ventilate the sub-slab venting system. The low-permeable membrane consists of a 60-mil spray-applied membrane placed between the concrete floor slab and sub-slab passive venting system. The property development, engineered aggregate piers, and methane mitigation system/sub-slab passive venting system plans are available as Appendix 6.13.

Since the manganese concentration in groundwater monitoring well MW-1 (2.0 mg/L) was below the MTCA Method B cleanup level of 2.2 mg/L and manganese was not detected in any

other monitoring wells, groundwater monitoring was not required at the Site. Therefore, prior to the property development, three ground water monitoring wells (MW-1, MW-2, and MW-4) were abandoned in place as per the requirements of WAC 173-160 and the fourth monitoring well (MW-3R) could not be located.

3.2 New Scientific Information for Individual Hazardous Substances for Mixtures Present at the Site

Cleanup levels at the Site were based on regulatory standards rather than calculated risk for chemicals and/or media. These standards were sufficient to be protective of Site-specific conditions.

3.3 New Applicable State and Federal Laws for Hazardous Substances Present at the Site

MTCA Method B cleanup levels for manganese have not changed since the NFA determination was issued for the Site in 2000. Cleanup levels for other contaminants of concern may have changed in the 2001 edition of MTCA; however, none of the other contaminants were detected in the groundwater. In addition, initial cleanup at the Site was governed by Chapter 173-340 WAC (1996 ed.). Current WAC 173-340-702(12) (c) provides that,

"A release cleaned up under the cleanup levels determined in (a) or (b) of this subsection shall not be subject to further cleanup action due solely to subsequent amendments to the provision in this chapter on cleanup levels, unless the department determines, on a case-by-case basis, that the previous cleanup action is no longer sufficiently protective of human health and the environment."

Cleanup levels applicable at the time the NFA determination was issued in 2000 were used to determine whether the remedy remains protective of human health and environment.

3.4 Current and Projected Site Use

The property owner still projects commercial development for the Site. Remedial actions associated with future development are described Section 3.1.2. Projected Site uses are not expected to pose a threat to human health or the environment.

3.5 Availability and Practicability of Higher Preference Technologies

The remedy implemented included containment of hazardous substances and it continues to be protective of human health and the environment. While higher preference cleanup technologies may be available, they are still not practicable at this Site.

3.6 Availability of Improved Analytical Techniques to Evaluate Compliance with Cleanup Levels

The analytical methods used at the time of the remedial actions were capable of detection below cleanup levels for contaminants of concern at the Site. The presence of improved analytical techniques would not affect decisions or recommendations made for the Site.

4.0 CONCLUSIONS

- The cleanup actions completed at the Site appear to be protective of human health.

- Manganese in groundwater at concentrations above MTCA Method B cleanup levels and municipal solid waste remain at the Site; however, under WAC 173-340-740(6) (d), the cleanup action is determined to comply with cleanup standards, since the long-term integrity of the containment system is ensured and the requirements for containment technologies in WAC 173-340-360(8) have been met.

- The groundwater is not being used for drinking purposes in the area since the availability of city water drinking water supply.

- The RC for the property is in place and will be effective in protecting public health from exposure to hazardous substances and protecting the integrity of the cleanup action.

Based on the periodic review, Ecology has determined that the remedial actions conducted at the Site continue to be protective of human health and the environment. The requirements of the RC are being satisfactorily met. No additional remedial actions are required at the Site at this time. It is the property owner's responsibility to continue to inspect the Site to assure that the integrity of the surface cover is maintained.

4.1 Next Review

The next review for the Site will be scheduled five years from the date of this periodic review. In the event that additional cleanup actions or institutional controls are required, the next periodic review will be scheduled five years from the completion of those activities.

5.0 REFERENCES

GeoDesign, Inc. Engineering Design Report, Proposed Development-Former Turnbull Landfill, Southeast of SR 500 and NE Fourth Plain Boulevard, Vancouver, Washington. December 19, 2016.

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GeoDesign, Inc. Summary Report, Turnbull Center, SR 500 and NE Fourth Plain Boulevard, Vancouver, Washington. February 28, 2007.

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Department of Ecology. No Further Action Determination Letter. November 4, 2003.

Saltbush Environmental Services, Inc. Phase II Environmental Site Assessment. July 3, 2002.

PNG Environmental, Inc. Dissolved Manganese Evaluation report, Former Turnbull Landfill Property. February 24, 2000.

PNG Environmental, Inc. Turnbull Landfill NFA Request, Former Turnbull Landfill, Orchards, Washington. April 19, 2000.

PNG Environmental, Inc. Fourth Quarter Groundwater Monitoring Data Transmittal Report, Former Turnbull Landfill, Vancouver, Washington. November 5, 1999.

Stockton & Associates, Inc. Independent Remedial Action Report, Turnbull Landfill Site, Orchard, Washington. January 1998.

EMCON Northwest, Inc. Phase I Site Assessment Report, Former Turnbull Landfill Site, Orchard, Washington. December 1, 1992.

Northwest Envirocon, Inc. Phase I Geotechnical Investigation Report, Turnbull Landfill. July 2, 1991.

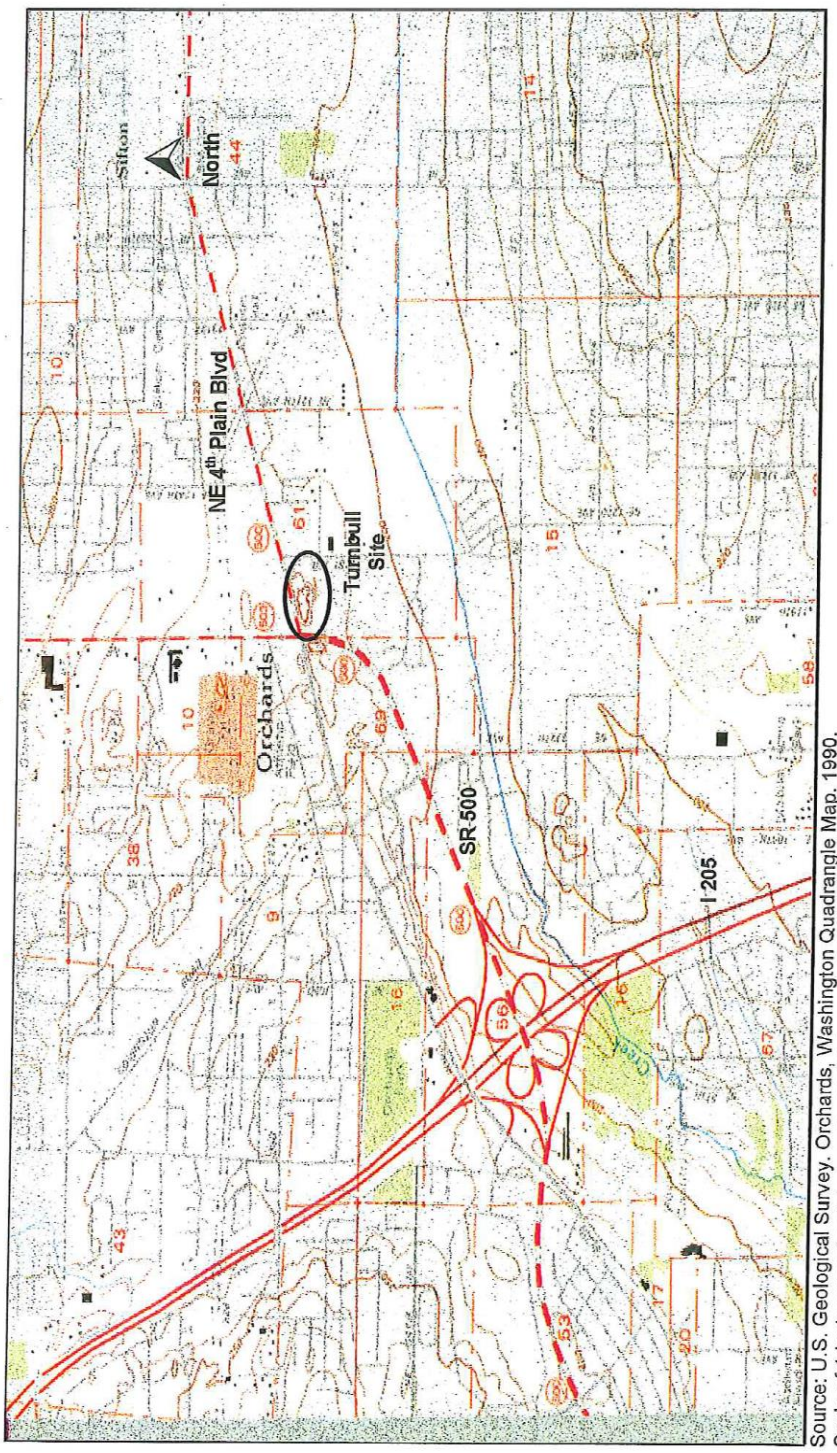
Northwest Envirocon, Inc. Remedial Investigation Report, Analysis of Remediation Options and Issues for the Turnbull Landfill Site. March 1, 1991.

Northwest Envirocon, Inc. Geotechnical Investigation, 6.3 Acre Commercial Property, SR 500 Highway and NE 4th Plain Road, Vancouver, Washington. May 25, 1983.

Department of Ecology. Site Visit. December 28, 2018.

6.0 APPENDICES

6.1 Vicinity Map



Source: U.S. Geological Survey. Orchards, Washington Quadrangle Map. 1990.
Scale of 1 inch approximately equal to 2,000 feet.

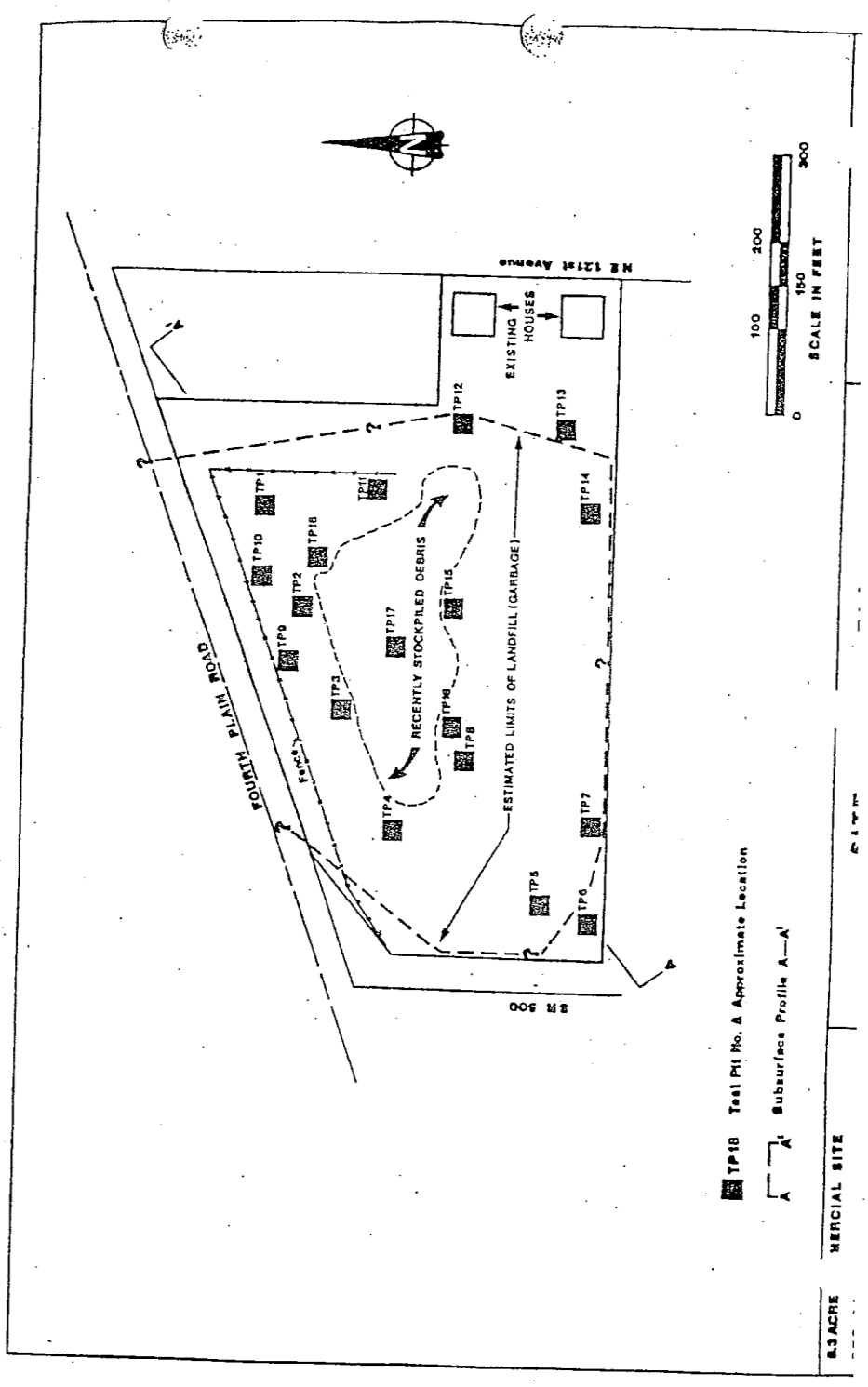
Figure 1
Site Vicinity Map
Turnbull Site, Orchards, Washington

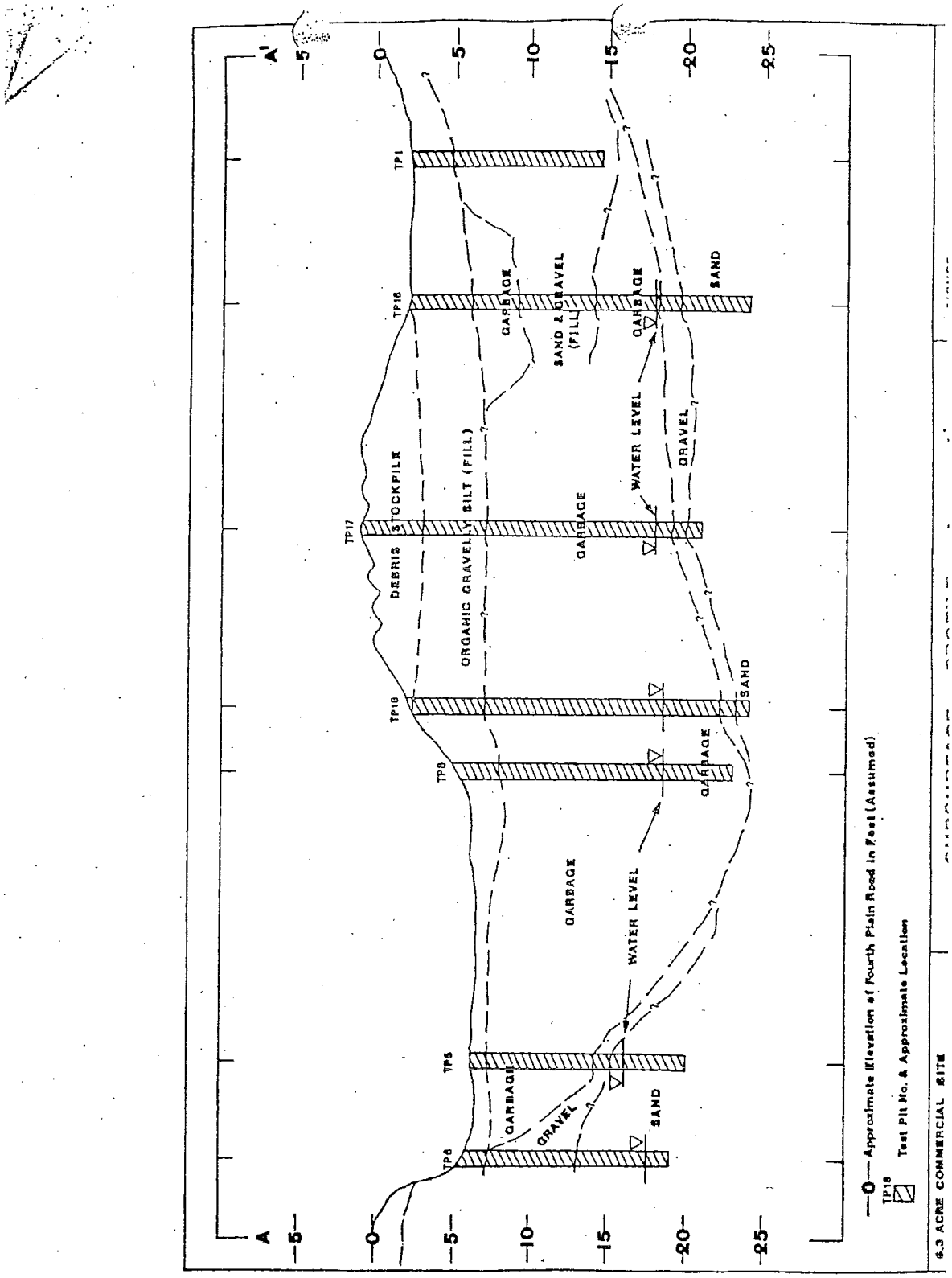
Stockton & Associates, Inc.
Strategic Environmental Services

6.2 Site Plan - Current

Former Turnbull Landfill
Current Site Plan

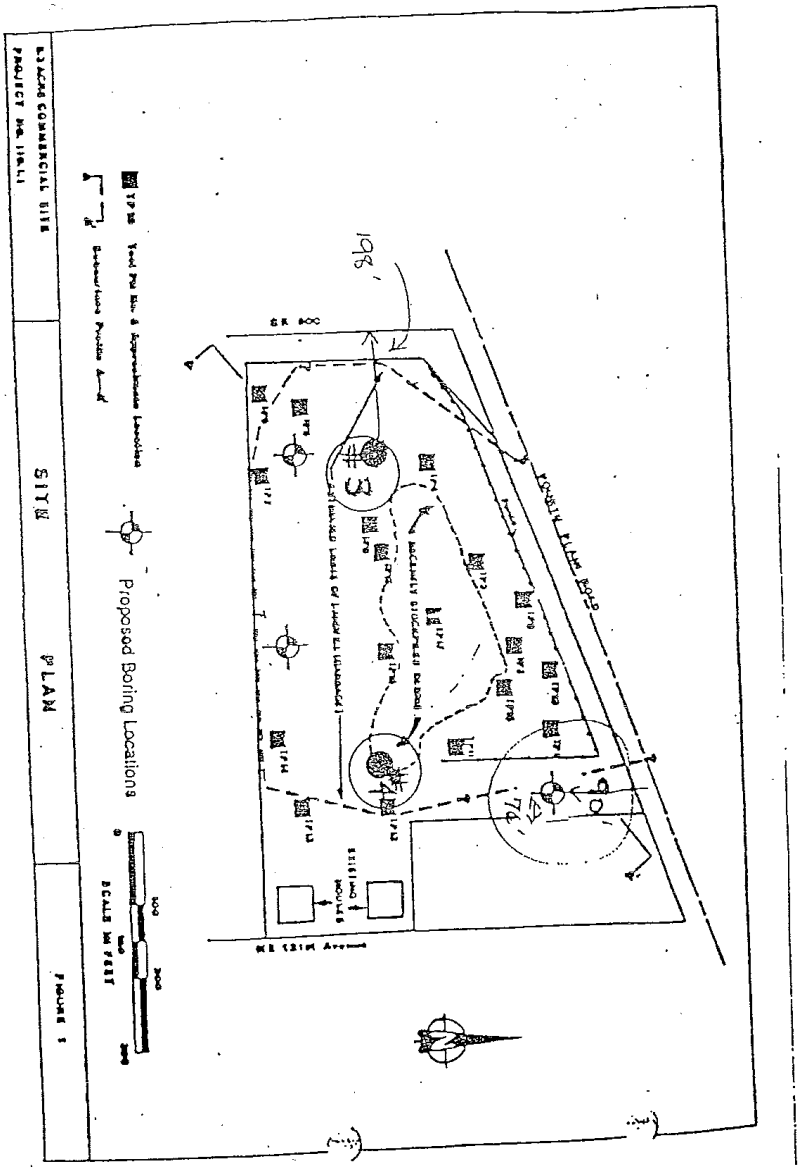
6.3 Northwest Geotechnial Consultants: May 1983, Test Pit Locations and Landfill Cross-Section




A'
A
-5
0
5
10
15
20
25
TP1
TP16
TP17
TP18
TP8
TP5
TP6
GARBAGE
SAND & GRAVEL (FILL)
SAND
WATER LEVEL
GRAVEL
STOCKPILE
DEBRIS
SILT (FILL)
ORGANIC GRAVELLY
GRAVEL
SAND
—0— Approximate Elevation of Fourth Plain Road in Feet (Assumed)
TP18 Test Pit No. & Approximate Location
8.3 ACRE COMMERCIAL SITE

6.4 Northwest Envirocon: March 1991, Investigation Soil Sampling Locations and Soil Sample Results

FIGURE 3 SAMPLING LOCATIONS



ATTACHMENT A

COFFEY LABORATORIES, INC.
12423 N.E. WHITAKER WAY
PORTLAND, OR 97230
PHONE: (503) 254-1794
FAX: (503) 254-1452

February 12, 1991
Log # A910125-AB11

Attention: Larry Crowley
Northwest Envirocon, Inc.
PO Box 4638
Vancouver, WA 98682

PROJECT: Pac N.W. Life PROJECT # 1111

Sample Collected: 1/21/91
Sample Received: 1/25/91
Sample ID: #6 No. 6 Boring #3
#7 No. 7 Boring #3
#8 No. 8 Boring #3

ANALYSIS	METHOD	DETECTION LIMIT	SAMPLE #6 RESULTS	SAMPLE #7 RESULTS	SAMPLE #8 RESULTS
Arsenic	**	15	ND	ND	ND
Barium	**	0.1	11	64	88
Cadmium	**	2	ND	ND	ND
Chromium	**	0.5	0.1	6.2	7.7
Lead	**,7420	5	79	71	3.5
Selenium	**	30	ND	ND	ND,<50
Silver	**	2	ND	ND	ND
Mercury	EPA 7471	0.1	0.3	0.1	ND

Results expressed as mg/kg unless otherwise noted.

ND means none detected at or above the detection limit listed.

** Sample preparation by EPA SW-846 Method 3050. Analysis by EPA SW-846 Method 6010, ICP, unless otherwise indicated.

The less than "<" symbol means none detected at or above the indicated value and represents the detection limit for the method.

Analysis Requested: Total Petroleum Hydrocarbons in soil by modified EPA Method 418.1

SAMPLE ID	SAMPLE RESULTS
No. 6 Boring #3	360
No. 7 Boring #3	770
No. 8 Boring #3	12

Detection Limit: 4 mg/kg

Results expressed as mg/kg unless otherwise noted.

REPORT CONTINUES

ATTACHMENT B

6.5 Northwest Envirocon: June 1991, Test Pit Locations and Approximate Depth of Garbage/Refuse

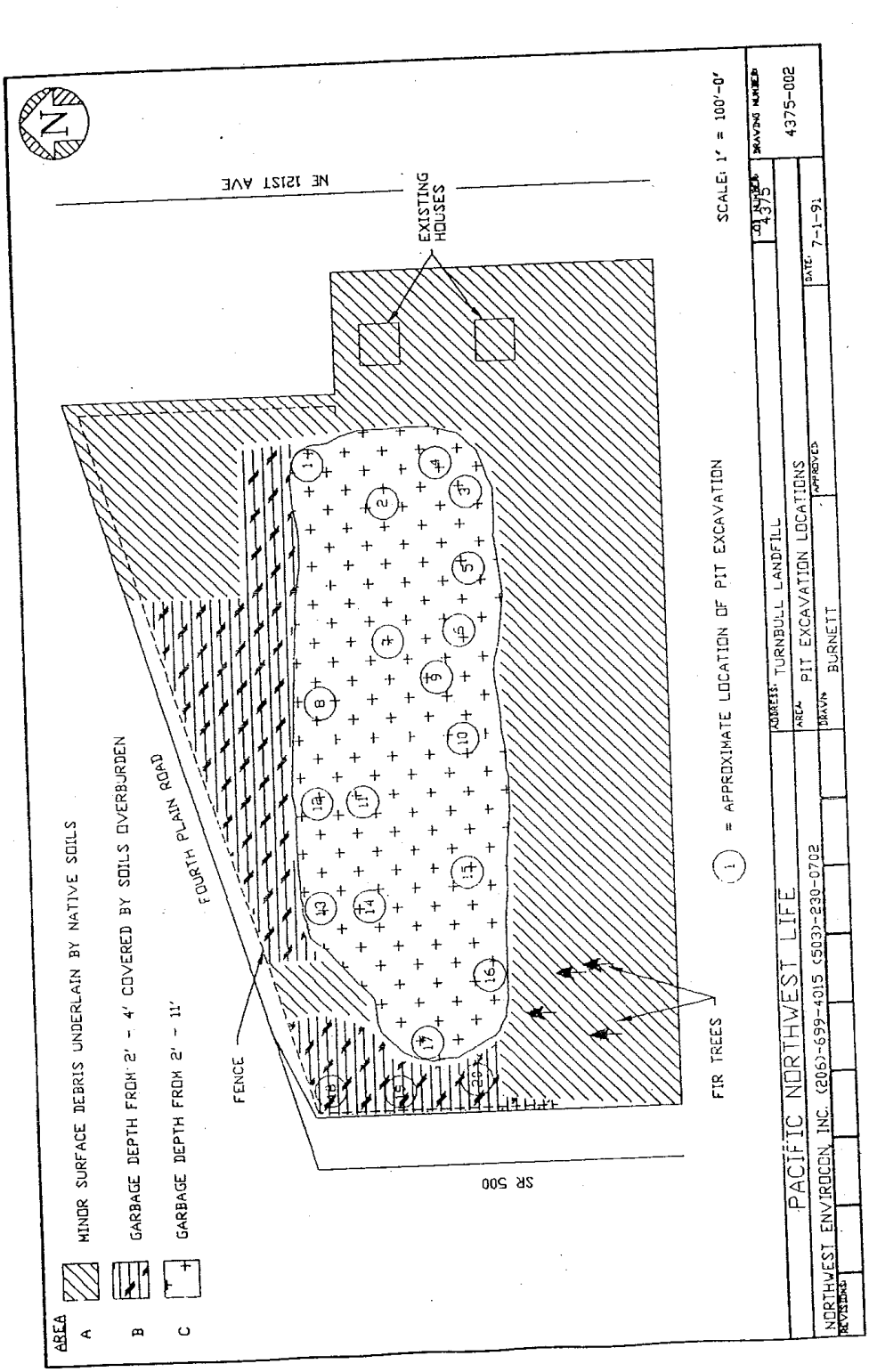


TABLE 1-1

PIT EXCAVATION DATA

Excavation Number	Overall Excavation Depth (ft)	Measured Garbage Depth (ft)
1	9'	4'
2	12'	9'
3	7'	3.5'
4	6'	2'
5	12'	4'
6	7'	3'
7	10'	8'
8	12'	9'
9	12'	8'
10	5'	7'
11	12'	7'
12	11'	5'
13	12'	5'
14	13'	9'
15	6'	2'
16	7'	4'
17	12'	9'
18	5'	3.5'
19	8'	5'
20	7'	4'

6.6 EMCON Northwest: December 1992, Soil Gas Sampling and Groundwater Monitoring Well Locations and Soil Gas and Groundwater Sample Results

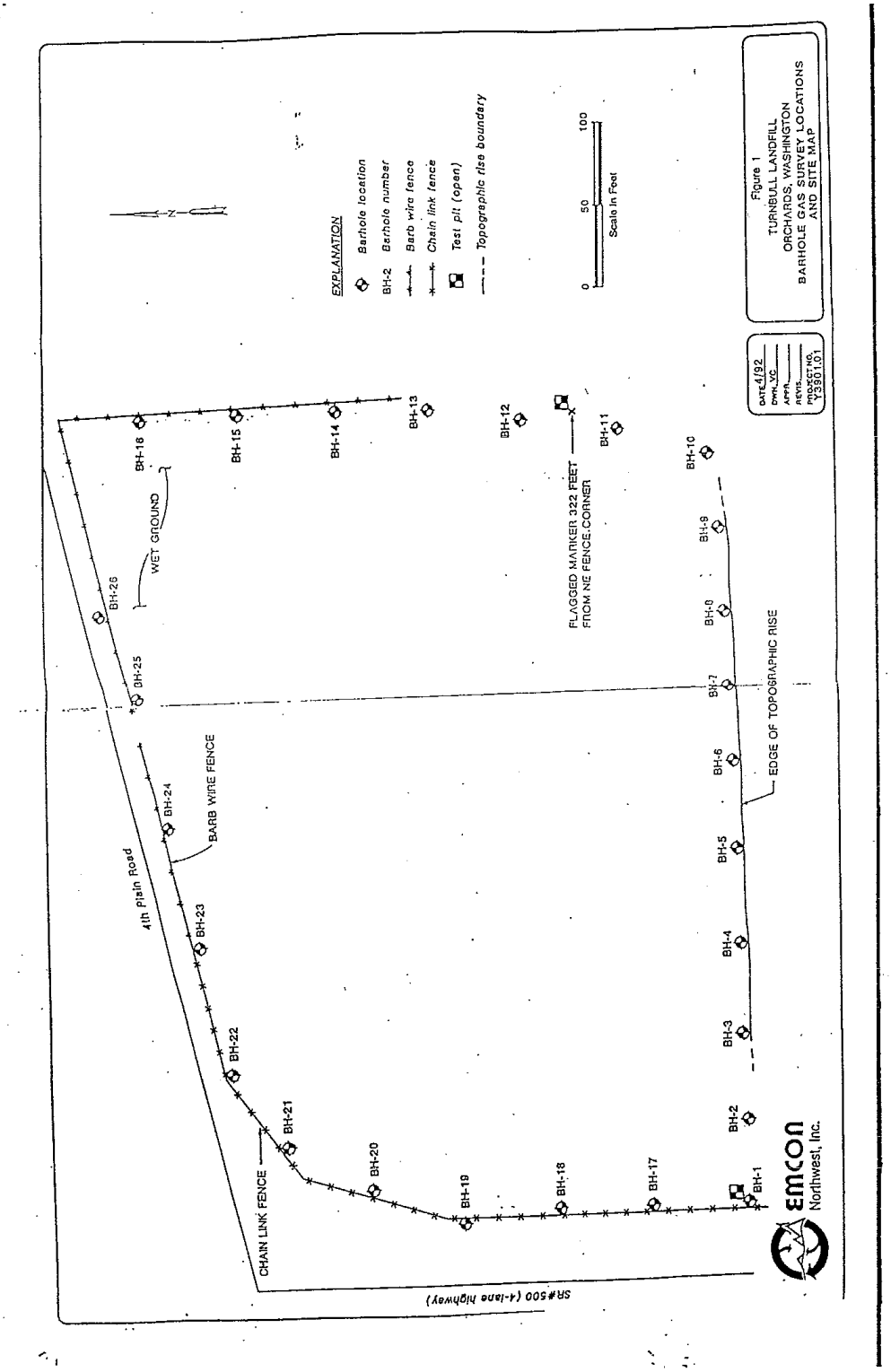


Table 1

Turnbull Landfill
Vancouver, Washington

Barhole Gas Survey Readings Summary

Barhole Number	Depth (ft bgs)[1]	Reading (percent by vol)[2]
BH-1	1.8	0
BH-2	2.5	0
BH-3	1.2	0
BH-4	2.5	0
BH-5	2.5	0
BH-6	2.5	0
BH-7	3.0	0
BH-8	3.0	0
BH-9	3.2	0
BH-10	2.6	0
BH-11	2.7	0
BH-12	3.0	0
BH-13	3.7	0
BH-14	2.1	0
BH-15	2.2	0
BH-16	2.2	0
BH-17	2.2	0
BH-18	2.4	0
BH-19	3.2	0
BH-20	1.5	0
BH-21	2.5	0
BH-22	2.5	0
BH-23	3.2	0
BH-24	3.0	0
BH-25	2.9	0
BH-26	3.1	0
BH-27	2.5	0

[1] bgs = below ground surface
[2] percent by volume of combustible gas

P/PACI/TURNBL-M.604-92/LB:0
Y3701.01

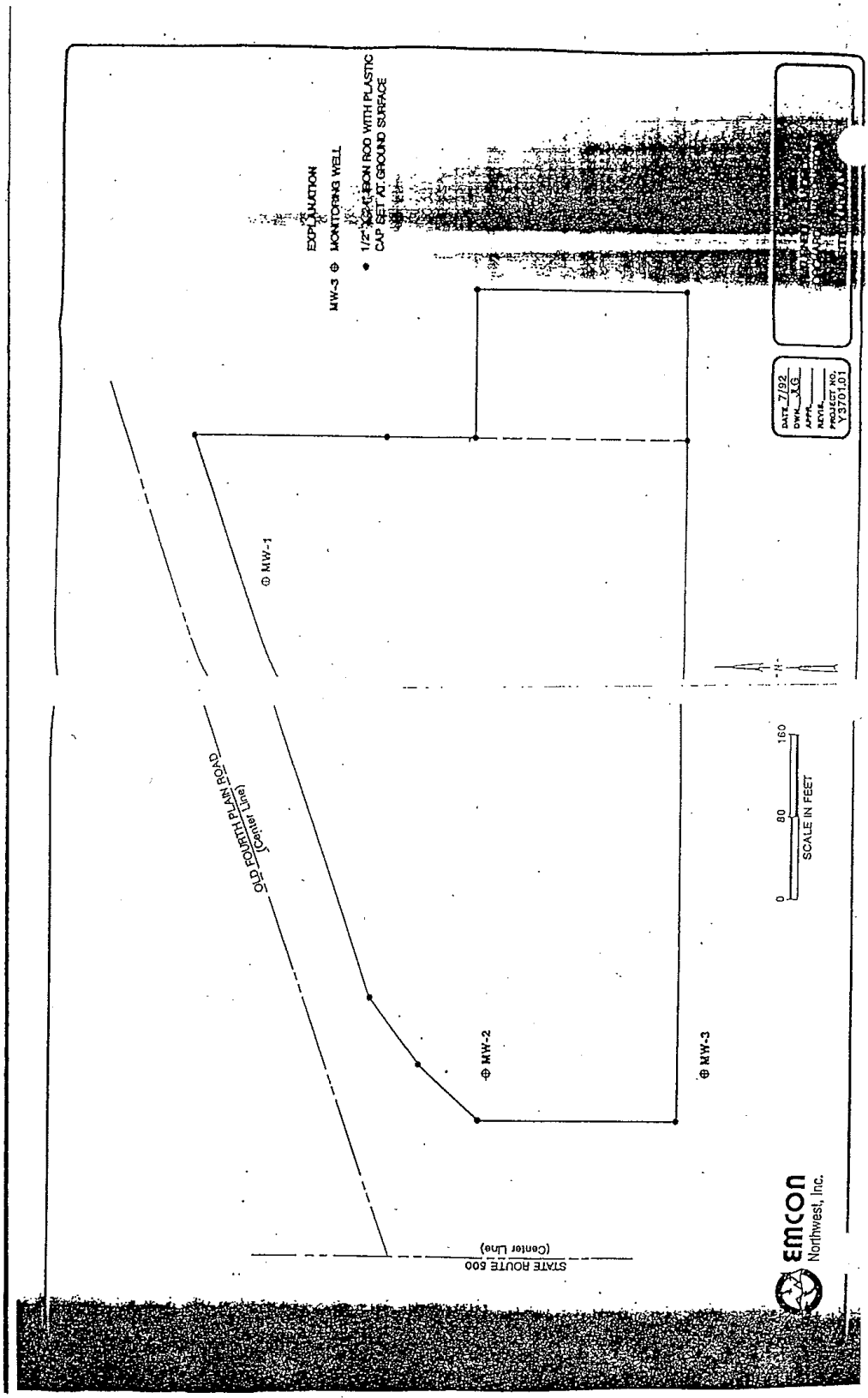

EXPLORATION
MW-3 ⊕ MONITORING WELL
1/2" x 24" IRON ROD WITH PLASTIC
CAP SET AT GROUND SURFACE
DATE 7/92
DWN AG
APPR.
REVS.
PROJECT NO.
V370.01
⊕ MW-1
OLD FOURTH PLAIN ROAD
(Center Line)
⊕ MW-2
⊕ MW-3
STATE ROUTE 500
(Center Line)
0
80
160
SCALE IN FEET
emcon
Northwest, Inc.

Table 2

Turnbull Landfill Site
Orchards, Washington
Ground Water Quality
June 5, 1992
(mg/L)

Well No.	Ammonia	COD	Chloride	Nitrate	Nitrite	Sulfate	TOC	TOC[1]	Iron	Manganese	Zinc	Total Coliform Bacteria[2]	pH	Temp. (°C)	Specific Conductance (µmhos/cm)
EPA Method	350.3	410.2	300.0	300.0	300.0	300.0	415.1	415.1	6010	6010	6010	9221B[4]	(3)	(3)	(3)
MRL	0.05	5	0.2	0.2	0.2	0.2	0.5	0.5	20	5	10	2	NA	NA	NA
MW-1	0.44	559	3.2	2.9	0.2 ND	180	3.7	153	.161	3.150	.01 ND	≥1,600	6.54	14.1	1219
MW-2	1.51	147	3.2	6.9	0.2 ND	47	2.3	59	.028	.341	.01 ND	≥1,600	6.19	13.6	367
MW-3	0.08	136	2.8	1.3	0.2 ND	2.2	0.5 ND	63	1.430	.084	.01 ND	≥1,600	6.30	13.2	180
MW-3 (Duplicate)	0.07	122	2.8	1.3	0.2 ND	2.3	0.5 ND	60	.847	.066	.01 ND	≥1,600	3	13.2	180
Relevant Regulatory Concentrations	NA	NA	250[4]	10[4]	NA	250[4]	NA	NA	0.3[4]	0.05[4]	5.0[4]	1[4]	6.5-8.5[4]	NA	NA[5]

Notes: ND = None detected at or above the method reporting limit shown.
NA = Not applicable.
MRL = Method reporting limit.
Measurements in mg/L except total coliform bacteria.
[4]Standard Method for Examination of Water and Wastewater, 17th Ed., 1989.
[1]Sediment portion after decanting sample and converting to mg/L.
[2]Measured in Organisms per 100 ml.
[3]Field measurement.
[4]Washington Ground Water Quality Criteria (WAC 173-200), Secondary Contaminants.
[5]Washington Ground Water Quality Criteria (WAC 173-200), Primary Contaminants.
[6]Specific conductance is correlated with total dissolved solids (TDS). Typically, the value for TDS in milligrams per liter ranges from 50-70% of the value for specific conductivity. The Washington Ground Water Criteria, Secondary Contaminant, for TDS is 500 mg/L

6.7 Stockton and Associates: November 1997 Investigation Soil Boring Locations

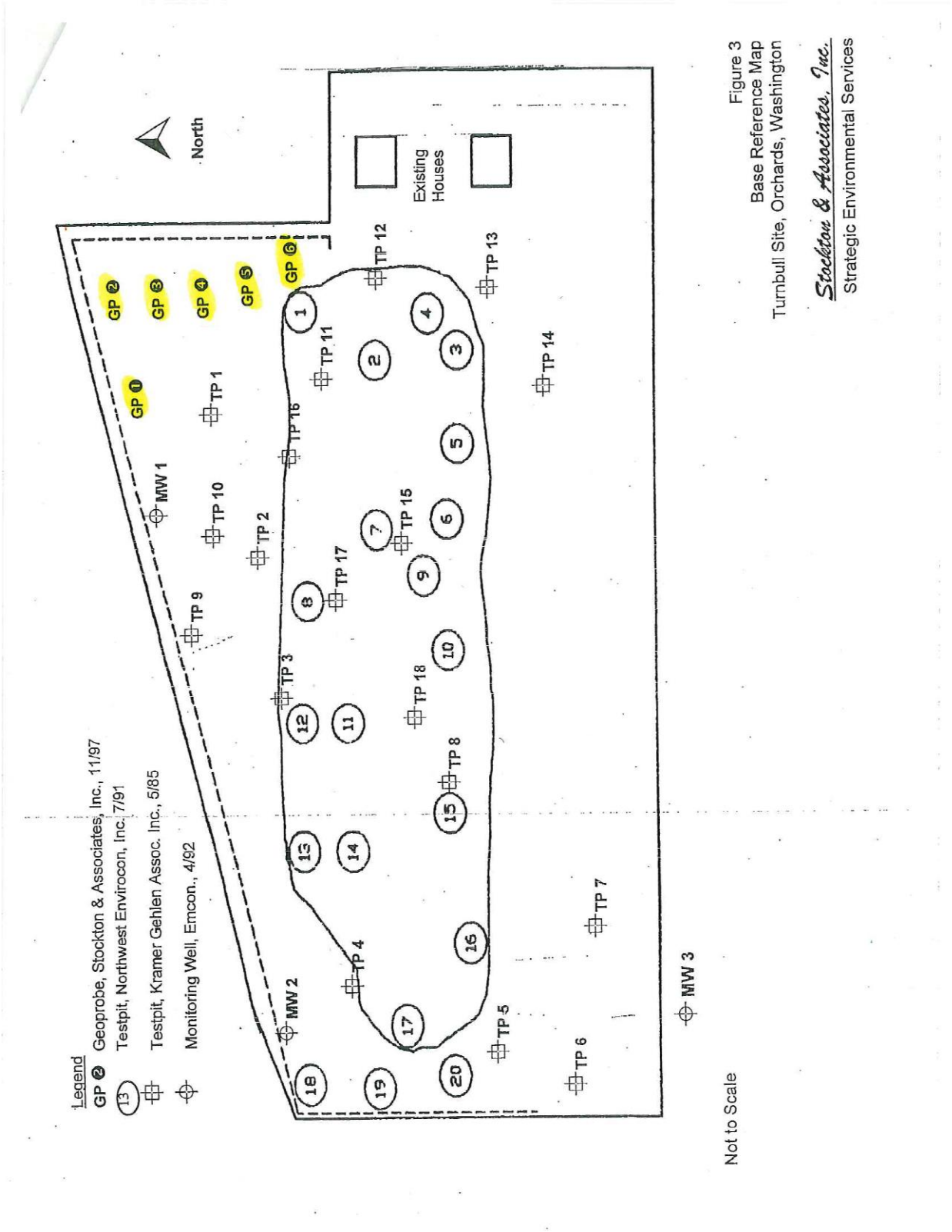


Figure 3
Base Reference Map
Turnbull Site, Orchards, Washington
Stockton & Associates, Inc.
Strategic Environmental Services

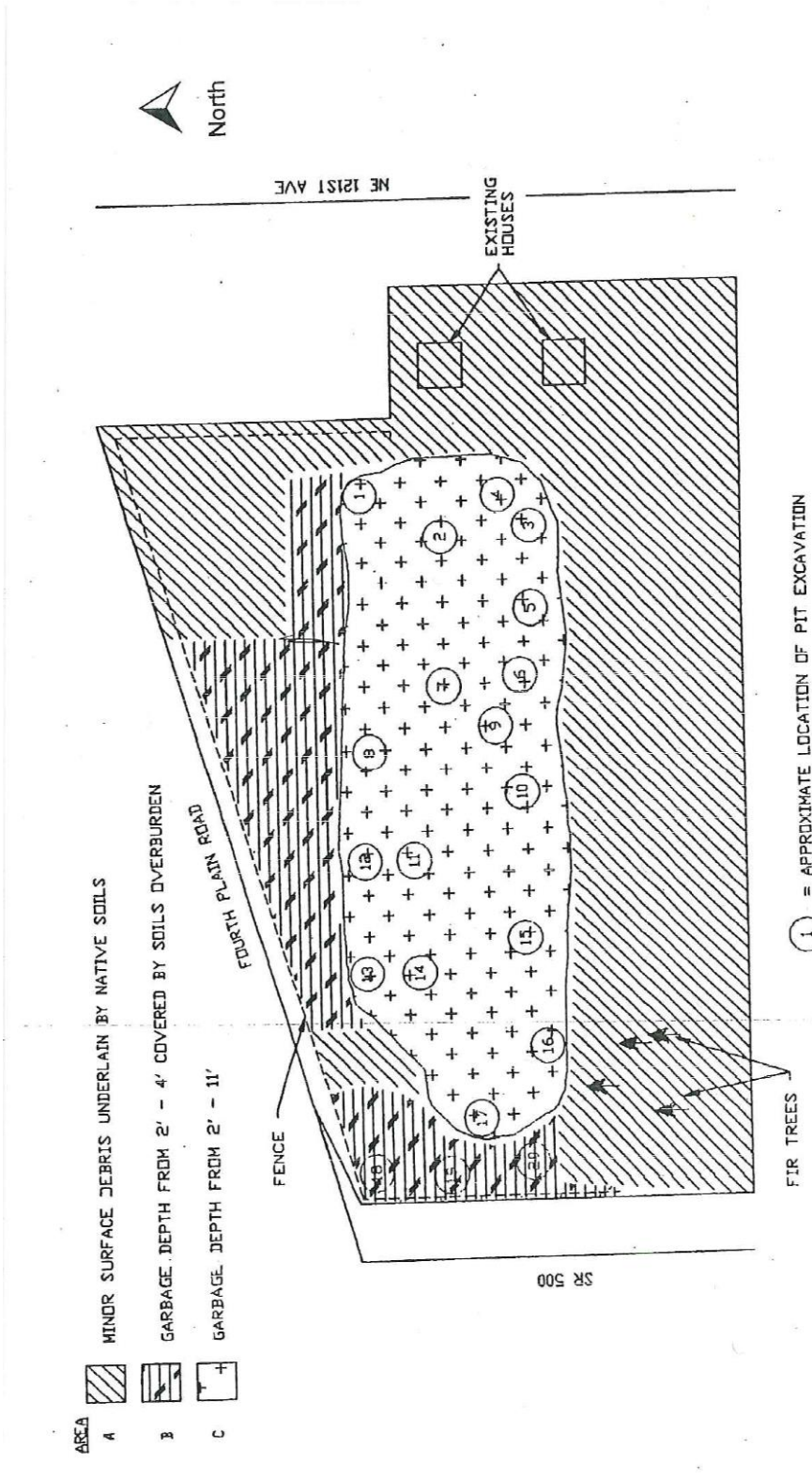
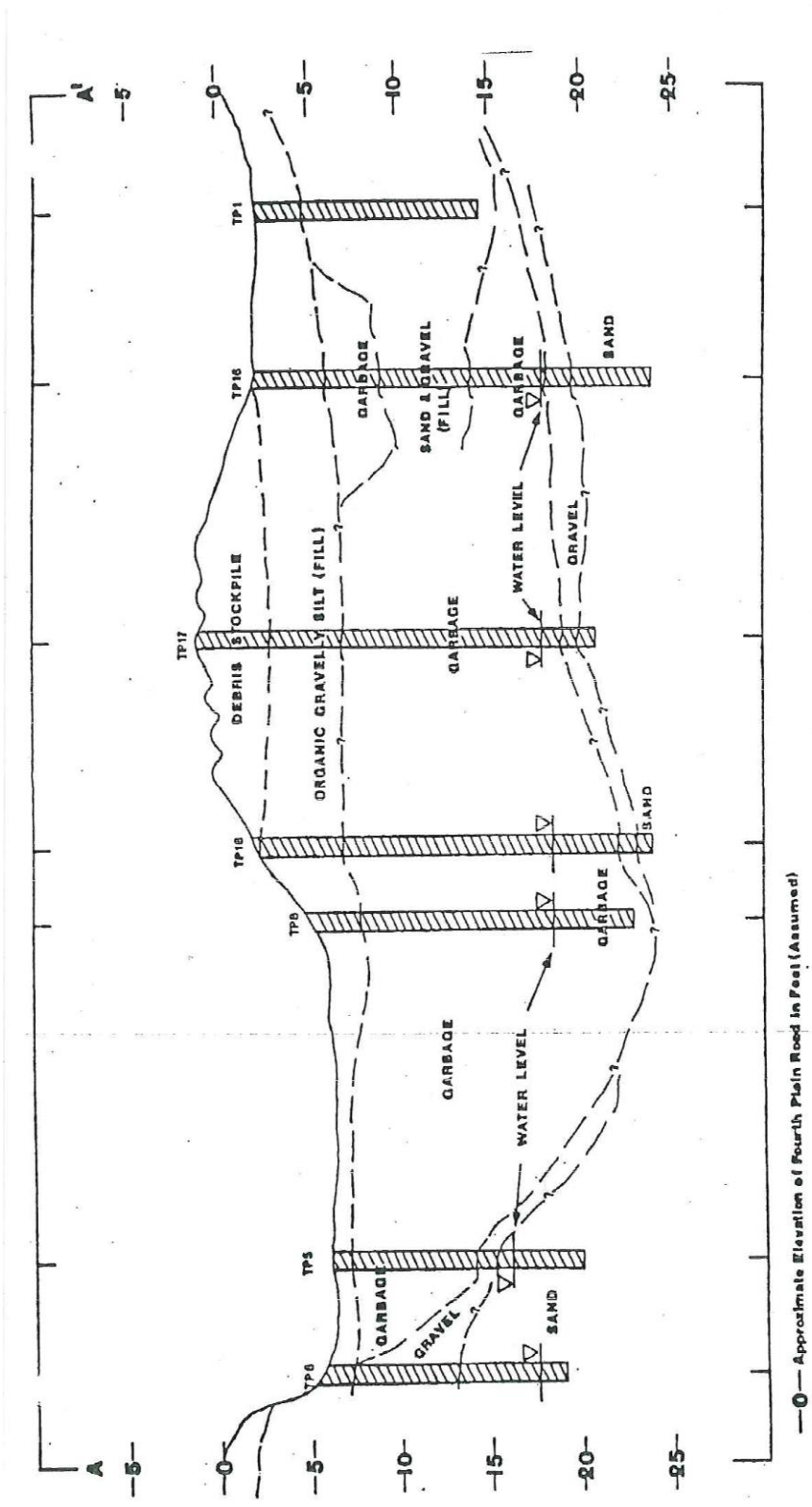


Figure 4
Aerial Extent of Contamination
Turnbull Site, Orchards, Washington

Stockton & Associates, Inc.
Strategic Environmental Services

Source: Pacific Northwest Life. July 1, 1991.
Scale: 1 inch approximately equal to 100 feet.



Source: Northwest Envirocon, Inc. May 25, 1983.
Not to scale

Figure 5
Cross Sectional View of Extent of Solid Waste Contamination
Turnbull Site, Orchards, Washington

Stockton & Associates, Inc.
Strategic Environmental Services

TABLE 1
SOIL TOTAL METALS MONITORING RESULTS
Turnbull Site
Units mg/kg (ppm)

Sample ID	Location ID	Arsenic		Barium		Cadmium		Chromium		Lead		Mercury		Selenium		Silver	
		PQL	Results	PQL	Results	PQL	Results	PQL	Results	PQL	Results	PQL	Results	PQL	Results	PQL	Results
MTCA Method A Levels			20.0		--		2.0		100.0		250.0		1.0		--		--
November 26, 1997																	
TBL-GP4-13-15-S	GP4	2.0	ND	0.50	154	1.0	ND	2.5	24	13	ND	0.10	ND	2.0	ND	1.5	ND
TBL-GP6-18-20-S	GP6	2.0	2.7	0.50	123	1.0	ND	2.5	20	13	ND	0.10	ND	2.0	ND	1.5	ND
TBL-GP1-18-20-S	GP1	2.0	2.9	0.50	247	1.0	ND	2.5	31.7	13	ND	0.10	ND	2.0	ND	1.5	ND
TBL-GP2-13-15-S	GP2	2.0	2.5	0.50	181	1.0	ND	2.5	29.4	13	ND	0.10	ND	2.0	ND	1.5	ND
TBL-GP3-18-20-S	GP3	2.0	3.1	0.50	236	1.0	ND	2.5	33.1	13	ND	0.10	ND	2.0	ND	1.5	ND

Source: Oregan Analytical Laboratory, Beaverton, Oregon. December 1997.

Abbreviations:
-- not regulated
MCLs -- maximum contaminant levels
PQL -- practical quantitation limit
ug/L -- micrograms per liter
ug/kg -- micrograms per kilogram
mg/L -- milligrams per liter
mg/kg -- milligrams per kilogram
ND -- not detected
ppb -- parts per billion
ppm -- part per million

Page 1 of 1

Table 2

Turnbull Landfill Site
Orchards, Washington
Ground Water Quality
June 5, 1992
(mg/L)

Well No.	Ammonia	COD	Chloride	Nitrate	Nitrite	Sulfate	TOC	TOC[1]	Iron	Manganese	Zinc	Total Coliform Bacteria[2]	pH	Temp. (°C)	Specific Conductance (µmhos/cm)
EPA Method	350.3	410.2	300.0	300.0	300.0	300.0	415.1	415.1	6010	6010	6010	9221B[6]	(3)	(3)	(3)
MRL	0.05	5	0.2	0.2	0.2	0.2	0.5	0.5	20	5	10	2	NA	NA	NA
MW-1	0.44	559	3.2	2.9	0.2 ND	180	3.7	153	.161	3.150	.01 ND	≥1,600	6.54	14.1	1219
MW-2	1.51	147	3.2	6.9	0.2 ND	47	2.3	59	.028	.341	.01 ND	≥1,600	6.19	13.6	367
MW-3	0.08	135	2.8	1.3	0.2 ND	2.2	0.5 ND	63	1.430	.084	.01 ND	≥1,600	6.30	13.2	180
MW-3 (Duplicate)	0.07	122	2.8	1.3	0.2 ND	2.3	0.5 ND	60	.847	.066	.01 ND	≥1,600	3	13.2	180
Relevant Regulatory Concentrations	NA	NA	250[4]	10[5]	NA	250[4]	NA	NA	0.3[4]	0.05[4]	5.0[4]	1[5]	6.5–8.5[4]	NA	NA[6]

Notes: ND = None detected at or above the method reporting limit shown.
NA = Not applicable.
MRL = Method reporting limit.
Measurements in mg/L except total coliform bacteria.
[6]Standard Method for Examination of Water and Wastewater, 17th Ed., 1989.
[1]Sediment portion after decanting sample and converting to mg/L.
[2]Measured in Organisms per 100 ml.
[3]Field measurement.
[4]Washington Ground Water Quality Criteria (WAC 173-200), Secondary Contaminants.
[5]Washington Ground Water Quality Criteria (WAC 173-200), Primary Contaminants.
[6]Specific conductance is correlated with total dissolved solids (TDS). Typically, the value for TDS in milligrams per liter ranges from 50-70% of the value for specific conductivity. The Washington Ground Water Criteria, Secondary Contaminant, for TDS is 500 mg/L

> STANDARD

> 2x UPGRADIENT WELL

TABLE 3
WATER TOTAL METALS MONITORING RESULTS
Turnbull Site
Units mg/L (ppm)

Sample ID	Location ID	Arsenic		Barium		Cadmium		Chromium		Lead		Mercury		Selenium		Silver	
		PQL	Result	PQL	Results	PQL	Results	PQL	Results	PQL	Results	PQL	Results	PQL	Results	PQL	Results
Primary MCLs			0.05		(2)		0.005		0.1		--		0.002		0.05		--
MTCA Method A Levels			0.005		--		0.005		0.050		0.005		0.002		--		--
November 26, 1997																	
TBL-GP1-20-W	GP1	0.0020	0.016	0.0010	1.07	0.0020	0.0035	0.0050	0.0888	0.025	0.059	0.00020	ND	0.0020	0.0020	0.0030	ND
TBL-GP2-20-W	GP2	0.0020	0.014	0.0010	0.741	0.0020	0.0031	0.0050	0.128	0.025	0.044	0.00020	ND	0.0020	ND	0.0030	ND
TBL-GP3-20-W	GP3	0.0020	0.0057	0.0010	0.340	0.0020	0.0020	0.0050	0.029	0.025	ND	0.00020	ND	0.0020	ND	0.0030	ND
TBL-GP4-20-W	GP4	0.0020	0.015	0.0010	0.870	0.0020	0.0024	0.0050	0.0500	0.025	0.040	0.00020	ND	0.0020	ND	0.0030	ND
TBL-GP5-20-W	GP5	0.0020	0.0025	0.0010	0.187	0.0020	ND	0.0050	0.011	0.025	ND	0.00020	ND	0.0020	ND	0.0030	ND
TBL-GP6-20-W	GP6	0.0020	0.0041	0.0010	0.502	0.0020	ND	0.0050	0.0021	0.025	ND	0.00020	ND	0.0020	ND	0.0030	ND

Source: Oregan Analytical Laboratory, Beaverton, Oregon. December 1997.

Abbreviations:
-- not regulated
MCLs -- maximum contaminant levels
PQL -- practical quantitation limit
ug/L -- micrograms per liter
ug/kg -- micrograms per kilogram
mg/L -- milligrams per liter
mg/kg -- milligrams per kilogram
ND -- not detected
ppb -- parts per billion
ppm -- part per million

Page 1 of 1

6.8 PNG Environmental: Groundwater Monitoring Well Locations and Four Rounds of Quarterly Groundwater Monitoring Results

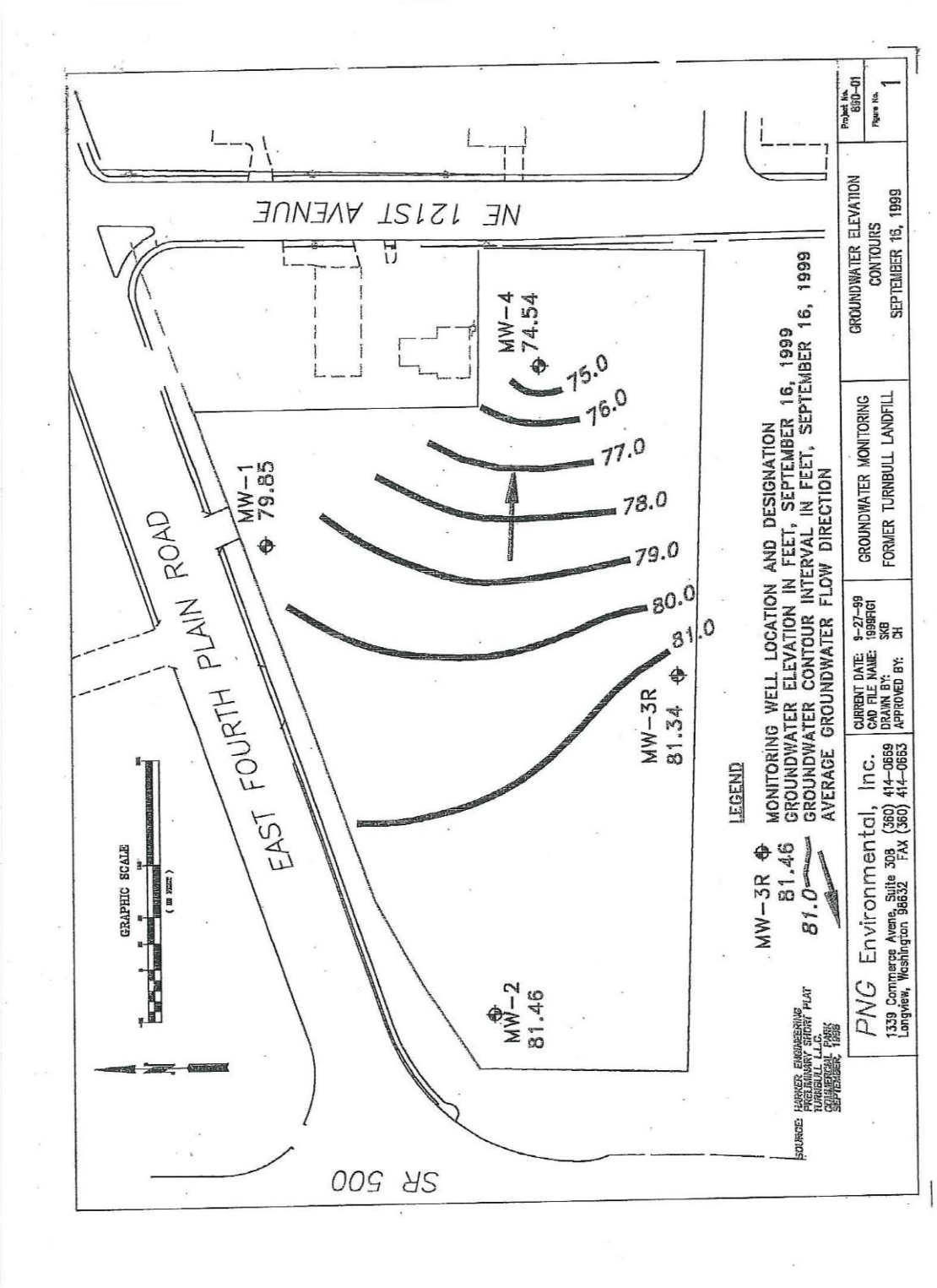
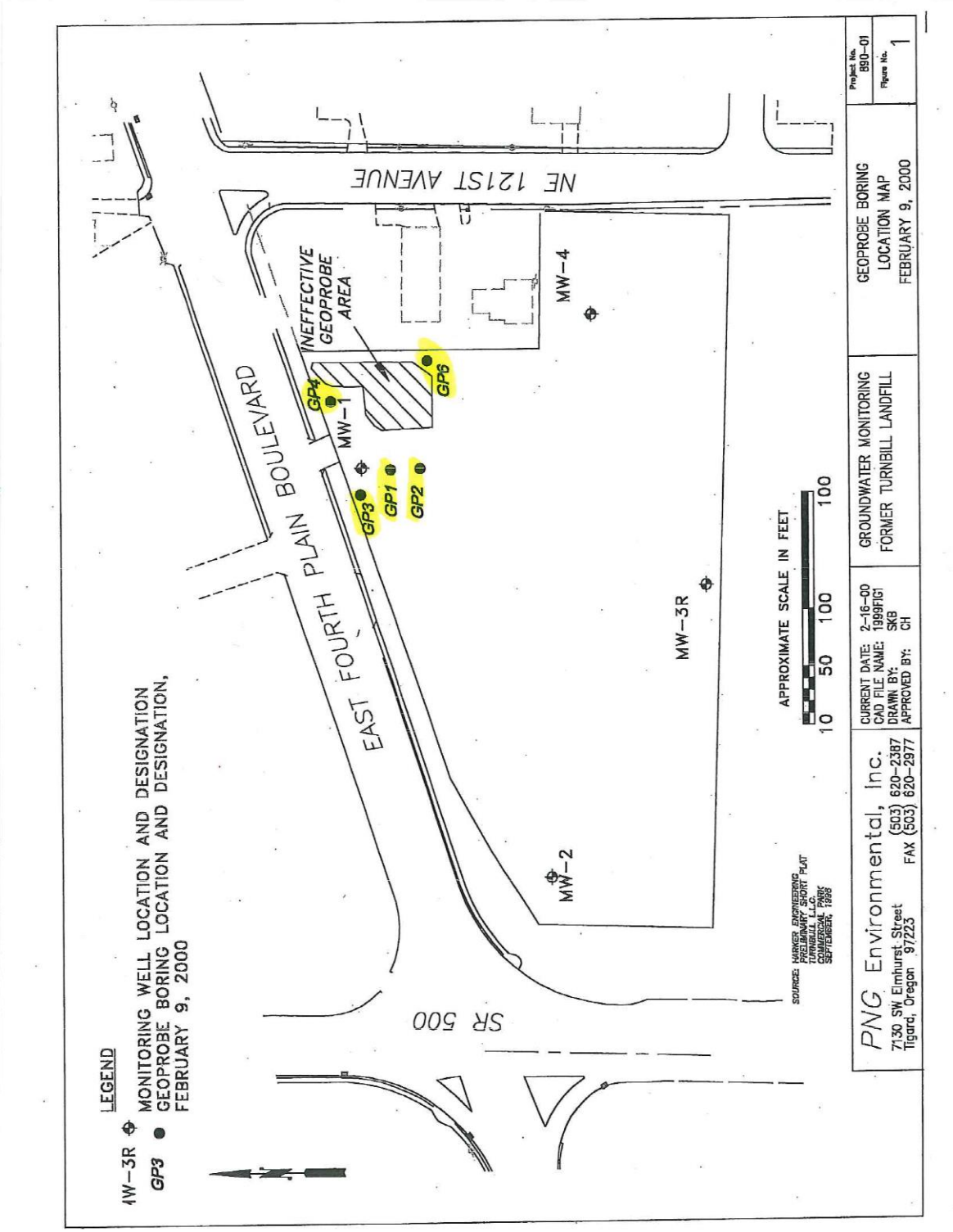


Table 4
Former Turnbull Landfill
Groundwater Dissolved Metals Results
(mg/L-ppm)

Well #	Date Sampled	Iron	Manganese	Zinc
MW-1	12/10/98	0.041	**3.043**	0.010*U*
	3/16/99	0.048	**2.520**	0.010*U*
	6/8/99	0.02*U*	**4.790**	0.010*U*
	9/14/99	0.044	**8.950**	0.010*U*
MW-2	12/10/98	0.022	0.016	0.010*U*
	3/16/99	0.02*U*	0.012	0.010*U*
	6/8/99	0.02*U*	0.005*U*	0.010*U*
	9/14/99	0.02*U*	0.011	0.010*U*
MW-3R	12/10/98	0.026	0.005*U*	0.010*U*
	3/16/99	0.053	0.005*U*	0.010*U*
	6/8/99	0.02*U*	0.005	0.010*U*
	9/14/99	0.041	0.014	0.010*U*
MW-4	12/11/98	0.034	0.005*U*	0.010*U*
	3/16/99	0.033	0.005*U*	0.010*U*
	6/8/99	0.02*U*	0.005*U*	0.010*U*
	9/14/99	0.031	0.005*U*	0.010*U*

U = Not detected at method reporting limit shown

6.9 PNG Environmental: February 2000, Soil Boring Locations for Dissolved Manganese Additional Investigation



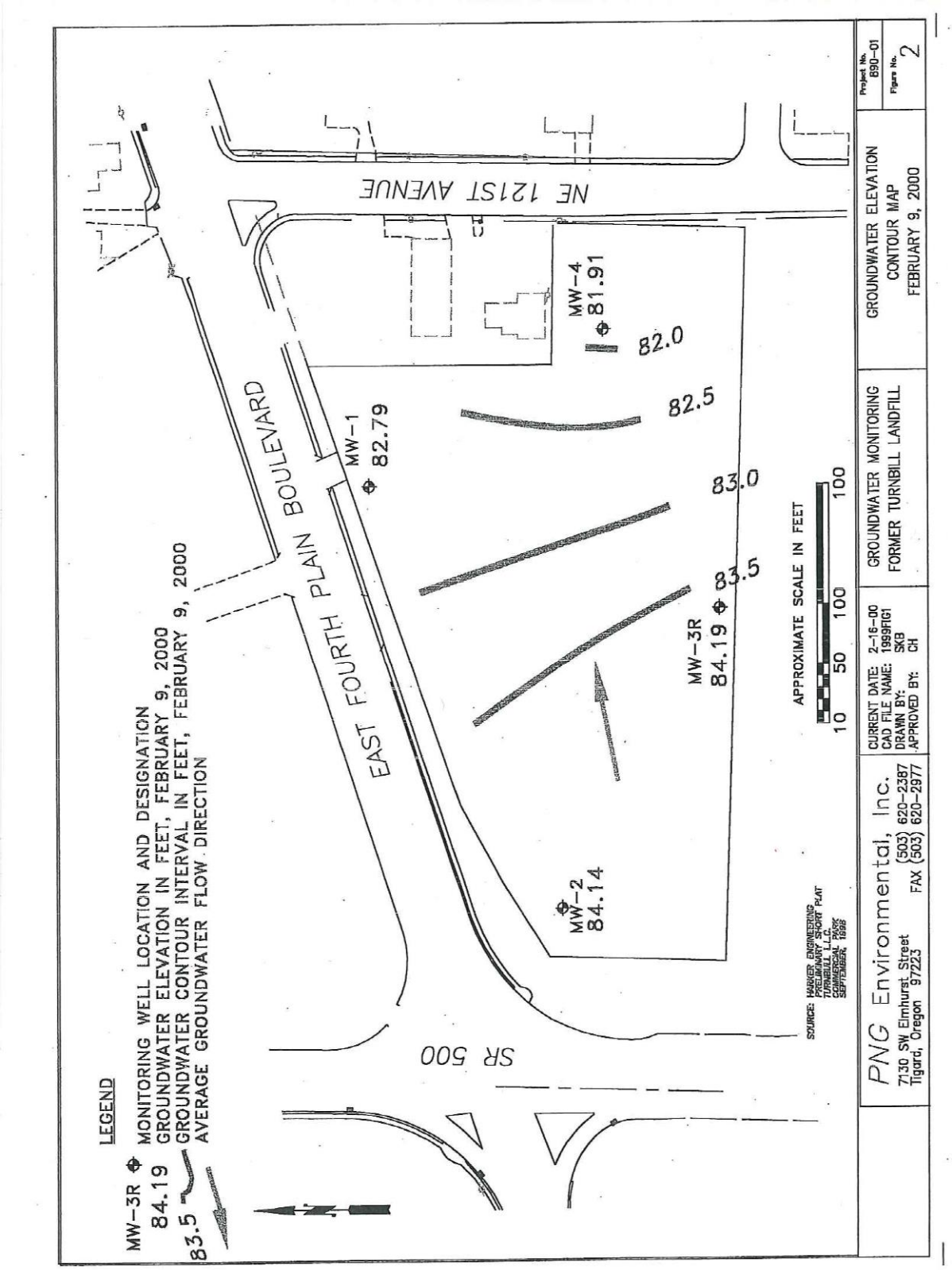
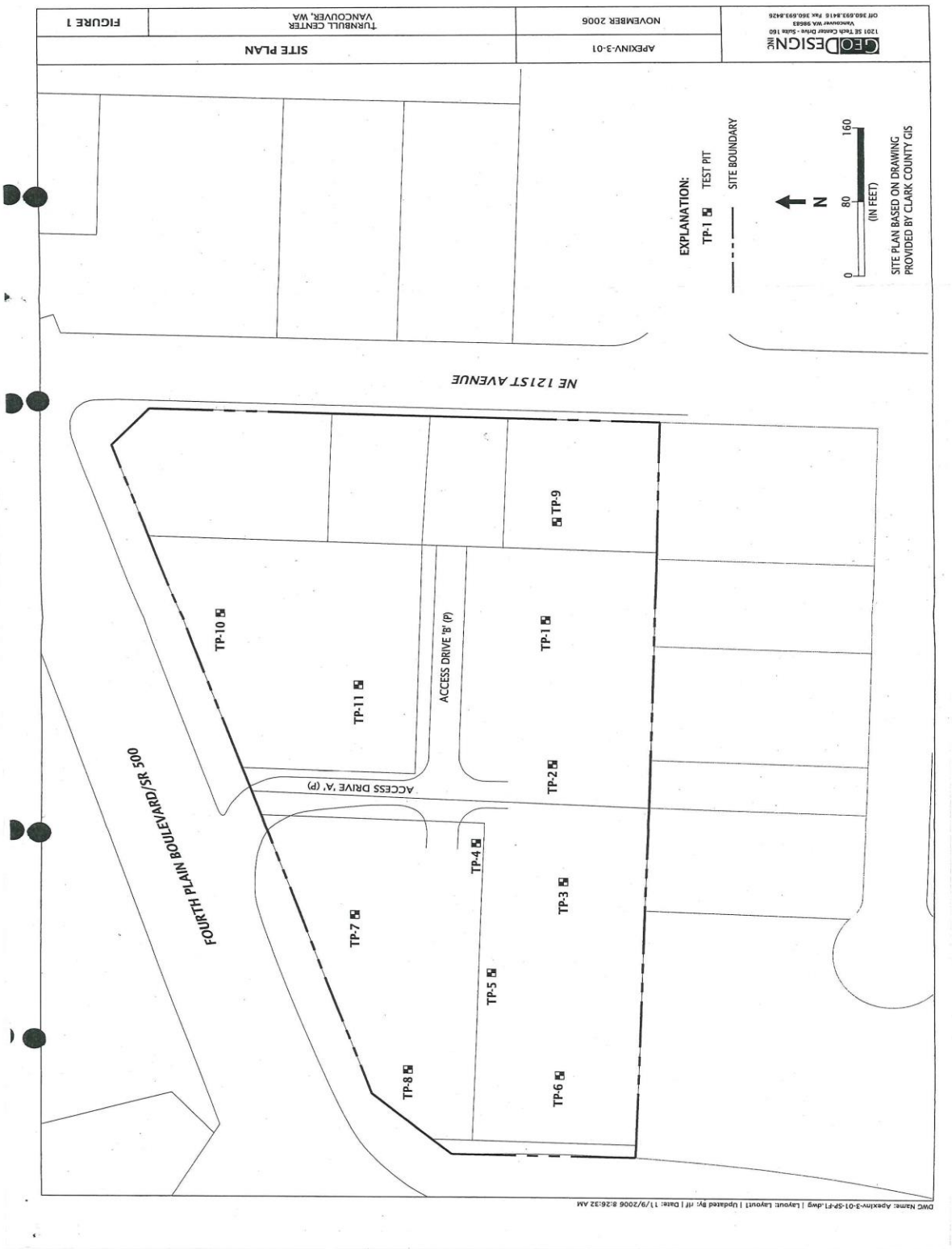

LEGEND
MW-3R ⊕ MONITORING WELL LOCATION AND DESIGNATION
84.19 GROUNDWATER ELEVATION IN FEET, FEBRUARY 9, 2000
83.5 GROUNDWATER CONTOUR INTERVAL IN FEET, FEBRUARY 9, 2000
AVERAGE GROUNDWATER FLOW DIRECTION
NE 121ST AVENUE
EAST FOURTH PLAIN BOULEVARD
SR 500
MW-1
82.79
MW-2
84.14
MW-3R
84.19
MW-4
81.91
82.0
82.5
83.0
83.5
APPROXIMATE SCALE IN FEET
10 50 100 100
SOURCE: HARKER ENGINEERING
PRELIMINARY SHORT PLAT
TURNBULL LANDFILL
COMMERCIAL PARK
SEPTEMBER, 1998
PNG Environmental, Inc.
7130 SW Elmhurst Street
Tigard, Oregon 97223
(503) 620-2387
FAX (503) 620-2977
CURRENT DATE: 2-16-00
CAD FILE NAME: 1999FIG1
DRAWN BY: SKB
APPROVED BY: CH
GROUNDWATER MONITORING
FORMER TURNBILL LANDFILL
GROUNDWATER ELEVATION
CONTOUR MAP
FEBRUARY 9, 2000
Project No. 690-01
Figure No. 2

Table 2
Former Turnbull Landfill
Groundwater Dissolved Metals Results
(mg/L-ppm)

Location #	Date Sampled	Iron	Manganese	Zinc
MW-1	12/10/98	0.041	3.043	0.010*U*
	3/16/99	0.048	2.520	0.010*U*
	6/8/99	0.02*U*	4.790	0.010*U*
	9/14/99	0.044	8.950	0.010*U*
	2/9/00	*NA*	2.010	*NA*
MW-2	12/10/98	0.022	0.016	0.010*U*
	3/16/99	0.02*U*	0.012	0.010*U*
	6/8/99	0.02*U*	0.005*U*	0.010*U*
	9/14/99	0.02*U*	0.011	0.010*U*
MW-3R	12/10/98	0.026	0.005*U*	0.010*U*
	3/16/99	0.053	0.005*U*	0.010*U*
	6/8/99	0.02*U*	0.005	0.010*U*
	9/14/99	0.041	0.014	0.010*U*
MW-4	12/11/98	0.034	0.005*U*	0.010*U*
	3/16/99	0.033	0.005*U*	0.010*U*
	6/8/99	0.02*U*	0.005*U*	0.010*U*
	9/14/99	0.031	0.005*U*	0.010*U*
GP-1	2/9/00	*NA*	7.17	*NA*
GP-2	2/9/00	*NA*	9.07	*NA*
GP-3	2/9/00	*NA*	5.26	*NA*
GP-4	2/9/00	*NA*	0.218	*NA*
GP-6	2/9/00	*NA*	0.095	*NA*

U = Not detected at method reporting limit shown
NA = Not analyzed

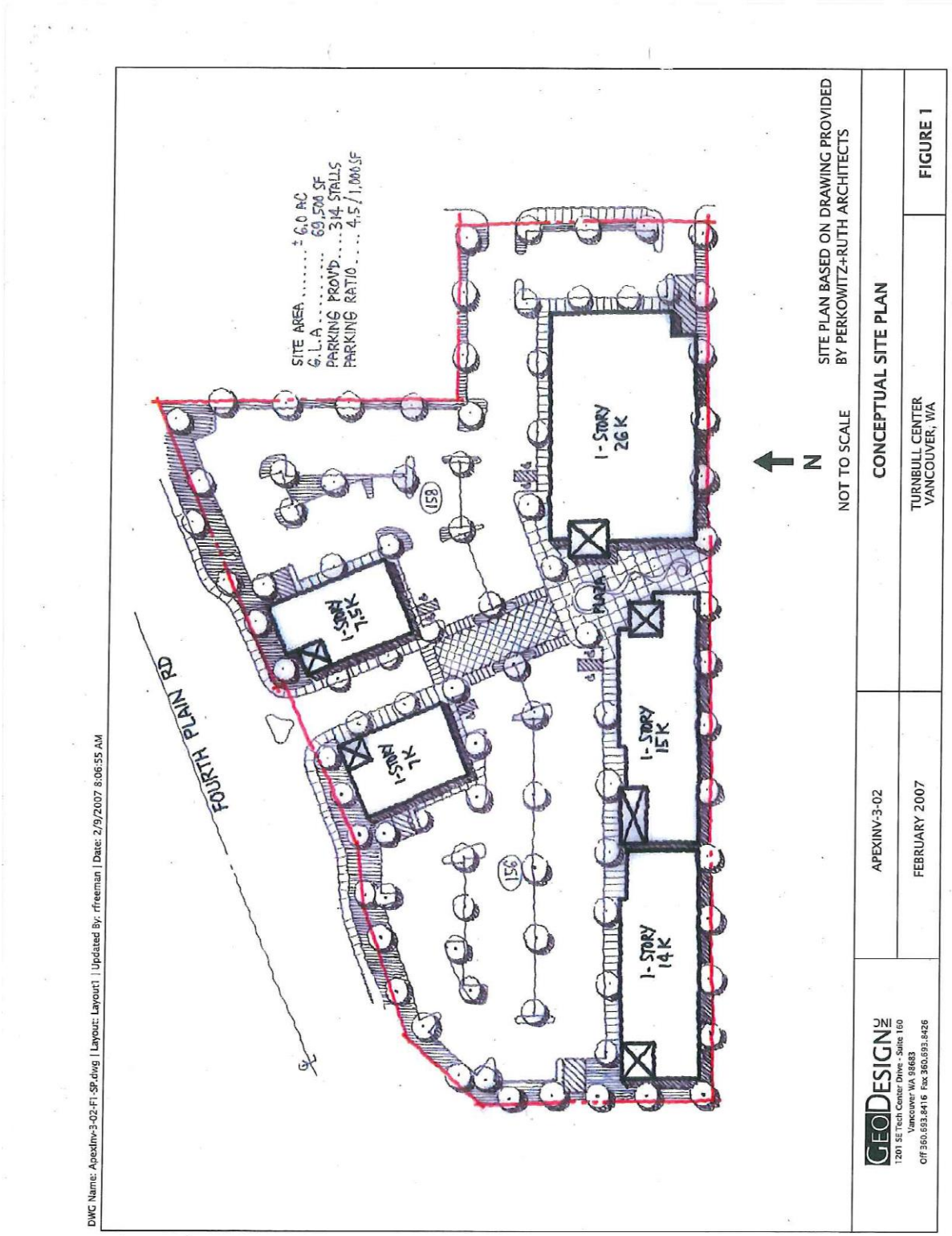
6.10 GeoDesign: August 2006 Test Pits Locations



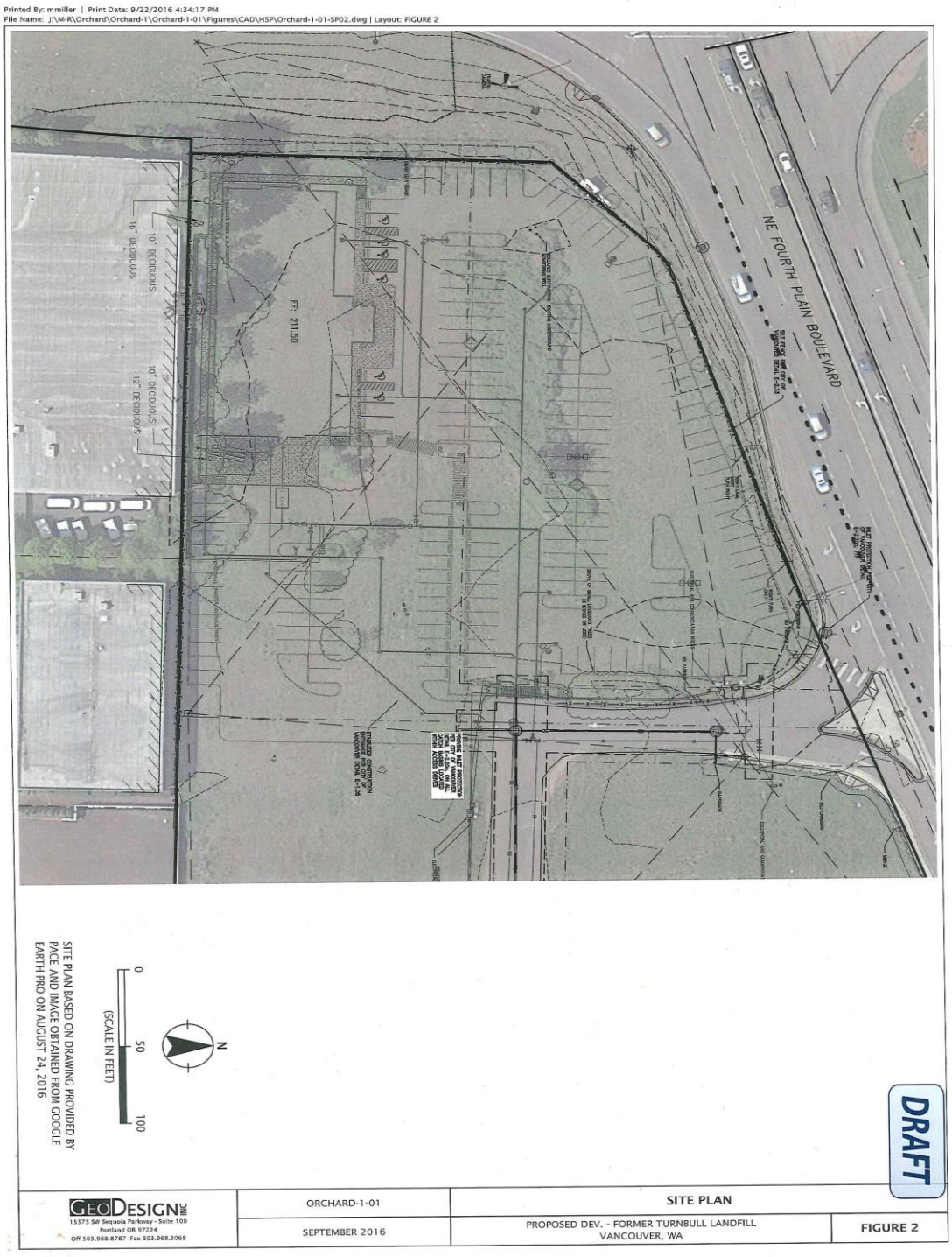
6.11 Remedial Action


PNG Environmental, Inc.
1339 Commerce Avenue, Suite 308 (360) 414-0669
Longview, Washington 98632 FAX (360) 414-0663
CURRENT DATE: 4/19/00
CAD FILE NAME: 8903I-PHS
DRAWN BY: MMM
APPROVED BY: JK
Turnbull Property NFA Request
Former Turnbull Landfill
Orchards, Washington
POST-GRADED SITE PHOTOGRAPH
September 30, 1998
Project No. 890-01
Figure No. 3

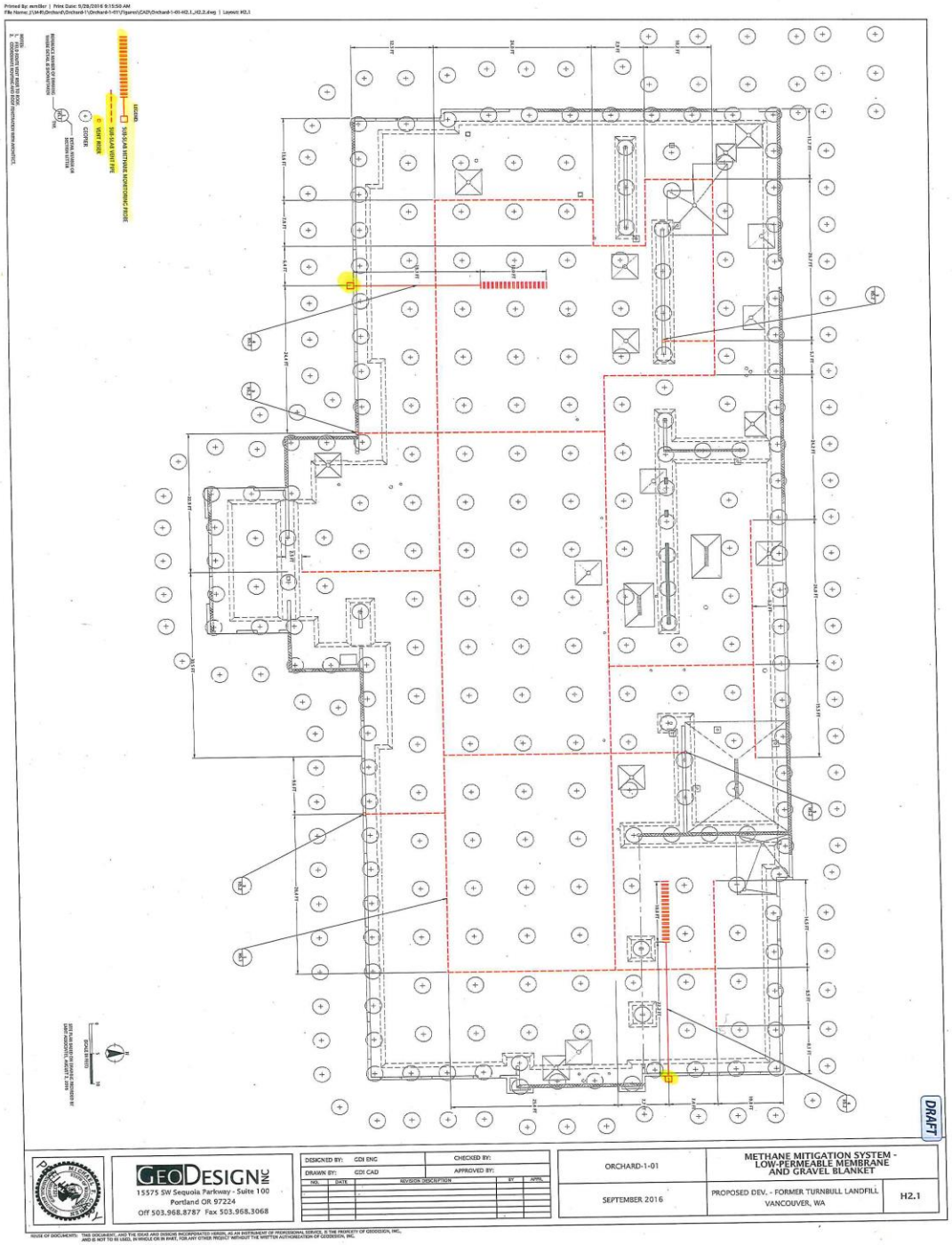
6.12 GeoDesign: February 2007 Property Development Proposal Conceptual Site Plan



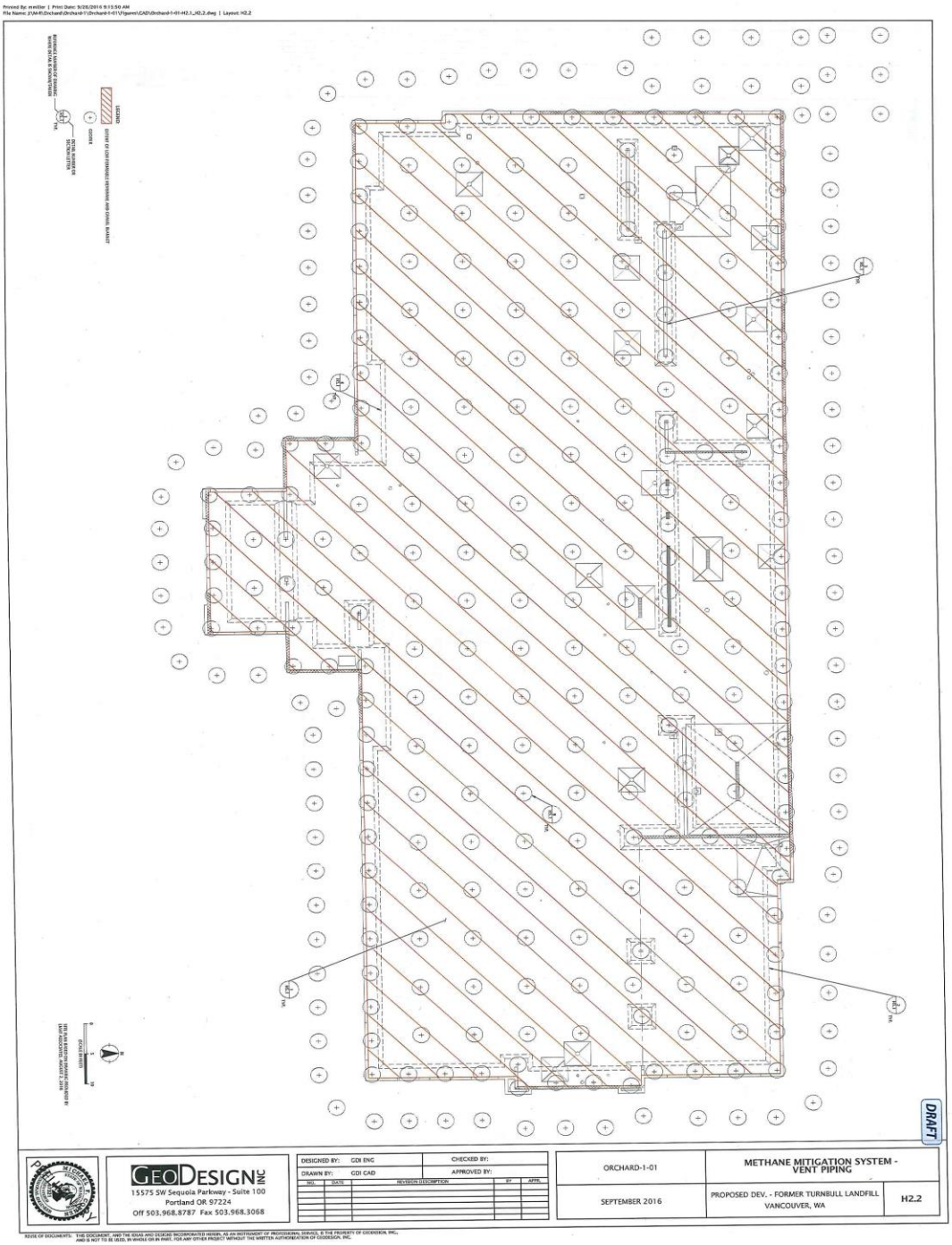
6.13 GeoDesign: 2016 Property Development Plan and Methane Mitigation System



Restaurant Plan, Locations of Engineered Aggregate Piers and Methane Mitigation System



Restaurant Plan, Locations of Engineered Aggregate Piers and Methane Mitigation System



6.14 GeoDesign: 2016 Methane Investigation Sampling Locations and Sample Results

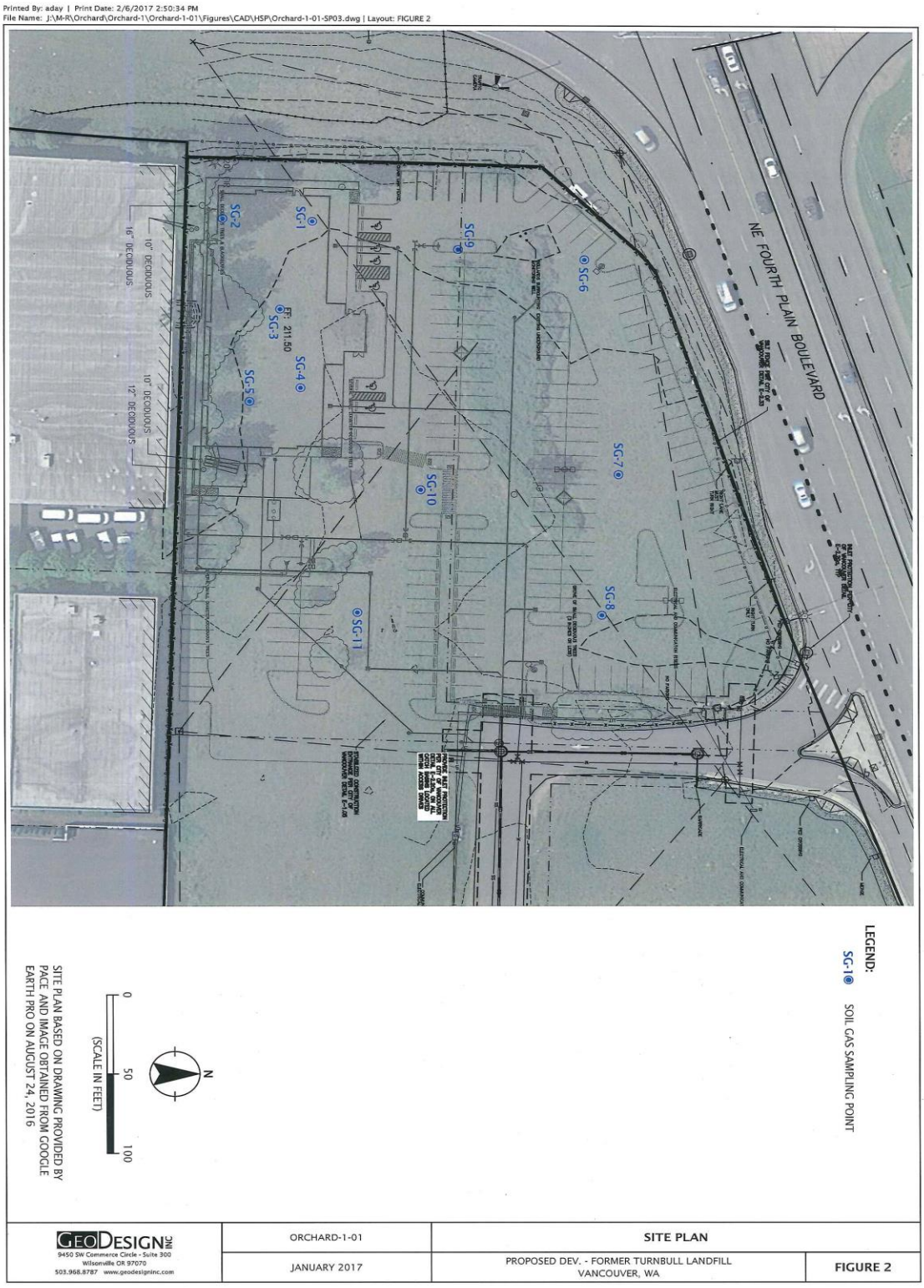


TABLE 1
Summary of Methane Monitoring and Confirmation Soil-Gas Sample Chemical Analytical Results[1]
Proposed Development - Former Turnbull Landfill
Southeast of SR 500 and NE Fourth Plain Boulevard
Vancouver, Washington

Soil Gas Sampling Point I.D.	Date	Time	Barometric Pressure (inHg)	Pressure (iow)	Methane (pbv)	Peak Methane (pbv)	Carbon Dioxide (pbv)	Oxygen (pbv)	Balance	Methane by EPA Method 8015M (ppmv [pbv])
Purge Time: 150 seconds										
SG-1	11/14/16	1107	29.99	0.00	1.7	1.7	13.3	0.0	85.0	3,400 [0.34]
SG-2	11/14/16	1100	29.99	0.00	0.0	0.0	6.5	10.0	83.6	--
SG-3	11/14/16	1055	29.99	-0.05	0.7	0.7	11.6	0.0	87.7	--
SG-4	11/14/16	1044	29.98	0.00	0.0	0.0	0.2	19.5	80.3	--
SG-5	11/14/16	1050	29.98	-0.02	0.8	0.8	9.6	0.0	89.7	--
SG-6	11/14/16	1118	29.98	0.00	0.0	0.0	3.0	11.8	85.2	--
SG-7	11/14/16	1124	29.98	0.00	0.0	0.0	9.7	0.0	90.3	--
SG-8	11/14/16	1130	29.98	0.00	2.3	2.3	9.4	0.8	87.3	--
	11/15/16	0930	29.81	-0.65	3.4[2]	3.4	8.7	1.7	86.2	10,400 [1.04]
SG-9	11/14/16	1112	29.98	0.00	0.1	0.1	12.6	0.0	87.2	--
SG-10	11/14/16	1036	29.98	0.00	1.1	2.0	5.8	10.6	82.5	--
SG-11	11/14/16	1026	29.99	0.00	0.0	0.0	0.5	20.6	78.9	--

Notes:
1. Chemical analyses performed by ESC Lab Sciences of Mt. Juliet, Tennessee.
2. Purge time for this event was 200 seconds.

Bolding indicates analyte detected at or above the laboratory MRL.

--: not analyzed

GeoDesign

Orchard-1-01:012717

6.15 Restrictive Covenant

3251267
Page: 1 of 5
09/14/2000 10:41A
CHICAGO TITLE INSURANCE COV 12.00 Clark County, WA

When Recorded, Return To:
Eva Hawkins-Herrerias
8965 Valley Ford Road
Petaluma, CA 94952

DOCUMENT TITLE:	Restrictive Covenant
GRANTOR:	Eva Hawkins-Herrerias
GRANTEE:	State of Washington Department of Ecology
REFERENCE NUMBER(S) OF RELATED DOCUMENTS:	Auditor File No. F 81387 Auditor File No. F 52832 Auditor File No. G 405046 Auditor File No. G 413233 Auditor File No. G 338297 Auditor File No. G-413233 Restrictive Covenant dated 7/28/00 Recorded 8/18/00 #3243979
LEGAL DESCRIPTION:	That portion of the John Bird Donation Land Claim No. 61 in Township 2 North, Range 2 East of the Willamette Meridian in Clark County, Washington, described as attached Exhibit A.
ASSESSOR'S PROPERTY TAX/ ACCOUNT NUMBER:	158347-000

This document is recorded as an accommodation by Chicago Title Insurance and maintains no responsibility as to the effect of its provisions of this document

11/12/2018 22:21 FAX 004/008

This document is being recorded in order to correct "Fee Ownership" in the Restrictive Covenant dated July 28, 2000 and Recorded August 18, 2000, Clark County Recorder's Number 3243979.

RESTRICTIVE COVENANT

EVA HAWKINS-HERRERIAS - FORMER TURNBULL LANDFILL SITE

This Declaration of Restrictive Covenant is made pursuant to RCW 70.105D.030(1)(f) and (g) and WAC 173-340-440 by Eva Hawkins-Herrerias, her successors and assigns, and the State of Washington Department of Ecology, its successors and assigns (hereafter "Ecology").

An independent remedial action (hereafter "Remedial Action") occurred at the property that is the subject of this Restrictive Covenant. The Remedial Action conducted at the property is described in the following document: Turnbull Property NFA Request, Former Turnbull Landfill, Orchards, Washington, prepared by PNG Environmental, dated April 19, 2000. This document is on file at Ecology's Southwest Regional Office (SWRO).

This Restrictive Covenant is required because the Remedial Action resulted in residual concentrations of manganese which exceed the Model Toxics Control Act Method B Cleanup Level for groundwater established under WAC 173-340-720. In addition, certain portions of the property are underlain with solid waste which may contain hazardous substances in concentrations which exceed the Model Toxics Control Act Method A or B Cleanup Levels for soil established under WAC 173-340-740.

The undersigned, Eva Hawkins-Herrerias, is the fee owner of real property (hereafter "Property") in the County of Clark, State of Washington, that is subject to this Restrictive Covenant. The Property is legally described in Attachment A of this Restrictive Covenant and made a part hereof by reference.

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Eva Hawkins-Herrerias makes the following declaration as to limitations, restrictions, and uses to which the Property may be put and specifies that such declarations shall constitute covenants to run with the land, as provided by law and shall be binding on all parties and all persons claiming under them, including all current and future owners of any portion of or interest in the Property (hereafter "Owner").

Section 1. a. No groundwater may be taken for any use from the Property.

b. A portion of the Property contains solid waste beneath a soil cover. Solid Waste is located on Parcel 1 in the areas depicted on Exhibit B, attached hereto. These areas have been capped with three to 12 feet of clean soil. The Owner shall not alter, modify, or remove the existing structure(s) or the soil cover in any manner that may result in the release or exposure to the environment of the contained refuse or create a new exposure pathway without prior written approval from Ecology.

c. No new structures shall be constructed on areas of the Property where solid wastes have been deposited without the written approval of Ecology and approval by the local agency(s) of jurisdiction.

d. Any activity on the Property that may result in the release or exposure to the environment of the solid waste that was contained as part of the Remedial Action, or create a new exposure pathway, is prohibited without first obtaining written approval from Ecology. Absent obtaining prior written approval from Ecology., some examples of activities that are prohibited in the capped areas include: drilling, digging, placement of any objects or use of any equipment which

deforms or stresses the surface beyond its load bearing capability, piercing the surface with a rod, spike or similar item, bulldozing or earthwork.

Section 2. Any activity on the Property that may interfere with the integrity of the Remedial Action and continued protection of human health and the environment is prohibited.

Section 3. Any activity on the Property that may result in the release or exposure to the environment of a hazardous substance that remains on the Property as part of the Remedial Action, or create a new exposure pathway, is prohibited without prior written approval from Ecology.

Section 4. The Owner of the property must give thirty (30) day advance written notice to Ecology of the Owner's intent to convey any interest in the Property. No conveyance of title, easement, lease, or other interest in the Property shall be consummated by the Owner without adequate and complete provision for continued monitoring, operation, and maintenance of the Remedial Action.

Section 5. The Owner must restrict leases to uses and activities consistent with the Restrictive Covenant and notify all lessees of the restrictions on the use of the Property.

Section 6. The Owner must notify and obtain approval from Ecology prior to any use of the Property that is inconsistent with the terms of this Restrictive Covenant. Ecology may approve any inconsistent use only after public notice and comment.

Section 7. The Owner shall allow authorized representatives of Ecology the right to enter the Property at reasonable times for the purpose of evaluating the Remedial Action; to take samples, to inspect remedial actions conducted at the property, and to inspect records that are related to the Remedial Action.

Section 8. The Owner of the Property reserves the right under WAC 173-340-440 to record an instrument that provides that this Restrictive Covenant shall no longer limit use of the Property or be of any further force or effect. However, such an instrument may be recorded only if Ecology, after public notice and opportunity for comment, concurs.

Signed this date:

September 6, 2000

Eva Hawkins-Herrerias, Owner

STATE OF CALIFORNIA)
)
COUNTY OF SONOMA)

I certify that I know or have satisfactory evidence that *Eva Hawkins-Herrerias* is the person who appeared before me, and said person acknowledged that he/she signed this instrument, on oath stated the he/she was authorized to execute the instrument and acknowledged it as the *Owner* of the *property* to be the free and voluntary act of such party for the uses and purposes mentioned in the instrument.

DATED: 6/Sept., 2000

Notary Public:
Print Name: Leonardo Cedeno
My commission expires: 2/11/04 2001

LEONARDO CEDENO
Commission # 1134794
Notary Public — California
Sonoma County
My Comm. Expires May 2, 2001

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6.16 Photo Log

Photo 1: Northeastern Part of Unpaved Portion of the Landfill – from the Northwest

Photo 2: Northwestern Part of Unpaved Portion of the Landfill – from the Northeast

Photo 3: Eastern Portion of the Unpaved Landfill with Access Road from NE 121st Avenue – from the East

Photo 4: Eastern Portion of the Unpaved Landfill – from the West

Photo 5: New Golden Corral Restaurant Located at Southwest Portion of the Site - from the North

Photo 6: New Golden Corral Restaurant and Parking Lot Located at Southwest Portion of the Site - from the North

Photo 7: New Golden Corral Restaurant Parking Lot - from the Southeast

Photo 8: Groundwater Monitoring Well MW-4 that Needs to be Decommissioned - from the North

Photo 9: Soil Gas Vapor Monitoring Sampling Location/Port Box with the Top Cover, Part of the Methane Mitigation System Installed between the Building Flooring and the Vapor Barrier Layer

Photo 10: Soil Gas Vapor Monitoring Sampling Location/Port, Part of the Methane Mitigation System Installed between the Building Flooring and the Vapor Barrier Layer