METRO LAKE UNION FACILITES NORTH SITE PERIODIC REVIEW FINAL REPORT

King County Department of Transportation
Metro Transit Division Facilities North Site
former Chevron Bulk Terminal #100-1327
also called Metro Lake Union Site

Cleanup Site ID# 1275
Facility Site ID# 2217

1602 N Northlake Way
Seattle, Washington

Northwest Region Office

TOXICS CLEANUP PROGRAM

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1.0 INTRODUCTION

This document is a review by the Washington State Department of Ecology (Ecology) of cleanup site conditions and monitoring data at the King County Department of Transportation (KCDT) Metro Transit Division Facilities North Site (Site), and former Chevron Bulk Terminal #100-1327 to ensure that human health and the environment are being protected.[1] This Site is also called the Metro Lake Union Site, and cleanup actions were implemented under the Model Toxics Control Act (MTCA) regulations, Chapter 173-340 Washington Administrative Code.

Site cleanup activities are being implemented under a legal agreement called a Consent Decree entered in King County Superior Court in 1999 and referenced as Consent Decree #99-2-0865511-1SEA. The cleanup actions are to address and remediate concentrations of petroleum hydrocarbons, related petroleum chemicals and metals in soil; and a similar suite of chemicals found in groundwater. Specifically, the chemicals-of-concern identified in the Consent Decree are: Petroleum (-gasoline, -diesel, and –oil); associated chemicals including benzene, carcinogenic poly-aromatic hydrocarbons (cPAHs), and naphthalene; and five metals –arsenic, cadmium, chromium, lead, and mercury. Some of these chemicals-of-concern currently remain at the Site, and cleanup actions continue to be implemented where sample concentrations exceed MTCA cleanup levels. The MTCA cleanup levels for soil are established under WAC 173-340-740. The MTCA cleanup levels for groundwater are established under WAC 173-340-720.

WAC 173-340-420 (2)(b) requires that Ecology conduct a periodic review of a Site every five years whenever Ecology approves a cleanup action under an order, agreed order or consent decree.

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

(a) 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;
(b) New scientific information for individual hazardous substances or mixtures present at the Site;
(c) New applicable state and federal laws for hazardous substances present at the Site;
(d) Current and projected Site use;
(e) Availability and practicability of higher preference technologies; and
(f) The availability of improved analytical techniques to evaluate compliance with cleanup levels.

Soil cleanup work for a portion of the site known as the North Yard is scheduled for 2014 and estimated to be completed in 2015.

[1] A document titled, "Metro Lake Union former Chevron Bulk Terminal #100-1327 Site Five-Year Review Report" dated March 2014 was submitted by Arcadis but not incorporated into this periodic review.

Outside the North Yard portion of the Site, soils with TPH and lead concentrations exceeding MTCA cleanup levels may still be present at specific locations (Ecology 2010). Metro/Chevron are re-sampling these locations to confirm that the cleanup action has been achieved at each location. However, groundwater compliance monitoring in 2013 show all compliance wells are below cleanup levels except for arsenic at three locations.

Cleanup work at the Metro/Chevron Site outside the North Yard is ongoing through 2015 followed by compliance monitoring from 2015 to 2017 and then by Ecology re-evaluation. This work focuses on soils outside of the North Yard and groundwater underlying the entire Site.

Ecology 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 Description and History

The Site is the King County Department of Transportation Metro Transit Division (Metro) Facilities North Site, former Chevron Bulk Terminal #100-1327 also called Metro Lake Union Site. It is located north of Lake Union and west of Gas Works Park at 1602 N Northlake Way, Seattle, King County, Washington. This three acre site includes approximately 250 feet of waterfront and two parcels called the North Yard and South Yard including the street public right-of-way as shown in Figure 1.

The Site is a former petroleum bulk fueling terminal constructed by Standard Oil Company of California in 1925 - 1927. It was used as a storage and distribution center for various petroleum-based fuels and products including gasoline, diesel, fuel oil, lubricating oils, and gasoline distillates. The North Yard had an above ground storage tank (AST) farm with 7 to 11 tanks ranging in capacity of 11,750 gallons to 440,000 gallons, a fueling rack at the southeast corner of the North Yard and underground piping from the South Yard docks to AST farm. See Figure 2.

Metro purchased the property from Standard Oil in 1982. Standard Oil later became Chevron Products Company (Chevron). Metro refurbished, sandblasted and painted the ASTs. The sandblast grit and paint chips were left on the ground in the tank farm area. This area was later identified as having high metal concentrations in the shallow soils. In 1992, the ASTs were cleaned, ventilated, secured and closed; and the associated petroleum lines were flushed, secured and closed for no further use.

South Yard includes a warehouse, two docks, and a former railroad spur on the east side of the warehouse that was likely used to deliver and ship products by rail. Piping extended under the docks to a pump vault near the warehouse, then underground to the North Yard tank farm. The pipelines were cleaned and closed and left in place. South Yard is currently leased to the Center for Wooden Boats (CWB 2011) with limited access to the public and continuing industrial use. There is no access to the two docks due to pier-dock conditions (Berger Abam Engineers 2006).

North Yard was sold to Touchstone NLU, LLC in 2009 after Touchstone negotiated a Prospective Purchaser Consent Decree (PPCD) in 2007 with Ecology and executed a purchase and sale agreement with King County. The Touchstone PPCD is a limited cleanup within the larger Metro/Chevron CD cleanup action and the purchase and sale agreement between King County and Touchstone also allocates cleanup responsibilities between them. The Touchstone PPCD requires cleanup of contaminated soils within the North Yard property line and the Metro/Chevron CD requires cleanup of soils outside of the North Yard property line and groundwater cleanup action for the entire site (North Yard and South Yard).

The surrounding area is a mix of commercial, residential, and industrial land-uses. To the west is Northlake Ship Yard, which is under s PPCD for cleanup action. To the north is the Essential Baking Company (located on the site of the former Oroweat and Buchan Baking Company bakeries), a deli, and a residence. To the east of the North Yard is Triad Development, retail

businesses and residences. To the east of the South Yard is Seattle Harbor Patrol Facilities and Gas Works Park, which are under an Agreed Order with Ecology to perform a remedial investigation and feasibility study (RI/FS). To the south is Lake Union. See Figure 1 for Site and surrounding location details.

Legal Agreements

Ecology negotiated a consent decree (CD) and Cleanup Action Plan in 1999 with King County Department of Transportation Metro Transit Division Design (Metro) and Chevron Products Company (Chevron) to conduct upland soil and groundwater cleanup. The CD is #99-2-08651-1SEA and was entered in King County Superior Court on April 7, 1999. The CD addresses cleanup actions for soils, groundwater and protection of surface water at Lake Union and excludes lake sediments for the entire Site. The cleanup site identification number is CS Id. # 1275 and facility site number is FS # 2217. For more details, see Appendix A.

Ecology entered a PPCD and Cleanup Action Plan with Touchstone Corporation also called Touchstone NLU Development, LLC or Touchstone Northedge (Touchstone). This PPCD applies to approximately one-half of the Metro Lake Union Site called the North Yard. The PPCD is for the development and cleanup of the North Yard soils only within the property boundary. When cleanup and development are combined, it is commonly called a Brownfield. The cleanup of soils on the Site (but outside the Touchstone property boundary) and groundwater cleanup for the entire Site continues under the Metro/Chevron CD. The Touchstone NLU PPCD is #07-2-23870-1SEA and was entered in King County Superior Court on July 20, 2007. The cleanup site identification number and facility site identification number remain the same. For details on the Touchstone PPCD, see Appendix B.

The North Yard cleanup was delayed from 2009 to 2014 due in part to the economic down turn. Currently, all parties are working together to implement the Touchstone Cleanup Action Plan (CAP) with development, and to coordinate the last steps for Metro/Chevron cleanup actions in order to complete both consent decrees. The estimated time frame to complete the Touchstone PPCD is 2014 to 2015, and the Metro/Chevron CD active remediation should be completed in 2014 to 2015 with compliance monitoring extending into 2015-2017.

2.2 Site Investigations and Sample Results

Several remedial investigations were conducted at the Site for Metro/Chevron from 1991 to 1998 with a supplemental investigation in 2007 (SAIC 2007). The RI/FS was completed in 1993 (Applied Geotechnology Inc 1993) and the Site Cleanup Action Plan (CAP) in 1998 (Foster Wheeler Environmental Corporation 1998). Both the RI/FS and the CAP identified petroleum, petroleum -related products, and metal contamination in the soils and groundwater at the Site.

The remedial investigation conducted in 1993 characterized the nature and extent of contamination in soil and groundwater resulting from activities at the Site and evaluated cleanup action alternatives. The report showed elevated levels of petroleum for gasoline, diesel and oil,

benzene, carcinogenic poly-aromatic hydrocarbons (cPAHs), naphthalene, and metals including arsenic, cadmium, chromium, lead and mercury in soil, which exceeded Site cleanup levels, as listed on Table 1. Most of the metal contamination was located in the shallow soils of the North Yard tank farm. The metal contamination appeared to be sandblast grit and lead paint chips. Elevated levels of petroleum and related substances were identified in deeper soils and groundwater underlying the North and South Yards and the public right-of-way. Table 2 lists all soil results that exceeded Site cleanup levels when sampled.

The groundwater chemicals of concern include petroleum, benzene, ethylbenzene, toluene, cPAHs, naphthalene, and two metals –arsenic and lead, all were exceeding cleanup levels in 1998 and are listed on Table 3. The Metro/Chevron CD specifically excluded evaluation of the Lake Union sediments, which were to be addressed in a separate agreement.

Prior to the sale of the North Yard, Metro/Chevron conducted a supplemental soils investigation surrounding and outside of the North Yard property line in 2007. These results are illustrated in Figure 3 and showed petroleum-gasoline and -diesel exceeding cleanup levels at four locations along and outside of the south property line (SAIC 2007). These locations have been identified for additional remediation by Metro and Chevron in 2014-2015 and see Figure 3.

2.3 Cleanup Actions

The Metro/Chevron Site Cleanup Action Plan divides the Site into two units with two phases. Unit 1/Phase 1 was the Tank Farm shallow soils and tank demolition located in the northern half of the North Yard. Phase 1 included demolition of the ASTs, removal of above ground piping and structures, removal of shallow soils with sandblast grit and paint chips showing elevated concentrations of metals, and soil confirmation monitoring. As described below, Unit 1/Phase 1 work was completed in 2000.

The Unit 2/Phase 2 is to address the deeper soils of the lower area of the North Yard, public right-of-way (R-O-W), South Yard and the groundwater for the entire Site. Thus far, Phase 2 has employed five cleanup methods to remediate the petroleum contaminated soils and groundwater, with varying levels of success. The 2013 groundwater compliance monitoring results are shown for petroleum and metals in Figure 4, and for carcinogenic poly-aromatic hydrocarbons (cPAHs) in Figure 5. The 2014 groundwater compliance monitoring was conducted on June 10-11, 2014. These results are not yet available.

Below is a brief description of the two phases and the five cleanup methods used for Phase 2 with an estimated level of success and corresponding timeline:

1999-2000 Phase 1 - Tank demolition and shallow soil metals cleanup at the Tank Farm by Metro in the northern half of the North Yard. Demolish and remove 7 ASTs, above-ground structures and piping; and test, excavate and remove shallow soils with metals and dispose of at approved facilities. This work was successful and achieved MTCA requirements and cleanup level.

Timeline: work began in October 1999 and completed in January 2000.

1999-Present Phase 2 - Lower Area Soil and Groundwater Cleanup Action by Metro and Chevron, includes the lower (southern) half of the North Yard, street R-O-W and South Yard soils and all groundwater. Five specific cleanup actions were conducted for Phase 2 with varying levels of success. Currently, there are isolated pockets of petroleum (TPH) at MW-3, -10, -27 and -28 at North Yard and extending south of the property line at MW-9 and MW-22 at R-O-W. Groundwater is not in compliance at the North Yard and R-O-W; and is in compliance at the South Yard. For 2013 compliance results, see Figure 4 where TPH exceedances are labeled LNAPL (Light Non-Aqueous Phase Petroleum Liquids) and Figure 5 for cPAHs (Arcadis 2013).
Timeline: work began in 1999 and is currently ongoing.

The Phase 2 specific cleanup action methods used are described below with estimated level of cleanup success and corresponding timeline:

1. Bioremediation used hydrogen peroxide injection in the lower half of the North Yard, R-O-W and South Yard using gravity flow and later using pressured injection at the North Yard. The pilot test began in March 1999 and pilot test report confirmed the cleanup method as effective in March 2000. This method was expanded to the Phase 2 unit (lower half of North Yard, R-O-W and South Yard) in May 2000 and operated through July 2001. Moderately successful in South Yard and R-O-W and unsuccessful in southern half of the North Yard due to high viscosity, age of product and low permeability of substrate including heterogeneous substrate with silts and fine sands impeding TPH removal.
Timeline: work began in March 1999 and stopped in August 2001.

2. Enhanced [Petroleum] Fluid Recovery (also called Vacuum Extraction) to remove TPH diesel and oil at lower half of North Yard only. Two events were conducted during the summer using warmer temperature and estimated higher product mobility. This method was unsuccessful due to high viscosity of TPH product and low permeability (Delta Environmental July 2001).
Timeline: work began August and completed in September 2001.

3. Biosparge Installation and Operation conducted from 2001 through 2007 to cleanup groundwater and surrounding soils in South Yard and R-O-W area. This system addressed migrating groundwater from the North Yard, R-O-W, and soils and groundwater at South Yard. This method was moderately successful in the South Yard and R-O-W, and did not appear to penetrate the North Yard. It was determined to be unsuccessful in the North Yard.
Timeline: work began September 2001, closed October 2008, and closure report was submitted in December 2010.

4. Petroleum Excavation conducted at one isolated TPH pocket in the South Yard at MW-8. The excavation removed petroleum contaminated soils with elevated benzene. The excavated soils were limited to the groundwater smear zone (where groundwater fluctuates up and down with the lake level and groundwater elevation). This fluctuating zone is estimated between 8 to 15 ft below ground surface (bgs). The US Army Corps of Engineers (USACE) monitors Lake Union water level and elevation changes approximately two feet each winter and spring. The excavation sidewall and bottom soil testing results showed very low detection and all results were significantly below cleanup levels, and see Figure 6 for specific results. This cleanup method was determined to be successful at this location.
Timeline: work began October 2003 and completed in January 2004.

   Similarly, investigation at MW-22 location was conducted with 12 soil borings at the R-O-W surrounding MW-22. Well MW-22 groundwater showed elevated concentrations of benzene at 1630 ug/L (microgram per liter, or parts per billion, ppb), which is significantly above the cleanup level at 43 ug/L. The borings were taken approximately 12 to 20 ft below ground surface, representing the groundwater smear zone. The soil results showed that 10 borings had very low detection and all were significantly below cleanup level. Two results were above TPH-gasoline level. Site specific soil cleanup level for TPH-gasoline is 4520 mg/kg (milligrams per kilogram or parts per million); see Figure 7 for specific results (SAIC 2006). No excavation was conducted at the MW-22 area; and as investigatory borings, they are not evaluated as a measure of cleanup success.
   Timeline: work began August 2005 and completed in August 2006.

   The MW-8, -22, -27 and AGI-2 results suggest a "model" that the residual TPH at this Site occurs in isolated pockets at the groundwater smear zone (estimated 8 to 15 ft bgs). This model and these results suggest that the smear zone is a limited zone representing where groundwater fluctuates up and down with the rise and fall of the underground water table pulling the floating petroleum up and down creating a "smear zone." The isolated petroleum pockets and their respective locations are at MW-9, MW-22, and possibly locations outside North Yard south property line at B-12, B-14, and B-23 and for locations see Figure 3 (SAIC 2007) and Figure 4 (Arcadis 2013). This was investigatory work and not evaluated as a measure of cleanup success.

5. Monitored Natural Attenuation at lower half of the North Yard, R-O-W and South Yard from 1999 to current (quarterly groundwater monitoring began in 2000, changed to semi-annual monitoring in 2004, and to annual monitoring in 2013). The Monitored Natural Attenuation results show:

   -North Yard with significant TPH pockets above residual saturation cleanup levels at MW-3, -9, -10, -12, and -27 and SMPN-1, -2, and -3.

-Street R-O-W with TPH pocket at MW-22 above Site cleanup level in 2013.

-South Yard with seven compliance monitoring wells and all are in compliance for TPH. Monitored Natural Attenuation was determined to be successful for the South Yard; partially successful for R-O-W; and unsuccessful for North Yard.
Timeline: work began in 1999 and continues in 2014.

Occurrences of LNAPL

Gauging is to identify the presence of a sheen or floating product also called LNAPL (light non-aqueous phase petroleum liquid) and also listed as single phase hydrocarbons (SPH) in the earlier reports. These two terms - LNAPL and SPH both describe floating petroleum product and both are used in the Site reports and describe the same occurrence.

If LNAPL is present, then the Metro/Chevron CD requires measuring the thickness of the product, removing and recording the volume of product removed (CD CAP Section 6.2.2 Performance Monitoring Phase 2 and Ecology letter April 19, 2011). Gauging and removal are scheduled quarterly and may be increased depending on the LNAPL accumulation rate at that specific location (CD CAP Appendix B SPH removal quarterly and monthly). The Consent Decree requires quarterly gauging for LNAPL. Many of the wells that were not gauged are within the area that will be excavated by Touchstone. The Site compliance with the gauging requirement needs to be addressed (CD Section VI and the Metro/Chevron CAP Section 6.2.2).

The summary for LNAPL gauging at the North Yard wells from 2007 to 2013 is as follows:

-MW-3 showed LNAPL present 3 quarterly events out of 12 events and last 11 quarters not gauged and compliance to be addressed.
-MW-9 showed LNAPL present 11 out of 18 events and last showed 0.67 ft of product in 2013, and compliance needs to be addressed.
-MW-10 showed LNAPL present 10 out of 12 events, last measured 9/15/10; and last 12 quarters not gauged, and compliance to be addressed.
-MW-11 showed no LNAPL during last 12 events and no gauging since 3/14/11. Gauging is required and compliance needs to be addressed.
-MW-12 showed LNAPL present 3 out of 9 events, last measured 9/15/10; and last 12 quarters not gauged, and compliance to be addressed.
-MW-27 showed LNAPL present 12 out of 15 events and last event showed 0.01 ft of product in April 2013.
Nearby observation points SMPN-1 (6 ft down gradient) showed LNAPL present 6 out of 14 events and last event showed no product in April 2013; SMPN-2 (6 ft down gradient) showed LNAPL present 14 out of 22 events and last showed no product in April 2013; and at SMPN-3 (11 ft down gradient) showed LNAPL present 5 out of 22 events and last event showed no product in 2013. These results at the

south end of the North Yard demonstrate that the LNAPL is migrating towards the southwest.

Gauging at MW-27 is in compliance, however with the presence of LNAPL shows exceedance above cleanup level, and this location must have cleanup action and compliance monitoring addressed.

-MW-28 showed LNAPL present 9 of the last 10 events; and no gauging since December 2010. Gauging has not been conducted for the last 13 quarters; and must have compliance to be addressed.

Irregular or no gauging allows LNAPL to accumulate and potentially migrate towards Lake Union, following the direction of groundwater flow. Absence of gauging or irregular gauging increases the risk of contaminant migration.

2.4 Cleanup Actions Planned for 2014-2017

The Touchstone PPCD is scheduled to begin cleanup actions at the North Yard in July 2014 with an estimated completion of on-property soil remediation by December 2014 and redevelopment in 2016. See the Engineering Design Report for more details for the North Yard cleanup action (Associated Earth Sciences, Inc. 2014) on the Site webpage at:

https://fortress.wa.gov/ecy/gsp/Sitepage.aspx?csid=1275

Metro and Chevron are preparing a Work Plan to identify the specific tasks needed to complete the cleanup actions for soils within the Site but outside the North Yard property line (i.e. within the R-O-W and South Yard portions of the Site). Metro and Chevron are also continuing groundwater compliance monitoring. The soils work is estimated to be completed in 2014 - 2015, and groundwater compliance monitoring will be conducted in 2014-2017. For more details, see the above listed webpage.

2.5 Cleanup Levels

The Metro/Chevron CAP states that the cleanup levels were set taking into consideration site location, current and future land use, potential exposure pathways, chemicals of concern, and protection of human health and the environment. The soil cleanup levels used residual saturation level for total petroleum hydrocarbons and MTCA Method A Industrial Soil Cleanup Levels. These cleanup levels require the property to be restricted to industrial use only. For further discussion about cleanup levels, see Ecology response to citizen comments in Appendix C.

Touchstone has set more stringent soil cleanup levels for soils within the North Yard property line. These cleanup levels use MTCA Method A for unrestricted use including residential use.

Groundwater cleanup levels were set to protect surface water at Lake Union. Groundwater yield was determined insufficient and not potable (not a future source of drinking water) based on

aquifer testing under WAC 173-340-720(2) (Ecology 1998). Groundwater cleanup levels were set at MTCA Method B for protection of surface water and listed on Table 1.

2.6 Restrictive Covenant

Based on Site use, cleanup action status and cleanup levels, it was determined that a Restrictive Covenant was required for the Site. The Restrictive Covenant was recorded for the Site on November 26, 2002 (see Appendix A), which imposed the following limitations:

1. No activities that interfere with the remedial actions required by the Consent Decree shall be undertaken on the Property without Ecology approval.
2. No wells for the extraction of water shall be installed in the Property without Ecology approval.
3. No development of the Property for uses other than industrial uses as defined in Chapter 70.105D RCW, shall be undertaken without Ecology approval.
4. With the exceptions for landscaping and shallow underground utilities, no excavation of soils shall be permitted on the Property without Ecology approval. Any excavation for such landscaping or underground utilities must ensure that there is no increased exposure of the residual contaminants remaining in the Property after the Cleanup Action.
5. No title, easement, lease or other interest in the Property shall be conveyed or entered into without adequate provision for the terms of this Declaration of Restrictive Covenants.
6. Authorized representatives of Ecology shall have the right to enter the Property at reasonable times with reasonable notice of the purposes of evaluating compliance with the terms of this Declaration of Restrictive Covenants.

Ecology has committed to review the covenant with Metro, Chevron and Touchstone after Touchstone completes their soil cleanup action and soil confirmation testing in January 2015. The Touchstone PPCD states that Touchstone may record an amended Restrictive Covenant (RC) for their property after completion of excavation and soil results for the North Yard property. The RC will be reviewed after the completion of the Touchstone PPCD and again after completion of the Metro/Chevron CD estimated in 2017, after which Metro may record an amended covenant for their property. For further discussion about the RC, see Appendix C.

3.0 PERIODIC REVIEW

This report is the first periodic review conducted by Ecology for this Site. It represents a review of the remedial investigations, feasibility study, cleanup actions and compliance monitoring from 1993 to 2014. Early in 2014, Arcadis prepared a draft five-year review report for the Sites which is not included in this periodic review (Arcadis 2014).

Touchstone is expected to achieve soil cleanup levels within the North Yard property by January 2015. Excavation of the North Yard is expected to remove the vast majority of remaining

contaminated source material from the Site. These results will be added to the Site webpage once soil results are reviewed and approved by Ecology.

The Metro/Chevron periodic review shows that cleanup action is ongoing for the remainder of this Site including:

A. Conduct quarterly gauging and removal of floating product called LNAPL.
B. Conduct active remediation at MW-9 location and compliance monitoring.
C. Conduct additional investigation at B-12, B-14, B-23, MW-22, and AGI-2 locations and if above cleanup level then conduct active remediation to remove contamination.
D. Conduct compliance monitoring at specific South Yard soil locations to confirm soil and groundwater have achieved cleanup levels.
E. Conduct compliance groundwater monitoring for five consecutive events to confirm that Site cleanup levels have been achieved and sustained.

This work is anticipated to be completed in 2014-2015 and compliance monitoring will extend into 2015-2017. After two years (five events) of compliance monitoring, Ecology will re-evaluate whether future monitoring is required.

When the cleanup work is completed, Ecology will conduct the next periodic review. The next periodic review will occur on or before 2019.

3.1 Effectiveness of Completed Cleanup Actions

Metro/Chevron soils with TPH and lead concentrations exceeding MTCA cleanup levels may still be present at specific locations (Ecology 2010). Metro/Chevron are re-sampling these locations to confirm that the cleanup action has been achieved at each location. However, groundwater compliance monitoring in 2013 show all compliance wells are below cleanup levels except for arsenic at three locations. Compliance monitoring is scheduled to continue through 2017 followed by Ecology re-evaluation.

The Site Restrictive Covenant (RC) was recorded in 2002. The purpose of the RC is to ensure that any contamination remaining on Site is contained and controlled. The Restrictive Covenant prohibits activities that would result in a possible release of contaminants at the Site without Ecology's approval, and prohibits any use of the property that is inconsistent with the Covenant. The Covenant thus serves to ensure the long term integrity of the remedy and ongoing cleanup action. After Metro and Chevron complete their cleanup actions and compliance monitoring, Ecology will review the Restrictive Covenant to determine if it needs to be amended, and for further discussion about RC, see Appendix C.

Current Site conditions and the selected remedy prevent human exposure to the remaining contamination by ingestion and direct contact with soils and groundwater. Based upon the Site visit conducted on May 19, 2014, the buildings and asphalt cover at North Yard and R-O-W, and buildings and gravel cover at South Yard continue to eliminate exposure to contaminated soils by

ingestion and contact. The covers appear in satisfactory condition and no repair, maintenance, or contingency actions are required at this time. The North Yard is currently used as a parking and storage facility with preparations for the Touchstone NLU cleanup and development to begin in July 2014. The R-O-W asphalt cover (road and trail paving) is in good condition, and current use and traffic continue, including the Burke-Gilman biking and pedestrian trail. At the South Yard, the Center for Wooden Boats holds a 5-year lease and they continue their routine activities. The South Yard gate is locked and public access is limited by appointment only. A current Site photo log is provided in Appendix D.

3.2 New scientific information for individual hazardous substances for mixtures present at the Site

There is no new and applicable scientific information for the contaminants related to the Site.

3.3 New applicable state and federal laws for hazardous substances present at the Site

The cleanup at the Site is governed by Chapter 173-340 WAC (1996 ed.). WAC 173-340-702(12) (c) [2001 ed.] and 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."

Although cleanup levels changed for petroleum hydrocarbon compounds as a result of modifications to MTCA in 2001, these changes do not affect the cleanup levels in the Metro/Chevron CD. Some contamination remains at the Site above MTCA cleanup levels at this time. The cleanup actions to be performed pursuant to the Touchstone PPCD in 2014-2015 and the Metro/Chevron CD in 2014- 2017 are expected to meet the Site MTCA cleanup levels.

3.4 Current and projected Site use

The Site is currently used for commercial and industrial purposes. There have been no changes in current or projected future Site or resource uses.

3.5 Availability and practicability of higher preference technologies

The remedy implemented continues to be protective of human health and the environment. While higher preference cleanup technologies may be available, they remain impracticable 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 action were capable of detection below selected Site cleanup levels. The presence of improved analytical techniques would not affect decisions or recommendations made for the Site.

4.0 CONCLUSIONS

The following conclusions have been made as a result of this periodic review:

- The cleanup actions completed at the Site to date and to be completed in 2014 -15 appear to be protective of human health and the environment.
- The cleanup actions required by the Consent Decree have been achieved and continued cleanup actions at specific location with compliance monitoring will be completed in 2015 for North Yard; and estimated to be completed in 2017 for the Metro/Chevron Site.
- Ecology is scheduled to review the Restrictive Covenant with Metro, Chevron and Touchstone in early 2015, and again in 2017. The Restrictive Covenant continues to be effective in protecting public health and the environment from exposure to hazardous substances and protecting the integrity of the cleanup action.
- After completion of the Touchstone NLU PPCD in 2015, and completion of the Metro/Chevron CD in approximately 2017, the Restrictive Covenant will be reviewed and revised as appropriate.

Based on this periodic review, the Department of Ecology has determined that this Site is in compliance with the MTCA requirements. The Site Restrictive Covenant is to continue until completion of the Touchstone PPCD and then to be re-evaluated. No additional cleanup actions are required by the property owners other than those cleanup actions already scheduled and to be reviewed and approved by Ecology. It is the responsibility of the property owners to continue to inspect the Site to assure that the integrity of the cleanup remedies 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 July 2019. 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.

Compliance monitoring will be scheduled in early 2019 with the next periodic review in 2019.

REFERENCES

Applied Geotechnology Inc. (AGI), 1993, [Draft] Remedial Investigation/Feasibility Study for Facilities North Site, Seattle, WA dated November 5, 1993.

Applied Geotechnology Inc. (AGI), 2000, Cleanup Action Report Shallow Soils Remediation Phase 1 Completion at Facilities North Site, Seattle, WA dated January 19, 2000.

Arcadis, 2013, Groundwater Monitoring Report for Former Chevron Bulk Plant No. 100-1327, Facilities North Site, King County Metro dated June 11, 2013.

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Figures

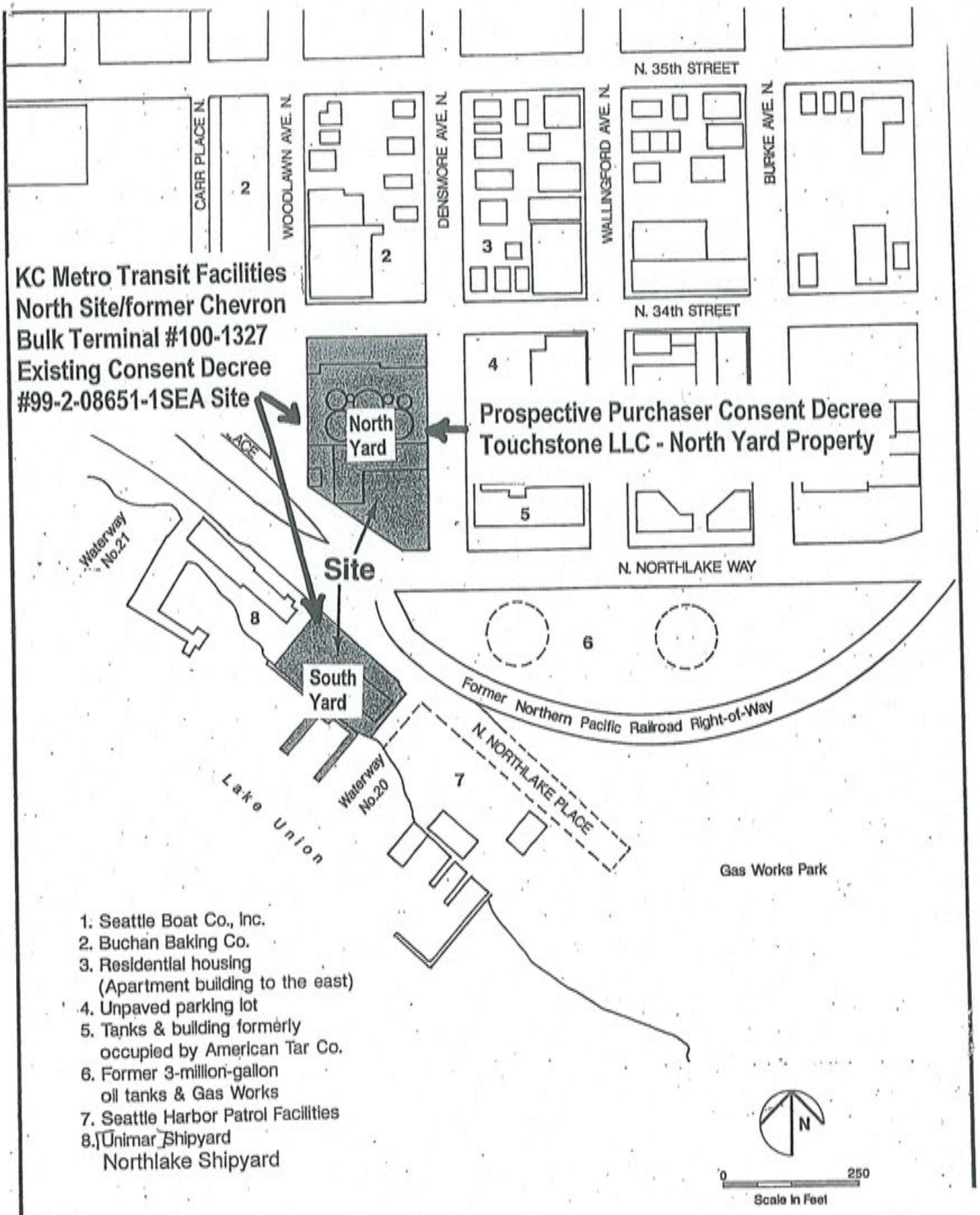


Fig. 1

Applied Geotechnology Inc.
Geotechnical Engineering
Geology & Hydrogeology

Site & Surrounding Area Ma

Metro/Facilities North
Seattle, Washington

JOB NUMBER	DRAWN	APPROVED	DATE	REVISED
14,309.108	DFF		5 Nov. 93	

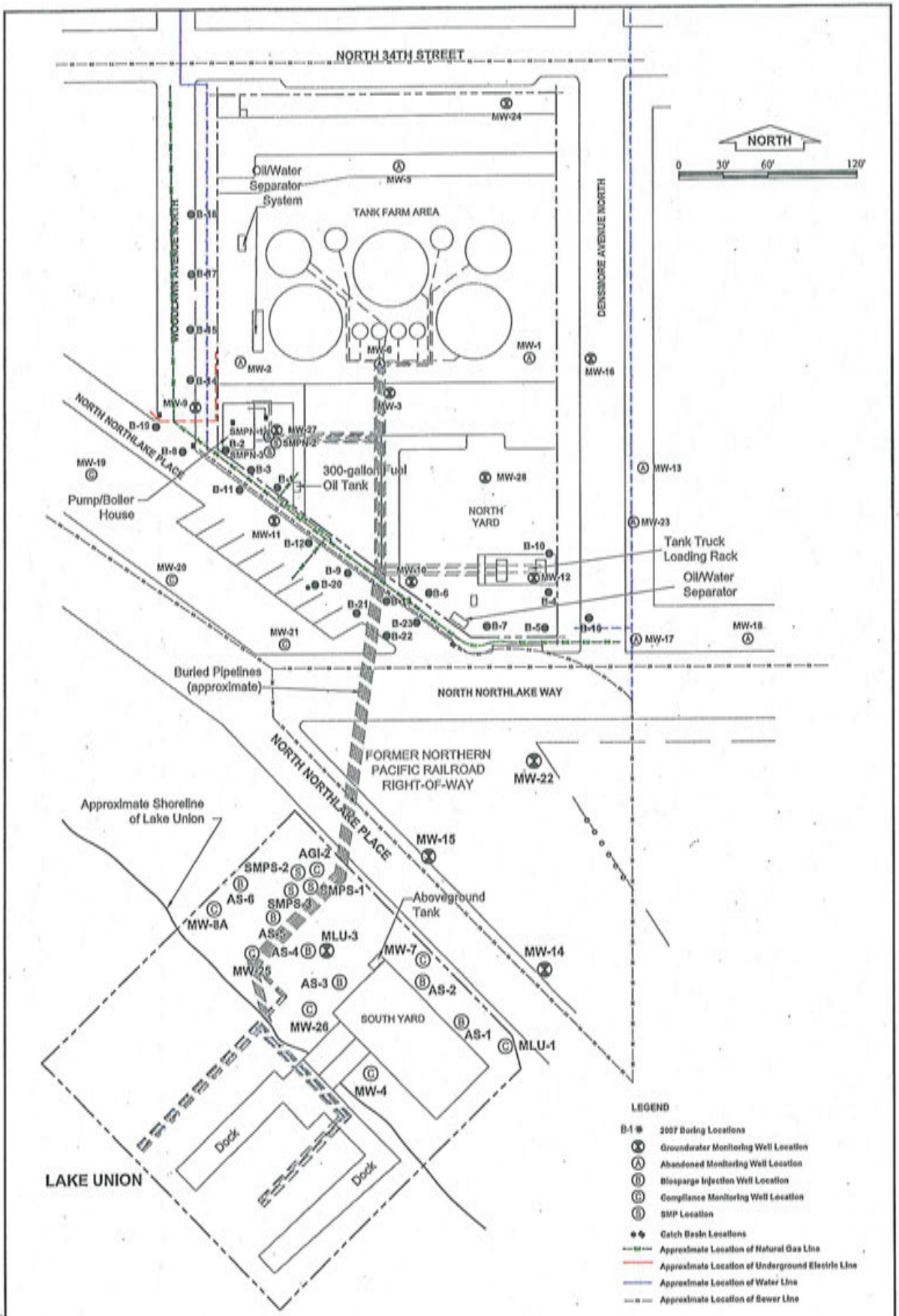


Fig. 2.

SAIC From Science to Solutions®

Chevron

FORMER CHEVRON BULK PLANT
NO. 100-1327
FACILITIES NORTH / KING COUNTY
(METRO)
SEATTLE, WASHINGTON

FILE NAME: 1001327_2007GW.dwg

DATE: 03/14/07

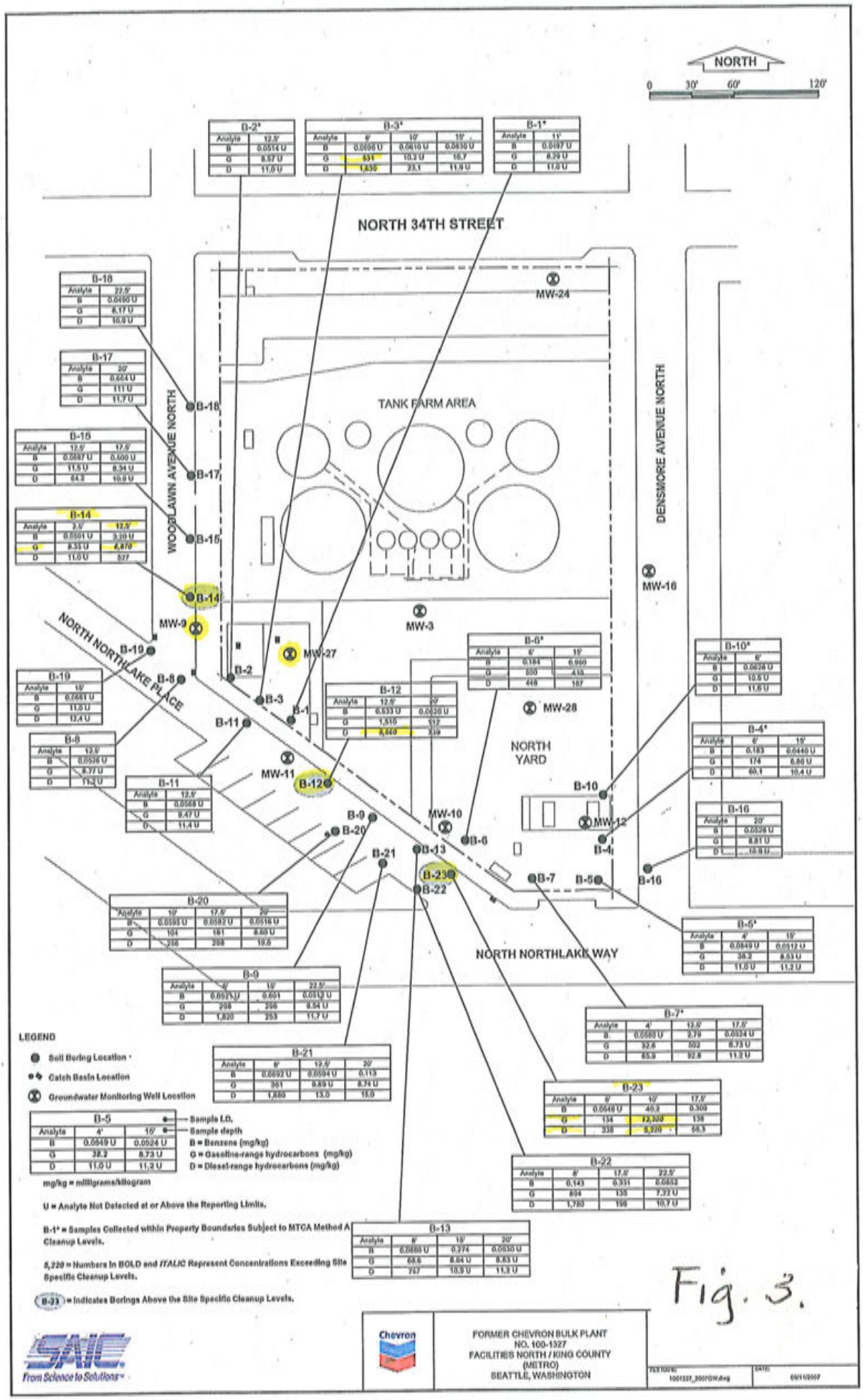

NORTH
0
30'
60'
120'
NORTH 34TH STREET
TANK FARM AREA
WOODLAWN AVENUE NORTH
DENSMORE AVENUE NORTH
NORTH NORTHLAKE PLACE
NORTH NORTHLAKE WAY
NORTH YARD
MW-24
MW-16
MW-3
MW-9
MW-27
MW-28
MW-11
MW-12
MW-10
B-18
B-17
B-15
B-14
B-19
B-8
B-2
B-3
B-1
B-11
B-12
B-6
B-10
B-4
B-16
B-9
B-20
B-21
B-13
B-23
B-22
B-7
B-5
B-2*
B-3*
B-1*
B-18
B-17
B-15
B-14
B-19
B-8
B-11
B-12
B-6*
B-10*
B-4*
B-16
B-20
B-9
B-21
B-23
B-7*
B-5*
B-22
B-13
LEGEND
Soil Boring Location
Catch Basin Location
Groundwater Monitoring Well Location
B-5
Analyte 4' 15'
B 0.0649 U 0.0524 U
G 38.2 8.73 U
D 11.0 U 11.2 U
Sample I.D.
Sample depth
B = Benzene (mg/kg)
G = Gasoline-range hydrocarbons (mg/kg)
D = Diesel-range hydrocarbons (mg/kg)
mg/kg = milligrams/kilogram
U = Analyte Not Detected at or Above the Reporting Limits.
B-1* = Samples Collected within Property Boundaries Subject to MTCA Method A Cleanup Levels.
5,220 = Numbers in BOLD and ITALIC Represent Concentrations Exceeding Site Specific Cleanup Levels.
B-23 = Indicates Borings Above the Site Specific Cleanup Levels.
SAIC
From Science to Solutions
Chevron
FORMER CHEVRON BULK PLANT
NO. 100-1327
FACILITIES NORTH / KING COUNTY
(METRO)
SEATTLE, WASHINGTON

Fig. 3.

MW-19	
DATE	4/24/2013
B	ND < 0.5
T	ND < 0.5
E	ND < 0.5
N	ND < 0.030
D-As	0.42
D-Pb	0.13

MW-20	
DATE	4/23/2013
B	ND < 0.5
T	ND < 0.5
E	ND < 0.5
N	0.039
D-As	1.4
D-Pb	ND < 0.073

MW-21	
DATE	4/23/2013
B	11
T	0.8
E	0.9
N	0.64
D-As	11.6
D-Pb	ND < 0.047

MW-8A	
DATE	4/23/2013
B	ND < 0.5
T	ND < 0.5
E	ND < 0.5
N	ND < 0.030
D-As	ND < 0.40
D-Pb	ND < 0.047

AGI-2	
DATE	4/23/2013
B	5.1 / [4.2]
T	1.1 / [1.4]
E	5.9 / [3.9]
N	0.63 / [0.60]
D-As	10.9 / [11.6]
D-Pb	ND < 0.073 / [ND < 0.047]

MW-25	
DATE	4/22/2013
B	ND < 0.5
T	ND < 0.5
E	ND < 0.5
N	ND < 0.031
D-As	0.90
D-Pb	ND < 0.073

MW-26	
DATE	4/22/2013
B	ND < 0.5
T	ND < 0.5
E	ND < 0.5
N	ND < 0.031
D-As	ND < 0.42
D-Pb	ND < 0.073

MW-4	
DATE	4/22/2013
B	ND < 0.5
T	ND < 0.5
E	ND < 0.5
N	ND < 0.030
D-As	ND < 0.40
D-Pb	0.050

MW-7	
DATE	4/22/2013
B	31
T	4.5
E	82
N	340
D-As	5.3
D-Pb	0.85

MLU-1	
DATE	4/22/2013
B	ND < 0.5
T	ND < 0.5
E	ND < 0.5
N	ND < 0.030
D-As	ND < 0.40
D-Pb	0.097

LEGEND:

- GROUNDWATER MONITORING WELL
- BIOSPARGE INJECTION WELL
- COMPLIANCE MONITORING WELL
- SMP LOCATION
- CATCH BASIN
- (18.80) GROUNDWATER ELEVATION IN FEET
- 18.80 GROUNDWATER ELEVATION CONTOUR IN FEET ABOVE MSL (DASHED WHERE INFERRED)
- DIRECTION OF GROUNDWATER FLOW
- ND NOT DETECTED, VALUE SHOWN IS DETECTION LIMIT
- MSL MEAN SEA LEVEL
- LNAPL LIGHT NON-AQUEOUS PHASE LIQUID

MLU-1	
B	BENZENE (μg/L)
T	TOLUENE (μg/L)
E	ETHYLBENZENE (μg/L)
N	NAPHTHALENE (μg/L)
D-As	DISSOLVED ARSENIC (μg/L)
D-Pb	DISSOLVED LEAD (μg/L)

NOTES:

1. BASE MAP FROM A DRAWING BY SAIC TITLED "SITE MAP", DATED 09-14-07, @ A SCALE OF 1" = 60'. REVISED IN ACCORDANCE WITH A SURVEY DRAWING BY OTAK CONDUCTED IN APRIL & MAY, 2011.
2. ALL LOCATIONS OTHER THAN MONITORING WELLS ARE APPROXIMATE.
3. ALL GROUNDWATER ELEVATIONS ARE FROM APRIL 22, 2013.

0 100' 200'

GRAPHIC SCALE

FORMER CHEVRON BULK PLANT No. 100-1327
FACILITIES NORTH / KING COUNTY (METRO)
SEATTLE, WASHINGTON
GROUNDWATER MONITORING REPORT

POTENTIOMETRIC MAP WITH ANALYTICAL RESULTS APRIL 22, 23, 24, 2013

ARCADIS

Fig. 2

LEGEND:

- GROUNDWATER MONITORING WELL
- BIOSPARGE INJECTION WELL
- COMPLIANCE MONITORING WELL
- SMP LOCATION
- CATCH BASIN
- ND — NOT DETECTED, VALUE SHOWN IS DETECTION LIMIT
- (D) — DUPLICATE SAMPLE
- (F) — FIELD–FILTERED SAMPLE

SAMPLE ID	
DATE	Sample Collection Date
B(a)A	Benzo (a) anthracene (µg/L)
B(a)P	Benzo (a) pyrene (µg/L)
B(b)F	Benzo (b) fluoranthene (µg/L)
B(k)F	Benzo (k) fluoranthene (µg/L)
Chrysene	Chrysene (µg/L)
D(a,h)A	Dibenz (a,h) anthracene (µg/L)
I(1,2,3–c,d)P	Indeno (1,2,3–c,d) pyrene (µg/L)
(D)	Duplicate Sample
(F)	Field–filtered Sample

NOTES:

1. BASE MAP FROM A DRAWING BY SAIC TITLED "SITE MAP", DATED 09–14–07, @ A SCALE OF 1" = 60'. REVISED IN ACCORDANCE WITH A SURVEY DRAWING BY OTAK CONDUCTED IN APRIL & MAY, 2011.
2. ALL LOCATIONS OTHER THAN MONITORING WELLS ARE APPROXIMATE.

0 100' 200'
GRAPHIC SCALE

MW–19		
DATE	4/24/2013	4/24/2013
B(a)A	ND < 0.010	ND < 0.010 (F)
B(a)P	ND < 0.010	ND < 0.010 (F)
B(b)F	ND < 0.010	ND < 0.010 (F)
B(k)F	ND < 0.010	ND < 0.010 (F)
Chrysene	ND < 0.010	ND < 0.010 (F)
D(a,h)A	ND < 0.010	ND < 0.010 (F)
I(1,2,3–c,d)P	ND < 0.010	ND < 0.010 (F)

MW–20		
DATE	4/24/2013	4/24/2013
B(a)A	ND < 0.010	ND < 0.010 (F)
B(a)P	ND < 0.010	ND < 0.010 (F)
B(b)F	ND < 0.010	ND < 0.010 (F)
B(k)F	ND < 0.010	ND < 0.010 (F)
Chrysene	ND < 0.010	ND < 0.010 (F)
D(a,h)A	ND < 0.010	ND < 0.010 (F)
I(1,2,3–c,d)P	ND < 0.010	ND < 0.010 (F)

MW–21		
DATE	4/23/2013	4/23/2013
B(a)A	ND < 0.010	ND < 0.010 (F)
B(a)P	ND < 0.010	ND < 0.010 (F)
B(b)F	ND < 0.010	ND < 0.010 (F)
B(k)F	ND < 0.010	ND < 0.010 (F)
Chrysene	ND < 0.010	ND < 0.010 (F)
D(a,h)A	ND < 0.010	ND < 0.010 (F)
I(1,2,3–c,d)P	ND < 0.010	ND < 0.010 (F)

MW–8A		
DATE	4/23/2013	4/23/2013
B(a)A	ND < 0.010	ND < 0.010 (F)
B(a)P	ND < 0.010	ND < 0.010 (F)
B(b)F	ND < 0.010	ND < 0.010 (F)
B(k)F	ND < 0.010	ND < 0.010 (F)
Chrysene	ND < 0.010	ND < 0.010 (F)
D(a,h)A	ND < 0.010	ND < 0.010 (F)
I(1,2,3–c,d)P	ND < 0.010	ND < 0.010 (F)

AGI–2				
DATE	4/23/2013	4/23/2013		
B(a)A	0.015	0.015 (D)	ND < 0.010 (F)	ND < 0.010 (D,F)
B(a)P	ND < 0.010	ND < 0.010 (D)	ND < 0.010 (F)	ND < 0.010 (D,F)
B(b)F	ND < 0.010	ND < 0.010 (D)	ND < 0.010 (F)	ND < 0.010 (D,F)
B(k)F	ND < 0.010	ND < 0.010 (D)	ND < 0.010 (F)	ND < 0.010 (D,F)
Chrysene	0.015	0.013 (D)	ND < 0.010 (F)	ND < 0.010 (D,F)
D(a,h)A	ND < 0.010	ND < 0.010 (D)	ND < 0.010 (F)	ND < 0.010 (D,F)
I(1,2,3–c,d)P	ND < 0.010	ND < 0.010 (D)	ND < 0.010 (F)	ND < 0.010 (D,F)

MW–25		
DATE	4/22/2013	4/22/2013
B(a)A	ND < 0.010	ND < 0.010 (F)
B(a)P	ND < 0.010	ND < 0.010 (F)
B(b)F	ND < 0.010	ND < 0.010 (F)
B(k)F	ND < 0.010	ND < 0.010 (F)
Chrysene	ND < 0.010	ND < 0.010 (F)
D(a,h)A	ND < 0.010	ND < 0.010 (F)
I(1,2,3–c,d)P	ND < 0.010	ND < 0.010 (F)

MW–26		
DATE	4/22/2013	4/22/2013
B(a)A	ND < 0.010	ND < 0.010 (F)
B(a)P	ND < 0.010	ND < 0.010 (F)
B(b)F	ND < 0.010	ND < 0.010 (F)
B(k)F	ND < 0.010	ND < 0.010 (F)
Chrysene	ND < 0.010	ND < 0.010 (F)
D(a,h)A	ND < 0.010	ND < 0.010 (F)
I(1,2,3–c,d)P	ND < 0.010	ND < 0.010 (F)

MW–4		
DATE	4/22/2013	4/22/2013
B(a)A	ND < 0.010	ND < 0.010 (F)
B(a)P	ND < 0.010	ND < 0.010 (F)
B(b)F	ND < 0.010	ND < 0.010 (F)
B(k)F	ND < 0.010	ND < 0.010 (F)
Chrysene	ND < 0.010	ND < 0.010 (F)
D(a,h)A	ND < 0.010	ND < 0.010 (F)
I(1,2,3–c,d)P	ND < 0.010	ND < 0.010 (F)

MLU–1		
DATE	4/22/2013	4/22/2013
B(a)A	ND < 0.010	ND < 0.010 (F)
B(a)P	ND < 0.010	ND < 0.010 (F)
B(b)F	ND < 0.010	ND < 0.010 (F)
B(k)F	ND < 0.010	ND < 0.010 (F)
Chrysene	ND < 0.010	ND < 0.010 (F)
D(a,h)A	ND < 0.010	ND < 0.010 (F)
I(1,2,3–c,d)P	ND < 0.010	ND < 0.010 (F)

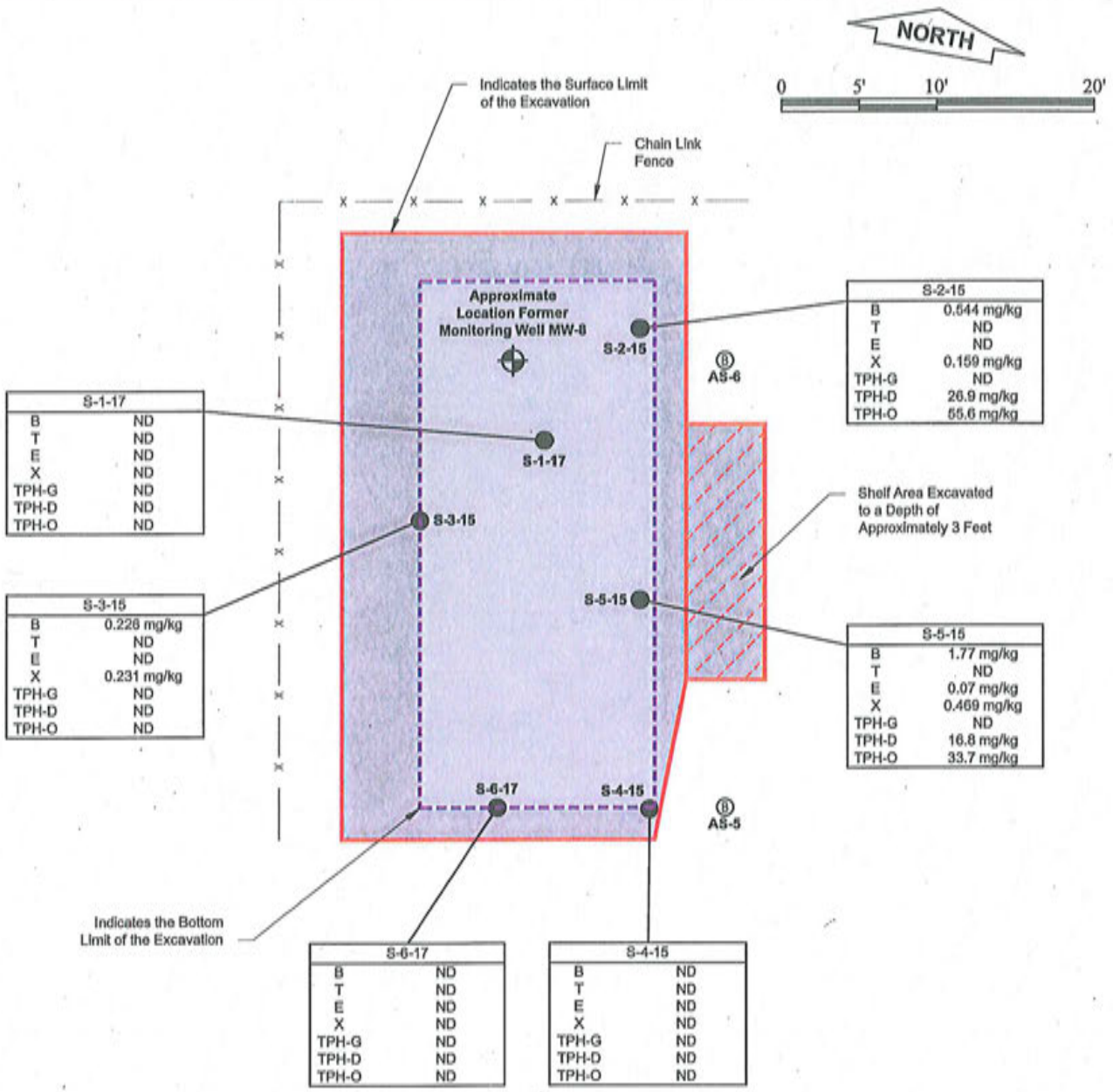
MW–7		
DATE	4/22/2013	4/22/2013
B(a)A	0.019	ND < 0.010 (F)
B(a)P	ND < 0.010	ND < 0.010 (F)
B(b)F	0.011	ND < 0.010 (F)
B(k)F	ND < 0.010	ND < 0.010 (F)
Chrysene	ND < 0.010	ND < 0.010 (F)
D(a,h)A	0.012	ND < 0.010 (F)
I(1,2,3–c,d)P	0.016	ND < 0.010 (F)

FORMER CHEVRON BULK PLANT No. 100-1327
FACILITIES NORTH / KING COUNTY (METRO)
SEATTLE, WASHINGTON
GROUNDWATER MONITORING REPORT

cPAH ANALYTICAL RESULTS
APRIL 22, 23, 24, 2013

ARCADIS

Fig.



NOTES

1. Sampling Results for PAHs and Metals Not Shown
2. Final Extent of Excavation = 38 ft. X 22 ft. X 15-17 ft. Deep
3. General Geology of the Site:

   Soil Horizon - 1 ft. bgs, Silty Sand to 15 ft. bgs, Sand (Poorly Graded) to 17 ft. bgs

LEGEND

- Soil Sample Location
- Biosparge Injection Well Location

Soil Sample Data with Concentrations in mg/kg, ND = Not Detected

Soil Sample Identification	S-1-17	
Benzene	B	ND
Toluene	T	ND
Ethyl-Benzene	E	ND
Xylene	X	ND
Total Petroleum Hydrocarbons-Gasoline	TPH-G	ND
Total Petroleum Hydrocarbons-Diesel	TPH-D	ND
Total Petroleum Hydrocarbons-Oil	TPH-O	ND

ChevronTexaco

SAIC

MW-8 Test Pit Excavation Sample Location Map

Former Chevron Bulk Plant 100-Facilities North/King County (M Seattle, Washington

Date: December 08, 2003

FIGURE 6.

11/06/2003
Revised By Eric Long, Drawn by Lori Trickett-Van Brenk
Path: Bothell\168--2k\N:/ChevronTexaco/O'Regan Portfolio/100--1327 Metro/100132?SeattleFigSetNov.dwg Figure 3

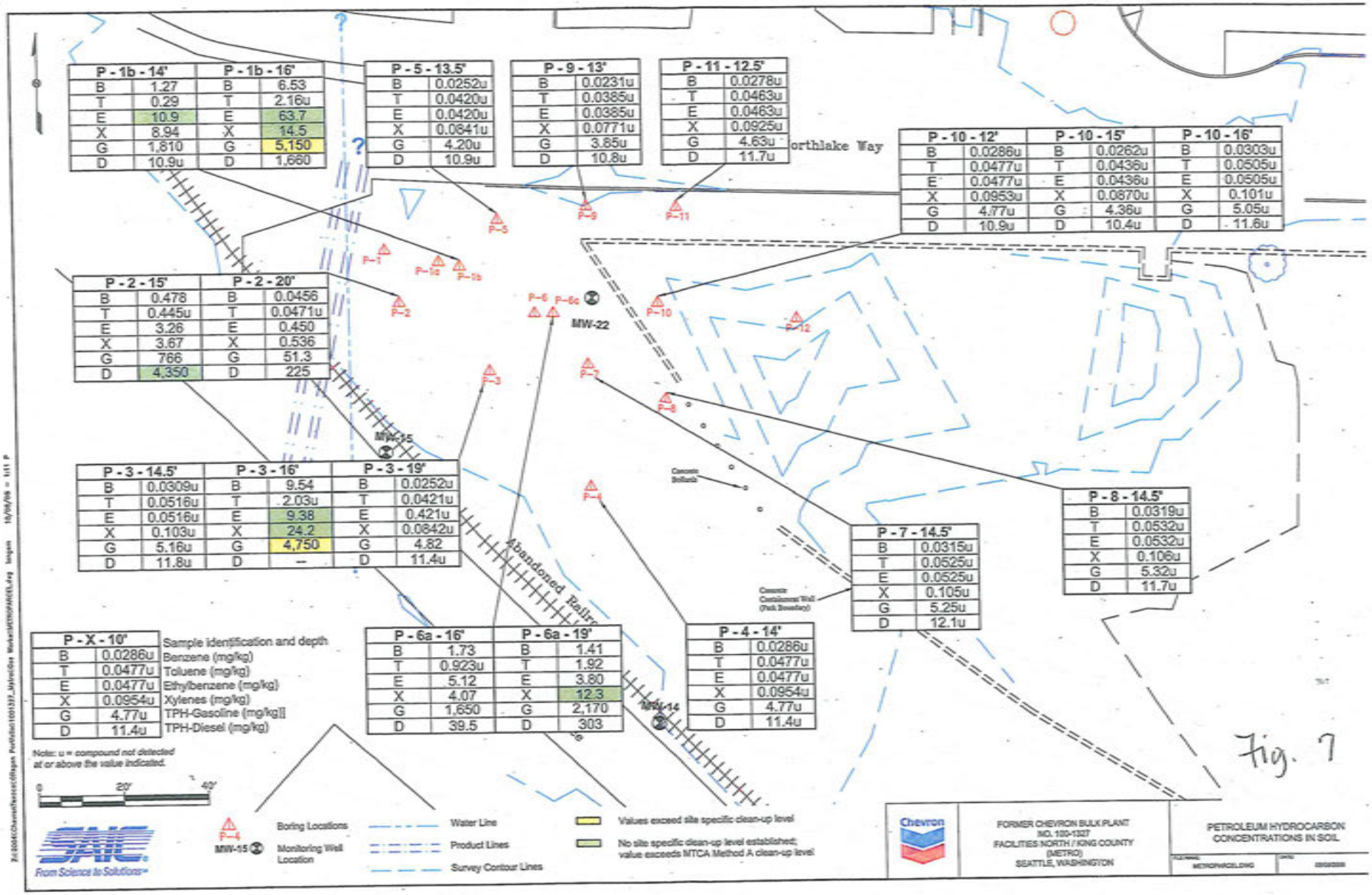

P - 1b - 14'
B 1.27
T 0.29
E 10.9
X 8.94
G 1,810
D 10.9u
P - 1b - 16'
B 6.53
T 2.16u
E 63.7
X 14.5
G 5,150
D 1,660
P - 5 - 13.5'
B 0.0252u
T 0.0420u
E 0.0420u
X 0.0841u
G 4.20u
D 10.9u
P - 9 - 13'
B 0.0231u
T 0.0385u
E 0.0385u
X 0.0771u
G 3.85u
D 10.8u
P - 11 - 12.5'
B 0.0278u
T 0.0463u
E 0.0463u
X 0.0925u
G 4.63u
D 11.7u
P - 10 - 12'
B 0.0286u
T 0.0477u
E 0.0477u
X 0.0953u
G 4.77u
D 10.9u
P - 10 - 15'
B 0.0262u
T 0.0436u
E 0.0436u
X 0.0870u
G 4.36u
D 10.4u
P - 10 - 16'
B 0.0303u
T 0.0505u
E 0.0505u
X 0.101u
G 5.05u
D 11.6u
P - 2 - 15'
B 0.478
T 0.445u
E 3.26
X 3.67
G 766
D 4,350
P - 2 - 20'
B 0.0456
T 0.0471u
E 0.450
X 0.536
G 51.3
D 225
P - 3 - 14.5'
B 0.0309u
T 0.0516u
E 0.0516u
X 0.103u
G 5.16u
D 11.8u
P - 3 - 16'
B 9.54
T 2.03u
E 9.38
X 24.2
G 4,750
D –
P - 3 - 19'
B 0.0252u
T 0.0421u
E 0.421u
X 0.0842u
G 4.82
D 11.4u
P - 8 - 14.5'
B 0.0319u
T 0.0532u
E 0.0532u
X 0.106u
G 5.32u
D 11.7u
P - 7 - 14.5'
B 0.0315u
T 0.0525u
E 0.0525u
X 0.105u
G 5.25u
D 12.1u
P - 6a - 16'
B 1.73
T 0.923u
E 5.12
X 4.07
G 1,650
D 39.5
P - 6a - 19'
B 1.41
T 1.92
E 3.80
X 12.3
G 2,170
D 303
P - 4 - 14'
B 0.0286u
T 0.0477u
E 0.0477u
X 0.0954u
G 4.77u
D 11.4u
P - X - 10'
B 0.0286u
T 0.0477u
E 0.0477u
X 0.0954u
G 4.77u
D 11.4u
Sample identification and depth
Benzene (mg/kg)
Toluene (mg/kg)
Ethylbenzene (mg/kg)
Xylenes (mg/kg)
TPH-Gasoline (mg/kg)
TPH-Diesel (mg/kg)
Note: u = compound not detected at or above the value indicated.
0
20'
40'
Boring Locations
Monitoring Well Location
Water Line
Product Lines
Survey Contour Lines
Values exceed site specific clean-up level
No site specific clean-up level established; value exceeds MTCA Method A clean-up level
MW-22
MW-15
MW-14
Abandoned Railroad
Concrete Bollard
Concrete Containment Wall (Park Boundary)
SAIC
From Science to Solutions™
Chevron
FORMER CHEVRON BULK PLANT
NO. 100-1327
FACILITIES NORTH / KING COUNTY
(METRO)
SEATTLE, WASHINGTON
PETROLEUM HYDROCARBON CONCENTRATIONS IN SOIL

Fig. 7

Table 1.

PROPOSED CLEANUP LEVELS - FACILITIES NORTH SITE
FORMER CHEVRON BULK FUELING 100-1327 AND CURRENT
KING COUNTY (METRO) FACILITIES NORTH, SEATTLE, WASHINGTON

Chemical of Concern	Soil	Units
TPH-Gasoline	4520	mg/kg
TPH-Diesel	5140	mg/kg
TPH-Oil	5780	mg/kg
Benzene	4530	mg/kg
Benzo(a)pyrene	18	mg/kg
Chrysene	18	mg/kg
Dibenzo(a,h)anthracene	18	mg/kg
Indeno(1,2,3-cd)pyrene	18	mg/kg
Benzo(k)fluoranthene	18	mg/kg
Benzo(a)anthrance	18	mg/kg
Benzo(b)fluoranthene	18	mg/kg
Fluoranthene	18	mg/kg
Napthalene	18	mg/kg
Arsenic	200	mg/kg
Cadmium	10	mg/kg
Chromium	500	mg/kg
Lead	1000	mg/kg
Mercury	1	mg/kg

Chemical of Concern	Ground Water	Units
Benzene	43	ug/L
Ethylbenzene	6910	ug/L
Toluene	48500	ug/L
Benzo(a)pyrene	0.0296	ug/L
Chrysene	0.0296	ug/L
Dibenzo(a,h)anthracene	0.0296	ug/L
Indeno(1,2,3-cd)pyrene	0.0296	ug/L
Benzo(k)fluoranthene	0.0296	ug/L
Benzo(a)anthrance	0.0296	ug/L
Benzo(b)fluoranthene	0.0296	ug/L
Fluoranthene	90.2	ug/L
Napthalene	9880	ug/L
Arsenic	0.0982	ug/L
Lead	5	ug/L

Note: If COCs (metals) in soil or COCs in groundwater are found during remediation then MTCA Method A Industrial Soil Cleanup Levels and MTCA Method B Surface Water Cleanup Levels will be used, respectively.

Table 2.

Chevron/Metro Lake Union Soil Concentrations Exceeding Proposed Cleanup Action Levels

	Survey	Date	Sample	Analyte	Concentration	Units	Soil Cleanup Levels	Units
	Envi, 1992	06/1992	WYTP4C	Diesel	6800	mg/kg	5140	mg/kg
	Envi, 1992	06/1992	WYTP3C	Gasoline	8100	mg/kg	4520	mg/kg
North Yard								
	AGI, 1993	08/1993	HB02-0.1	Arsenic	3000	mg/kg	200	mg/kg
	AGI, 1993	08/1993	HB03-0.1	Arsenic	3000	mg/kg	200	mg/kg
	AGI, 1993	08/1993	HB04-0.1	Arsenic	2500	mg/kg	200	mg/kg
	AGI, 1993	08/1993	HB04-0.1 Dup	Arsenic	600	mg/kg	200	mg/kg
	AGI, 1993	08/1993	HS1	Diesel	14000	mg/kg	5140	mg/kg
	AGI, 1993	08/1993	HS2	Diesel	14000	mg/kg	5140	mg/kg
	AGI, 1993	08/1993	HS5	Diesel	7700	mg/kg	5140	mg/kg
	AGI, 1993	08/1993	MW06-17	Diesel	11000	mg/kg	5140	mg/kg
	AGI, 1993	08/1993	MW06-5	Diesel	8000	mg/kg	5140	mg/kg
	AGI, 1993	08/1993	MW10-11	Gasoline	6700	mg/kg	4520	mg/kg
	AGI, 1993	08/1993	HB01-0.2	Lead	3900	mg/kg	1000	mg/kg
	AGI, 1993	08/1993	HB02-0.1	Lead	7200	mg/kg	1000	mg/kg
	AGI, 1993	08/1993	HB03-0.1	Lead	6400	mg/kg	1000	mg/kg
	AGI, 1993	08/1993	HB04-0.1	Lead	5300	mg/kg	1000	mg/kg
	AGI, 1993	08/1993	HB04-0.1 Dup	Lead	2000	mg/kg	1000	mg/kg
	AGI, 1993	08/1993	HB01-0.2	Mercury	1.5	mg/kg	1	mg/kg
	AGI, 1993	08/1993	HB02-0.1	Mercury	3.3	mg/kg	1	mg/kg
	AGI, 1993	08/1993	HB03-0.1	Mercury	7.6	mg/kg	1	mg/kg
	AGI, 1993	08/1993	HB04-0.1	Mercury	12	mg/kg	1	mg/kg
	AGI, 1993	08/1993	HB04-0.1 Dup	Mercury	24	mg/kg	1	mg/kg
Off-Site								
	AGI, 1993	08/1993	SB8-12.5	Diesel	16000	mg/kg	5140	mg/kg

Table 2.

Chevron/Metro Lake Union Soil Concentrations Exceeding Proposed Cleanup Action Levels

	Survey	Date	Sample	Analyte	Concentration	Units	Soil Cleanup Levels	Units
South Yard	AGI, 1993	08/1993	SB8-12.5	Gasoline	7600	mg/kg	4520	mg/kg
	AGI, 1993	08/1993	HB08-1.0	Diesel	7500	mg/kg	5140	mg/kg
	AGI, 1993	08/1993	HS4	Diesel	15000	mg/kg	5140	mg/kg
	AGI, 1993	08/1993	AGI2-12.5	Gasoline	5500	mg/kg	4520	mg/kg
	AGI, 1993	08/1993	HB07-0.4	Lead	1300	mg/kg	1000	mg/kg

Table 3.

Chevron/Metro Lake Union Groundwater Concentrations Exceeding Proposed Cleanup Levels (Post 1995)

	Survey	Date	Sample	Analyte	Concentration	Units	Groundwater Cleanup Levels	Units
	FWEC, 1998	07/1998	MW-10	Benzene	347	ug/l	43	ug/l
	FWEC, 1998	07/1998	MW-12	Benzene	1700	ug/l	43	ug/l
	FWEC, 1998	07/1998	MW-3	Benzene	116	ug/l	43	ug/l
	FWEC, 1998	07/1998	MW-10	Bis (2-Ethylhexyl) Phthalate	279	ug/l	3.56	ug/l
	FWEC, 1998	07/1998	MW-12	Bis (2-Ethylhexyl) Phthalate	478	ug/l	3.56	ug/l
	FWEC, 1998	07/1998	MW-3	Bis (2-Ethylhexyl) Phthalate	530	ug/l	3.56	ug/l
	FWEC, 1998	07/1998	MW-9	Bis (2-Ethylhexyl) Phthalate	234	ug/l	3.56	ug/l
North Yard								
	AGI, 1996	12/1996	MW-10	Benzene	890	ug/l	43	ug/l
	AGI, 1996	12/1996	MW-10 Dup	Benzene	960	ug/l	43	ug/l
	PEG, 1998	02/1998	MLU-1	Bis (2-Ethylhexyl) Phthalate	106	ug/l	3.56	ug/l
	AGI, 1996	12/1996	MW-10	Lead	13	ug/l	5	ug/l
	AGI, 1996	12/1996	MW-10	Lead	5.3	ug/l	5	ug/l
	AGI, 1996	12/1996	MW-10 Dup	Lead	9.1	ug/l	5	ug/l
	AGI, 1996	12/1996	MW-10 Dup	Lead	5.5	ug/l	5	ug/l
Off-Site								
	AGI, 1996	12/1996	MW-9	Arsenic	11	ug/l	0.0982	ug/l
	AGI, 1996	12/1996	MW-9	Arsenic	13	ug/l	0.0982	ug/l
	PEG, 1998	02/1998	MW-15	Benzene	104	ug/l	43	ug/l
	PEG, 1997	07/1997	MW-20	Benzene	112	ug/l	43	ug/l
	PEG, 1997	07/1997	MW-20 Dup	Benzene	100	ug/l	43	ug/l
	PEG, 1997	07/1997	MW-22	Benzene	169	ug/l	43	ug/l
	PEG, 1998	02/1998	MW-22	Benzene	873	ug/l	43	ug/l
	PEG, 1997	07/1997	MW-22	Bis (2-Ethylhexyl) Phthalate	20.9	ug/l	3.56	ug/l
	AGI, 1996	12/1996	MW-13	Ethylbenzene	11000	ug/l	6910	ug/l
	PEG, 1997	07/1997	MW-13	Ethylbenzene	10800	ug/l	6910	ug/l
	PEG, 1998	02/1998	MW-13	Ethylbenzene	14100	ug/l	6910	ug/l

Table 3.

Chevron/Metro Lake Union Groundwater Concentrations Exceeding Proposed Cleanup Levels (Post 1995)

	Survey	Date	Sample	Analyte	Concentration	Units	Groundwater Cleanup Levels	Units
South Yard	AGI, 1996	12/1996	MW-9	Lead	16	ug/l	5	ug/l
	AGI, 1996	12/1996	MW-8	Arsenic	8.4	ug/l	0.0982	ug/l
	AGI, 1996	12/1996	MW-8	Arsenic	7.8	ug/l	0.0982	ug/l
	AGI, 1996	12/1996	MW-8 Dup	Arsenic	8.1	ug/l	0.0982	ug/l
	AGI, 1996	12/1996	MW-8 Dup	Arsenic	8.9	ug/l	0.0982	ug/l
	AGI, 1997	07/1997	MW-7	Benzene	2060	ug/l	43	ug/l
	PEG, 1998	02/1998	MW-7	Benzene	1310	ug/l	43	ug/l
	PEG, 1998	02/1998	MW-7	Benzene	1290	ug/l	43	ug/l
	AGI, 1996	12/1996	MW-8	Benzene	1200	ug/l	43	ug/l
	PEG, 1997	07/1997	MW-8	Benzene	524	ug/l	43	ug/l
	PEG, 1998	02/1998	MW-8	Benzene	131	ug/l	43	ug/l
	PEG, 1998	02/1998	MW-8	Benzene	239	ug/l	43	ug/l
	AGI, 1996	12/1996	MW-8 Dup	Benzene	1200	ug/l	43	ug/l
	PEG, 1998	02/1998	MW-7	Benzo(a)anthracene	1.25	ug/l	0.0296	ug/l
	PEG, 1998	02/1998	MW-7	Benzo(a)anthracene	0.123	ug/l	0.0296	ug/l
	PEG, 1998	02/1998	MW-7	Benzo(a)pyrene	0.238	ug/l	0.0296	ug/l
	PEG, 1998	02/1998	MW-4	Bis (2-Ethylhexyl) Phthalate	26.9	ug/l	3.56	ug/l
	PEG, 1998	02/1998	MW-7	Bis (2-Ethylhexyl) Phthalate	377	ug/l	3.56	ug/l
	PEG, 1998	02/1998	MW-8	Bis (2-Ethylhexyl) Phthalate	45.2	ug/l	3.56	ug/l
	AGI, 1996	12/1996	MW-4	Lead	99	ug/l	5	ug/l

Appendix A.

King County Department of Transportation
Metro Transit Division Facilities North Site and
Former Chevron Products Company
Bulk Terminal # 100-1327

Consent Decree

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IN THE SUPERIOR COURT OF THE STATE OF WASHINGTON
IN AND FOR KING COUNTY

99-2-08651-1SEA

STATE OF WASHINGTON, DEPARTMENT OF ECOLOGY, Plaintiff, v. KING COUNTY and CHEVRON PRODUCTS COMPANY, a division of Chevron U.S.A. Inc., a Pennsylvania Corp. Respondent.	NO. COMPLAINT

Plaintiff, Washington State Department of Ecology ("Ecology"), alleges as follows:

I. DESCRIPTION OF ACTION

1. This action is brought on behalf of the Washington State Department of Ecology, to enter a settlement agreement in the form of a Consent Decree ("Consent Decree") for the performance of remedial actions at a facility where there have been releases and/or threatened releases of hazardous substances.

2. The "Property", or "Site", that is the subject of this action is located along the north shore of Lake Union at 1602 N. Northlake Place, Seattle, Washington, and has been known as the Metro Lake Union Site or Chevron Facility #100-1327. The Site is more particularly described in Attachment B of the Consent Decree that is being submitted to settle this action.

II. JURISDICTION

3. This Court has jurisdiction under RCW 70.105D.050(5)(b), the Model Toxics Control Act ("MTCA"), over the subject matter and over the parties. Venue is properly laid in King County, the location of the Property at issue.

4. Authority is conferred upon the Washington State Attorney General by RCW 70.105.D.040(4) to agree to a settlement with any potentially liable person if, after public notice

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and hearing, Ecology finds the proposed settlement would lead to a more expeditious cleanup of hazardous substances in compliance with cleanup standards under RCW 70.105D.030(2)(e). Under RCW 70.105D.040(4)(b), such a settlement must be entered as a Consent Decree issued by a court of competent jurisdiction.

5. Ecology has determined that a release or threatened release of a hazardous substance has occurred at the Property.

6. Ecology has given notice to King County and Chevron Products Company as provided in RCW 70.105D.020(16), of Ecology's determination that they are potentially liable persons for the Property and that there has been a release and/or threatened release of hazardous substances at the Property.

III. PARTIES

7. Plaintiff Ecology is an agency of the State of Washington responsible for overseeing remedial action at sites contaminated with hazardous substances under RCW 70.105D.

8. Defendants refers to Chevron Products Company and King County.

IV. FACTUAL ALLEGATIONS

9. The Site is owned by King County and is more fully described in Attachment B of the Consent Decree that is being submitted to settle this action.

10. Chevron, and its predecessor, Standard Oil of California, owned and operated the Site as a bulk fueling facility from 1925 until 1982. The Municipality of Metropolitan Seattle, predecessor in interest to King County, purchased the Site in 1982 and continued to operate the site as a bulk fueling facility until 1989. The tanks and piping were flushed and capped by April 1992. The facility is now used as a maintenance base by King County.

11. There has been a release of hazardous substances at the Site.

V. CAUSES OF ACTION

12. Plaintiff realleges paragraphs 1 through 11, above.

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13. Ecology further alleges that the Defendants are responsible for performing remedial actions at the facility pursuant to RCW 70.105D and Chapter 173-340 WAC.

14. Ecology and the Defendants have entered into a Consent Decree requiring remedial actions at the facility, and Ecology will move for entry of that Consent Decree as a basis for settling this action.

VI. PRAYER FOR RELIEF

WHEREAS Ecology, King County and Chevron have voluntarily entered into a proposed Consent Decree, Ecology hereby requests that the Court, pursuant to RCW 70.105D.040, approve and order the entry of the proposed Consent Decree. Ecology further requests that the Court retain jurisdiction to enforce the terms of the Consent Decree.

Respectfully submitted this 24th day of March, 1999.

CHRISTINE O. GREGOIRE
Attorney General

THOMAS C. MORRILL, WSBA #18388
Assistant Attorney General
Attorneys for Plaintiff

State of Washington
Department of Ecology
(360) 459-6159

F:\MORRILL\METRO\COMPLAINT

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IN AND FOR KING COUNTY

99-2-08651-1SEA

STATE OF WASHINGTON, DEPARTMENT OF ECOLOGY,

Plaintiff,

v.

KING COUNTY and CHEVRON PRODUCTS COMPANY, a Division of Chevron U.S.A. Inc., a Pennsylvania Corp.,

Respondent.

NO.

DECLARATION OF THOMAS C. MORRILL

I, Thomas C. Morrill, declare under penalty of perjury under the laws of the State of Washington that the following is true and correct.

1. I am over twenty-one years of age and am competent to testify herein. The facts set forth in this Declaration are from my personal knowledge.

2. I am an Assistant Attorney General assigned to represent the Washington State Department of Ecology and the Attorney General's Office on legal matters relating to the site in Seattle, Washington referred to as the Metro Lake Union Site.

3. On behalf of Ecology and the Attorney General's Office, I took part in the negotiations that led to the Consent Decree that is being presented to the Court.

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4. The Consent Decree was the subject of public notice and public comment as required by RCW 70.105D.040(4)(a). Ecology also conducted a public hearing as required by WAC 173-340-600(9)(d).

5. Ecology received five written comments during the public comment period on the substance of the Consent Decree. Ecology considered the comments and determined that no changes were necessary based on the comments.

6. No changes were made to the Consent Decree following the public comment period, and thus Ecology has determined that additional public comment under WAC 173-340-600(9)(e) is not required.

7. Ecology has determined that the proposed remedial action will lead to a more expeditious cleanup of hazardous substances in compliance with cleanup standards under RCW 70.105D.030(2)(e).

I declare under penalty of perjury of the laws of the state of Washington that the foregoing is true and correct.

DATED this 24th day of March, 1999.

Thomas C. Morrill

THOMAS C. MORRILL

ATTORNEY GENERAL OF WASHINGTON
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IN AND FOR KING COUNTY

STATE OF WASHINGTON, DEPARTMENT OF ECOLOGY, Plaintiff, v. KING COUNTY and CHEVRON PRODUCTS COMPANY, a division of Chevron U.S.A. Inc., a Pennsylvania Corp. Respondent.	NO. 99-2-08651-1SEA **DECLARATION OF MAURA S. O'BRIEN**

I, Maura S. O'Brien declare under penalty of perjury under the laws of the State of Washington that the following is true and correct.

1. I am over twenty-one years of age and am competent to testify herein. The facts set forth in this Declaration are from my personal knowledge.

2. I am employed as a Site Project Manager at the Washington State Department of Ecology. I am the site manager and am knowledgeable on matters relating to the site in Seattle, Washington referred to as the Metro Lake Union Site.

3. On behalf of Ecology, I took part in the negotiations that led to the Consent Decree that is being presented to the Court.

4. The Consent Decree was the subject of public notice and public comment as required by RCW 70.105D.040(4)(a). Ecology also conducted a public hearing as required by WAC 173-340-600(9)(d).

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5. Ecology received 5 written comments during the public comment period on the substance of the Consent Decree. Ecology considered the comments and determined that no changes were necessary based on the comments.

6. As the site manager, I supervised the public notice and comment. No changes were made in the Work Plan following public notice and comment.

7. WAC 173-340-600(9)(e) provides:

> Revisions. If the state and the potentially liable person agree to substantial changes to the proposed Consent Decree, the department shall provide additional public notice and opportunity to comment.

8. Ecology has determined that no additional public comment under WAC 173-340-600(9)(e) is required.

9. Ecology has determined that the proposed remedial action will lead to a more expeditious cleanup of hazardous substances in compliance with cleanup standards under RCW 70.105D.030(2)(e).

I declare under penalty of perjury of the laws of the State of Washington that the foregoing is true and correct.

DATED this 2nd day of March, 1999.

Maura S. O'Brien

MAURA S. O'BRIEN
State of Washington
Department of Ecology

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IN AND FOR KING COUNTY

STATE OF WASHINGTON,
DEPARTMENT OF ECOLOGY,

Plaintiff,

v.

KING COUNTY and CHEVRON PRODUCTS COMPANY, a division of Chevron U.S.A. Inc., a Pennsylvania Corp.,

Respondent.

NO. 99-2-08651-1SEA

JOINT MOTION FOR ENTRY OF THE CONSENT DECREE AND MEMORANDUM IN SUPPORT OF MOTION

I. INTRODUCTION

Plaintiff Washington State Department of Ecology ("Ecology") and Defendants, King County and Chevron Products Company (jointly "The Parties") bring this motion seeking entry of the attached Consent Decree. This motion is based upon the pleadings filed in this matter, including the Declarations of Maura S. O'Brien and Thomas C. Morrill.

II. RELIEF REQUESTED

The Parties request that the Court approve and enter the attached Consent Decree which requires certain remedial actions at the Metro Lake Union Site in Seattle, King County, Washington. The Parties also request that the Court retain jurisdiction over this action until the work required by the Consent Decree is completed and the parties request a dismissal of this action.

III. AUTHORITY

RCW 70.105D.030 authorizes Ecology to issue such orders as may be necessary to effectuate the purposes of chapter 70.105D RCW and to enter into consent decrees through

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judicial proceedings. In addition, RCW 70.105D.040(4) authorizes the Attorney General to agree to a settlement with a potentially liable person and to request that the settlement be entered as a consent decree in the superior court of the county where a violation is alleged to have occurred.

IV. CONCLUSION

The Parties believe it is appropriate for the Court to exercise its judicial discretion and approve the attached Consent Decree, and hereby request that the Court enter the attached Order.

DATED this 24th day of March, 1999.

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Attorney General

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CHEVRON PRODUCTS COMPANY

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NORM MALING
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IN AND FOR KING COUNTY

99-2-08651-1SEA

STATE OF WASHINGTON, DEPARTMENT OF ECOLOGY, Plaintiff, v. KING COUNTY and CHEVRON PRODUCTS COMPANY, a division of Chevron U.S.A. Inc., a Pennsylvania Corp. Respondent.	NO. SUMMONS

To: King County and Chevron Products Company;

And To: The Clerk of the above-entitled Court:

A lawsuit has been started against you in the above-entitled Court by the State of Washington State Department of Ecology, Plaintiff. Plaintiff's claim is stated in the written Complaint, a copy of which is served upon you with this Summons.

The parties have agreed to resolve this matter by entry of a Consent Decree. Accordingly, this Summons shall not require the filing of an Answer.

Respectfully submitted this 27th day of March, 1999.

CHRISTINE O. GREGOIRE
Attorney General

Thomas C Morrill

THOMAS C. MORRILL, WSBA #18388
Assistant Attorney General
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Presented by:

CHRISTINE O. GREGOIRE
Attorney General

THOMAS C. MORRILL, WSBA #18388
Assistant Attorney General

Attorneys for Plaintiff
State of Washington
Department of Ecology

DATED: 3-30-99

CHEVRON PRODUCTS COMPANY

LYNN T. MANOLOPOULOS, WSBA #21069
Attorney for Defendant
Chevron Company

DATED: 4/2/99

NORM MALING
King County Prosecuting Attorney

CARL A. JOHANSEN, WSBA #1728
Senior Deputy Prosecuting Attorney
Civil Division
Attorney for Defendant King County

DATED: 4/6/99

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CONSENT DECREE

FORMER CHEVRON BULK TERMINAL #100-1327
FACILITIES NORTH/KING COUNTY METRO TRANSIT
LAKE UNION SITE

SEATTLE, WASHINGTON

November 24, 1998

I. INTRODUCTION

A. In entering into this Consent Decree (Decree), the mutual objective of the Washington State Department of Ecology (Ecology), and Chevron Products Company, a division of Chevron U.S.A. Inc. (Chevron) and King County (collectively Chevron and King County referred to as Defendants) is to provide for remedial action at a facility where there has been a release or threatened release of hazardous substances. This Decree requires the Defendants to undertake the remedial actions described in the Cleanup Action Plan attached hereto as Exhibit A. Ecology has determined that these actions are necessary to protect human health and the environment.

B. The Complaint in this action is being filed simultaneously with this Decree. An answer has not been filed, and there has not been a trial on any issue of fact or law in this case. However, the parties wish to resolve the issues raised by Ecology's complaint. In addition, the parties agree that settlement of these matters without litigation is reasonable and in the public interest and that entry of this Decree is the most appropriate means of resolving these matters.

C. In signing this Decree, Defendants agree to its entry and agree to be bound by its terms.

D. By entering into this Decree, the parties do not intend to discharge nonsettling parties from any liability they may have with respect to matters alleged in the Complaint. The parties retain the right to seek reimbursement, in whole or in part, from any liable persons for sums expended under this Decree.

E. This Decree shall not be construed as proof of liability or responsibility for any releases of hazardous substances or cost for remedial action nor an admission of any facts; provided, however, that the Defendants shall not challenge the jurisdiction of Ecology in any proceeding to enforce this Decree.

F. The Court is fully advised of the reasons for entry of this Decree, and good cause having been shown: IT IS HEREBY ORDERED, ADJUDGED, AND DECREED AS FOLLOWS:

II. JURISDICTION

A. This Court has jurisdiction over the subject matter and over the parties pursuant to Chapter 70.105D RCW, the Model Toxics Control Act (MTCA).

B. Authority is conferred upon the Washington State Attorney General by RCW 70.105D.040(4)(a) to agree to a settlement with any potentially liable person if, after public notice and public hearing, Ecology finds the proposed settlement would lead to a more expeditious cleanup of hazardous substances. RCW 70.105D.040(4)(b) requires that such a settlement be entered as a Consent Decree issued by a court of competent jurisdiction.

C. Ecology has determined that a release or threatened release of hazardous substances has occurred at the Site which is the subject of this Decree.

D. Ecology has given notice to Defendants, as set forth in RCW 70.105D.020(15), of Ecology's determination that the Defendants are potentially liable persons for the Site and that there has been a release or threatened release of hazardous substances at the Site.

E. The actions to be taken pursuant to this Decree are necessary to protect human health, welfare, and the environment.

F. Defendants have agreed to undertake the actions specified in this Decree and consent to the entry of this Decree under the MTCA.

III. PARTIES BOUND

This Decree shall apply to and be binding upon the signatories to this Decree (parties), their successors and assigns. The undersigned representative of each party hereby certifies that he or she is fully authorized to enter into this Decree and to execute and legally bind such party to comply with the Decree. Defendants agree to undertake all actions required by the terms and conditions of this Decree and not to contest state jurisdiction regarding this Decree. No change

in ownership, corporate status, or municipal status shall alter the responsibility of the Defendants under this Decree. Defendants shall make a copy of this Decree available to all agents and contractors retained to perform work required by this Decree and shall condition any contract for such work on compliance with the applicable terms of this Decree.

IV. DEFINITIONS

Except for as specified herein, all definitions in WAC 173.340-200 apply to the terms in this Decree.

A. Site: For purposes of this Decree, the Site, referred to as the Metro Lake Union Site located at 1602 N. Northlake Way, Seattle, Washington, including rights-of-way as appropriate, is more particularly described in Exhibit B to this Decree, which is a detailed site diagram.

B. Parties: Refers to the Washington State Department of Ecology, Chevron and King County.

C. Defendants: Refers collectively to Chevron and King County.

D. Consent Decree or Decree: Refers to this Consent Decree and each of the exhibits to the Decree. All exhibits are integral and enforceable parts of this Consent Decree and the terms "Consent Decree" or "Decree" shall include all Exhibits to the Consent Decree.

E. Days: Refers to calendar days, unless specified otherwise.

V. STATEMENT OF FACTS

Ecology makes the following finding of facts without any express or implied admissions by Defendants and without prejudice to Defendants' right to deny or otherwise challenge these findings of fact.

1. King County is the current owner and operator of the Site. Chevron, and its predecessor, Standard Oil of California, were a former owner and operator of the Site from approximately 1925 until 1982.

2. The Site is the location of a former bulk fuel storage and distribution facility.

3. Operation of the bulk fuel storage and distribution facility has resulted in the presence of hazardous substances, including petroleum hydrocarbons, volatile organic compounds, and metals in the soil and groundwater.

4. The concentrations of hazardous substances in the soil and groundwater exceed cleanup levels promulgated pursuant to the MTCA. The potential for hazardous substances to be present in the sediments in Lake Union and any cleanup thereof, if necessary, are not addressed in this Decree. Any future action concerning or related in any way to the sediments in Lake Union shall be addressed in a document other than this Decree, and this Decree shall not be amended or interpreted to address the sediments in Lake Union.

5. By letter dated December 29, 1988, Ecology notified the Municipality of Metropolitan Seattle (predecessor in interest to King County) that the Municipality was listed as an owner and/or operator of the Site that was potentially contaminated with hazardous substances and provided information Ecology had in its files regarding the site.

6. A Draft Remedial Investigation/Feasibility Study (RI/FS) dated November 1993 was prepared by Applied Geotechnology Inc. under contract issued by the Municipality of Metropolitan Seattle. Subsequent to the RI/FS, groundwater monitoring at the Site was undertaken in 1995 and 1997 by AGI Technologies (formerly known as Applied Geotechnology Inc.). The RI/FS and groundwater monitoring were conducted as independent remedial actions, and copies of all the reports related to such actions have been provided to Ecology.

7. By letters dated November 27, 1996, Ecology notified King County (successor in interest to the Municipality of Metropolitan Seattle) and Chevron that the Site was listed as a site known to be contaminated by hazardous substances, enclosed information Ecology believed reflected the status of the Site, and stated that if an independent cleanup action did not occur on the Site, Ecology would conduct a more detailed inspection at a future time and determine potentially liable person(s) responsible for cleanup costs.

Based on these facts, Ecology has determined that a release of hazardous substances at the Site requires remedial action to protect human health and the environment. This Decree sets forth the remedial measures necessary to clean up the Site in compliance with the MTCA.

VI. WORK TO BE PERFORMED

This Decree contains a program designed to protect human health, welfare and the environment from the known release, or threatened release, of hazardous substances or contaminants at, on, or from the Site.

1. King County agrees to perform the remedial actions described as Phase I in Sections 5.1.1.1, 5.2.1.1, 5.3.1.1, 6.2.1.1, and 6.3.1.1 of the Cleanup Action Plan attached hereto as Exhibit A.

2. Defendants agree to perform the remedial actions described as Phase II in Sections 5.1.1.2, 5.1.2, 5.2.1.2, 5.2.2, 5.3.1.2, 5.3.2, 6.2.1.2, 6.2.2, 6.3.1.2, and 6.3.2 of the Cleanup Action Plan attached hereto as Exhibit A.

3. Except for emergency situations, Defendants agree not to perform any remedial actions outside the scope of this Decree unless the parties agree to amend the scope of work to cover these actions. All work conducted under this Decree shall be done in accordance with Chapter 70.105D RCW and Chapter 173-340 WAC unless otherwise provided herein.

VII. GRANT FUNDING

Pursuant to RCW 70.105D.070(3)(a) and Ch. 173-322 WAC, Ecology has made the following determinations:

A. King County is a local government required, pursuant to this Decree, to undertake remedial action at the Site;

B. King County is prepared to proceed promptly to accomplish the remediation set forth in Exhibit A, and expenses incurred in implementing the Section VI Work to Be Performed hereunder are eligible for a local government grant; and

C. Implementation of this Decree will lead to a more expeditious cleanup of hazardous substances at the Site in compliance with the cleanup standards of RCW 70.105D.030(2) (d).

VIII. DESIGNATED PROJECT COORDINATORS

The project coordinator for Ecology is:

Maura S. O'Brien
Department of Ecology
3190 – 160th Avenue S.E.
Bellevue, WA 98008-5452
(425) 649-7249

The project coordinator for King County is:

Judy A. Riley
King County Department of Transportation
821 Second Avenue, MS 118
Seattle, WA 98104-1598
(206) 684-1401

The project coordinator for Chevron is:

Ann Marie Johnson
Chevron Products Company
6001 Bollinger Canyon Road
San Ramon, CA 94583-0904
(925) 842-9525

Each project coordinator shall be responsible for overseeing the implementation of this Decree. The Ecology project coordinator will be Ecology's designated representative at the Site. To the maximum extent possible, communications between Ecology and the Defendants and all documents, including reports, approvals, and other correspondence concerning the activities performed pursuant to the terms and conditions of this Decree, shall be directed through the project coordinators. The project coordinators may designate, in writing, working level staff contacts for all or portions of the implementation of the remedial work required by this Decree. The project coordinators may agree to minor modifications to the work to be performed without

formal amendments to this Decree. Minor modifications will be documented in writing by Ecology.

Any party may change its respective project coordinator. Written notification shall be given to the other parties at least ten (10) calendar days prior to the change.

IX. PERFORMANCE

All work performed pursuant to this Decree shall be under the direction and supervision, as necessary, of a professional engineer or hydrogeologist, or equivalent, with experience and expertise in hazardous substance site investigation and cleanup. Any construction work must be under the supervision of a professional engineer or a qualified technician under the direct supervision of a professional engineer.

X. ACCESS

Ecology or any Ecology authorized representatives shall have the authority to enter and freely move about all property at the Site at all reasonable times for the purposes of, inter alia: inspecting records and operation log related to the work being performed pursuant to this Decree; reviewing Defendants' progress in carrying out the terms of this Decree; conducting such tests or collecting such samples as Ecology may deem necessary; using a camera, sound recording, or other documentary type equipment to record work done pursuant to this Decree; and verifying the data submitted to Ecology by the Defendants. While Ecology reserves its right to enter and inspect as set forth in the previous sentence, Ecology shall make best efforts to provide Defendants with 48 hours advance notice prior to entering the Site. Ecology shall make the results of all sampling, laboratory reports, videos, and/or test results generated by it or on its behalf, collected for the purposes of this Decree, available to Defendants. All parties with access to the Site pursuant to this paragraph shall comply with approved health and safety plans.

XI. SAMPLING, DATA REPORTING, AND AVAILABILITY

With respect to the implementation of this Decree, Defendants shall make the results of all sampling, laboratory reports, and/or test results generated by it, or on its behalf available and shall submit these results in accordance with Section XII of this Decree.

In accordance with WAC 173-340-840(5), ground water sampling data shall be submitted according to Section XII. These submittals shall be provided to Ecology in accordance with Section XII of this Decree.

If requested by Ecology, Defendants shall allow split or duplicate samples to be taken by Ecology and/or its authorized representatives of any samples collected by Defendants pursuant to the implementation of this Decree. Defendants shall make best efforts to provide Ecology with notice at least five (5) days in advance of any sample collection activity at the Site. Defendants shall provide Ecology with reasonable notice of any emergency sampling at the Site. Ecology shall, upon request, allow split or duplicate samples to be taken by Defendants or their authorized representatives of any samples collected by Ecology pursuant to the implementation of this Decree provided it does not interfere with Ecology's sampling.

XII. PROGRESS REPORTS

Defendants shall submit to Ecology written progress reports on all even months (e.g., February, April, June, etc.) which reports shall describe the actions taken during the previous two months to implement the requirements of this Decree. The progress reports shall include the following:

A. A list of on-site activities that have taken place during the previous two months;

B. Detailed description of any deviations from required tasks not otherwise documented in project plans or amendment requests;

C. Description of all deviations from the schedule during the previous two months and any planned deviations in the upcoming two months;

D. For any deviations in schedule, a plan for recovering lost time and maintaining compliance with the schedule;

E. After quality assurance/quality control review is complete, all data (including laboratory analysis) will be reported and summarized, including hard copy and electronic copy and identification of the source of the sample.

F. A list of deliverables for the upcoming two months if different from the schedule.

All progress reports shall be submitted by the tenth day of the month in which they are due after the effective date of this Decree. Unless otherwise specified, progress reports and any other documents submitted pursuant to this Decree shall be sent by mail or by facsimile to Ecology's project coordinator.

XIII. RETENTION OF RECORDS

Defendants shall preserve, during the pendency of this Decree and for ten (10) years from the date the hydrogen peroxide injection system has been taken out of service, all records, reports, documents, and underlying data in their possession relevant to the implementation of this Decree. Upon request of Ecology, Defendants, shall make all records developed pursuant to this Decree and in their possession available to Ecology and allow access for review. All records, developed pursuant to this Decree and in Defendant's possession, shall be made available to Ecology within a reasonable period of time.

XIV. TRANSFER OF INTEREST IN PROPERTY

No voluntary conveyance of title, easement, leasehold, or other interest in any portion of the Site shall be consummated without provision for continued operation and maintenance of any containment system, treatment system, and monitoring system required pursuant to this Decree.

Prior to transfer of any legal or equitable interest in all or any portion of the property, and during the effective period of this Decree, Defendants shall serve a copy of this Decree upon any prospective purchaser, lessee, transferee, assignee, or other successor in interest of the property;

and, at least thirty (30) days prior to any transfer, Defendants shall notify Ecology of said contemplated transfer.

XV. LAND USE RESTRICTIONS

Defendants agree that the restrictive covenant, Exhibit C, shall be recorded with the office of the King County Auditor within 10 days of the entry of this Decree and shall restrict future uses of the Site. Defendants will provide a copy of the recorded, restrictive covenant witin thirty (30) days of the recording date.

XVI. RESOLUTION OF DISPUTES

A. In the event a dispute arises as to an approval, disapproval, proposed modification or other decision or action by Ecology's project coordinator, the parties shall utilize the dispute resolution procedure set forth below.

(1) Upon receipt of the Ecology project coordinator's decision, the Defendants have fourteen (14) days within which to notify Ecology's project coordinator of its objection to the decision.

(2) The parties' project coordinators and Ecology's project coordinator's supervisor shall then confer in an effort to resolve the dispute. If the project coordinators and Ecology's project coordinator's supervisor cannot resolve the dispute within fourteen (14) days, Ecology's project coordinator and his/her supervisor shall issue a written decision.

(3) Defendants may then request Ecology management review of the decision. This request shall be submitted in writing to the Toxics Cleanup Program Manager within seven (7) days of receipt of Ecology's project coordinator's and his/her supervisor's written decision.

(4) Ecology's Program Manager shall conduct a review of the dispute and shall issue a written decision regarding the dispute within thirty (30) days of the Defendants' request for review. The Program Manager's decision shall be Ecology's final decision on the disputed matter.

B. If Ecology's final written decision is unacceptable to a Defendant or if Ecology fails to issue a final decision within said thirty (30) day period, the Defendant has the right to submit the dispute to the Court for resolution. The parties agree that one judge should retain jurisdiction over this case and shall, as necessary, resolve any dispute arising under this Decree. In the event a Defendant presents an issue to the Court for review and the issue is related to any action or decision of Ecology within the scope of RCW 70.105D.060, the Court shall review the action or decision of Ecology on the basis of whether such action or decision was arbitrary and capricious and render a decision based on such standard of review. For all other actions or decisions of Ecology, the appropriate standard of review shall be determined by the Court.

C. The parties agree to only utilize the dispute resolution process in good faith and agree to expedite, to the extent possible, the dispute resolution process whenever it is used.

Unless delay of an activity poses an imminent and substantial threat to human health or the environment, all activities required in this Decree shall be stayed during the pendency of these dispute resolution procedures.

XVII. AMENDMENT OF CONSENT DECREE

A. Except as set forth in Paragraph C below, and minor modifications as set forth in Section VIII (Designation of Project Coordinators), this Decree may only be amended by a written stipulation among the parties to this Decree that is entered by the Court or by order of the Court. Such amendment shall become effective upon entry by the Court. Agreement to amend shall not be unreasonably withheld by any party to the Decree.

B. Defendants shall submit any request for an amendment to Ecology for approval. Ecology shall indicate its approval or disapproval in a timely manner after the request for amendment is received, but no longer than thirty (30) days after receipt of the request. If the amendment to the Decree is substantial, Ecology will provide public notice and opportunity for comment. Reasons for the disapproval shall be stated in writing. If Ecology does not

agree to any proposed amendment, the disagreement may be addressed through the dispute resolution procedures described in Section XVI of this Decree.

C. Written stipulation by the parties is not needed for schedule extensions granted pursuant to Section XVIII of this Decree.

XVIII. EXTENSION OF SCHEDULE

A. Except for minor modifications as set forth in Section VII (Designation of Project Coordinators), an extension of schedule shall be granted only when a request for an extension is submitted in a timely fashion, generally at least fifteen (15) days prior to expiration of the deadline for which the extension is requested, and good cause exists for granting the extension. All extensions shall be requested in writing. The request shall specify the reason(s) the extension is needed.

An extension shall only be granted for such period of time as is reasonable under the circumstances. A requested extension shall not be effective until approved by Ecology or the Court. Ecology shall act upon any written request for extension in a timely fashion and, to the extent possible, within seven (7) days of the request. It shall not be necessary to formally amend this Decree pursuant to Section XVII when a schedule extension is granted.

B. The burden shall be on the Defendants to demonstrate to the satisfaction of Ecology that the request for such extension has been submitted in a timely fashion and that good cause exists for granting the extension. Good cause includes, but is not limited to, the following.

(1) Circumstances beyond the reasonable control and despite the due diligence of Defendants including delays caused by unrelated third parties or Ecology, such as (but not limited to) delays by Ecology in reviewing, approving, or modifying documents submitted by Defendants; or

(2) Acts of God, including fire, flood, blizzard, extreme temperatures, storm, or other unavoidable casualty;

(3) Delays resulting from changes in permit terms or refusal to grant a permit needed to implement the requirements of the this Decree, provided the Defendants filed a timely application for the permit;

(4) Judicial review of the issuance, non-issuance, or reissuance of a permit necessary for the continuation of work;

(5) Other circumstances deemed in written notice by Ecology to be exceptional, extraordinary, or otherwise necessary to protect the environment or public interest; or

(6) Endangerment as described in Section XIX.

However, neither increased costs of performance of the terms of the Decree nor changed economic circumstances shall be considered circumstances beyond the reasonable control of Defendants.

C. Ecology may extend the schedule for a period not to exceed ninety (90) days, except where longer extension is needed as a result of:

(1) Delays in the issuance of a necessary permit which was applied for in a timely manner; or

(2) Other circumstances deemed exceptional or extraordinary by Ecology; or

(3) Endangerment as described in Section XIX.

Ecology shall give Defendants written notification in a timely fashion of any extensions granted pursuant to this Decree.

XIX. ENDANGERMENT

In the event Ecology determines that activities implementing or in noncompliance with this Decree, or any other circumstances or activities, are creating or have the potential to create a danger to the health or welfare of the people on the Site or in the surrounding area or to the environment, Ecology may order Defendants to stop further implementation of this Decree for such period of time as needed to abate the danger or may petition the Court for an order as appropriate. During any stoppage of work under this Section, the obligations of Defendants with

respect to the work under this Decree which is ordered to be stopped shall be suspended and the time periods for performance of that work, as well as the time period for any other work dependent upon the work which is stopped, shall be extended, pursuant to Section XVIII of this Decree, for such period of time as Ecology determines is reasonable under the circumstances.

In the event Defendants determine that activities undertaken in furtherance of this Decree or any other circumstances or activities are creating an endangerment to the people on the Site or in the surrounding area or to the environment, Defendants may stop implementation of this Decree for such period of time necessary for Ecology to evaluate the situation and determine whether Defendants should proceed with implementation of the Decree or whether the work stoppage should be continued until the danger is abated. Defendants shall notify Ecology's project coordinator as soon as possible, but no later than twenty-four (24) hours after such stoppage of work, and thereafter provide Ecology with documentation of the basis for the work stoppage. If Ecology disagrees with the Defendants' determination, it may order Defendants to resume implementation of this Decree. If Ecology concurs with the work stoppage, the Defendants' obligations shall be suspended and the time period for performance of that work, as well as the time period for any other work dependent upon the work which was stopped, shall be extended, pursuant to Section XVIII of this Decree, for such period of time as Ecology determines is reasonable under the circumstances. Any disagreements pursuant to the clause shall be resolved through the dispute resolution procedures in Section XVI.

XX. INDEMNIFICATION

A. Defendants agree to indemnify and save and hold the State of Washington, its employees, and agents harmless from any and all claims or causes of action for death or injuries to persons or for loss or damage to property arising from or on account of acts or omissions of Defendants, their officers, employees, agents, or contractors in implementing this Decree. However, the Defendants shall not indemnify the State of Washington nor save nor hold its employees and agents harmless from any claims or causes of action arising out of the intentional

or negligent acts or omissions of the State of Washington, or the employees or agents of the State, in implementing the activities pursuant to this Decree.

B. To the extent permitted by law, Ecology agrees to indemnify and save and hold the Defendants, their agents and employees harmless from any and all claims or causes of action for death or injuries to persons or for loss or damage to property arising from or on account of acts or omissions of Ecology, its employees, agents, or contractors in implementing this Decree. However, Ecology shall not indemnify the Defendants nor save nor hold their employees and agents harmless from any claims or causes of action arising out of the intentional or negligent acts or omissions of the Defendants, or the employees or agents of the Defendants, in implementing the activities pursuant to this Decree.

XXI. COMPLIANCE WITH APPLICABLE LAWS

A. All actions carried out by Defendants pursuant to this Decree shall be done in accordance with all applicable federal, state, and local requirements, including requirements to obtain necessary permits, except as provided in Paragraph B of this Section.

B. Pursuant to RCW 70.105D.090(1), the substantive requirements of Chapters 70.94, 70.95, 70.105, 75.20, 90.48, and 90.58 RCW and of any laws requiring or authorizing local government permits or approvals for the remedial action under this Decree that are known to be applicable at the time of entry of the Decree have been included in Exhibit A, the Cleanup Action Plan, and are binding and enforceable requirements of the Decree.

Defendants have a continuing obligation to determine whether additional permits or approvals addressed in RCW 70.105D.090(1) would otherwise be required for the remedial action under this Decree. In the event either Defendants or Ecology determines that additional permits or approvals addressed in RCW 70.105D.090(1) would otherwise be required for the remedial action under this Decree, it shall promptly notify the other party of this determination. Ecology shall determine whether Ecology or Defendants shall be responsible to contact the appropriate state and/or local agencies. If Ecology so requires, Defendants shall promptly

consult with the appropriate state and/or local agencies and provide Ecology with written documentation from those agencies of the substantive requirements those agencies believe are applicable to the remedial action. Ecology shall make the final determination on the additional substantive requirements that must be met by Defendants and on how Defendants must meet those requirements. Ecology shall inform Defendants in writing of these requirements. Once established by Ecology, the additional requirements shall be enforceable requirements of this Decree. Defendants shall not begin or continue the remedial action potentially subject to the additional requirements until Ecology makes its final determination.

Ecology shall ensure that notice and opportunity for comment is provided to the public and appropriate agencies prior to establishing the substantive requirements under this Section.

C. Pursuant to RCW 70.105D.090(2), in the event Ecology determines that the exemption from complying with the procedural requirements of the laws referenced in RCW 70.105D.090(1) would result in the loss of approval from a federal agency which is necessary for the State to administer any federal law, the exemption shall not apply and the Defendants shall comply with both the procedural and substantive requirements of the laws referenced in RCW 70.105D.090(1), including any requirements to obtain permits. Ecology shall provide Defendants with written notice within fifteen (15) days of its determination.

XXII. REMEDIAL AND INVESTIGATIVE COSTS

The Defendants agree to pay costs incurred by Ecology pursuant to this Decree. These costs shall include work performed by Ecology or its contractors for, or on, the Site under Chapter 70.105D RCW subsequent to the issuance of this Decree for investigations, remedial actions, and Decree preparation, negotiations, oversight and administration. Ecology costs shall include costs of direct activities and support costs of direct activities as defined in WAC 173-340-550(2). The Defendants agree to pay the required amount within ninety (90) days of receiving from Ecology an itemized statement of costs that includes a summary of costs incurred, an identification of involved staff, and the amount of time spent by involved staff members on

the project. A general statement of work performed will be provided upon request. Itemized statements shall be prepared quarterly. Failure to pay Ecology's costs within ninety (90) days of receipt of the itemized statement will result in interest charges. Any dispute regarding Ecology's costs for the Site shall be subject to dispute resolution pursuant to Section XVI of this Decree.

XXIII. IMPLEMENTATION OF REMEDIAL ACTION

If Ecology determines that Defendants have failed without good cause to implement any material requirement of Section VI.2 of this Decree, Ecology may, after notice to Defendants, order Defendants to suspend implementation of this Decree. The parties shall then attempt in good faith to resolve any dispute pursuant to Section XVI (Resolution of Disputes). If the dispute remains unresolved and is submitted to court for resolution, Ecology may, after notice to Defendants, perform any or all portions of the work required under this Decree that remain incomplete. If Ecology performs all or portions of the remedial action, Defendants shall reimburse Ecology for the costs of doing work in accordance with Section XXII, provided that Defendants are not obligated under this Section to reimburse Ecology for costs incurred for work inconsistent with or beyond the scope of this Decree.

If Ecology determines that King County has failed without good cause to implement any material requirement of Section VI.1 of this Decree, Ecology may, after notice to King County, order King County to suspend implementation of this Decree. The parties shall then attempt in good faith to resolve any dispute pursuant to Section XVI (Resolution of Disputes). If the dispute remains unresolved and is submitted to court for resolution, Ecology may, after notice to King County, perform any or all portions of the work required under this Decree that remain incomplete. If Ecology performs all or portions of the remedial action, King County shall reimburse Ecology for the costs of doing work in accordance with Section XXII, provided that King County is not obligated under this Section to reimburse Ecology for costs incurred for work inconsistent with or beyond the scope of this Decree.

XXIV. PUBLIC PARTICIPATION

Ecology shall maintain the responsibility for public participation at the Site. However, Defendants shall cooperate with Ecology and, if agreed to by Ecology, shall:

A. Prepare drafts of public notices and fact sheets at important stages of the remedial action, such as the submission of work plans, and engineering design reports. Ecology will finalize (including editing if necessary) and distribute such fact sheets and prepare and distribute public notices of Ecology's presentations and meetings;

B. Notify Ecology's project coordinator prior to the preparation of all press releases and fact sheets, and at least five (5) days before major meetings with the interested public and local governments. Likewise, Ecology shall notify Defendants prior to the issuance of all press releases and fact sheets, and at least five (5) days before major meetings with the interested public and local governments;

C. Participate in public presentations on the progress of the remedial action at the Site. Participation may be through attendance at public meetings to assist in answering questions, or as a presenter;

D. In cooperation with Ecology, arrange and/or continue information repositories to be located at King County Metro Transit Library, 9th Floor, 821 Second Avenue, Seattle, and Ecology's Northwest Regional Office, 3190-160th Avenue SE, Bellevue. At a minimum, copies of all public notices, fact sheets, and press releases; all quality assured ground water, surface water, soil, and air monitoring data; remedial actions plans, supplemental remedial planning documents, and all other similar documents relating to performance of the remedial action required by this Decree shall be promptly placed in these repositories.

XXV. FIVE YEAR REVIEW

As remedial action, including ground water monitoring, continues at the Site, the parties agree to review the progress of remedial action at the Site, and to review the data accumulated as a result of Site monitoring as often as is necessary and appropriate under the circumstances. At

least every five years the parties shall meet to discuss the status of the Site and the need, if any, of further remedial action at the Site pursuant to WAC 173-340-420. This provision shall remain in effect for the duration of the Decree.

XXVI. DURATION OF DECREE

This Decree shall remain in effect and the remedial program described in the Decree shall be maintained and continued until the Defendants have received written notification from Ecology or the Court determines that the requirements of this Decree have been satisfactorily completed. Ecology shall issue a notice of completion when the requirements of this Decree have been satisfactorily completed.

XXVII. CLAIMS AGAINST THE STATE

Defendants hereby agree that they will not seek to recover any costs accrued in implementing the remedial action required by this Decree from the State of Washington or any of its agencies; and further, that the Defendants will make no claim against the State Toxics Control Account or any Local Toxics Control Account for any costs incurred in implementing this Decree. Except as provided above, however, Defendants expressly reserve their right to seek to recover any costs incurred in implementing this Decree from any other potentially liable person not a party to this Decree.

Nothing in this Decree shall impair King County's right to obtain grant funding from the Local Toxics Control Account under RCW 70.105D.070(3) and Ch. 173-322 WAC for any eligible portion of the work required by this Decree. The submission of an application for such grant funding shall not be deemed to be the filing of a "claim" for the purposes of this Section.

XXVIII. COVENANT NOT TO SUE

Ecology has determined that the requirements set forth under this Decree are protective of human health and the environment and that compliance with this Decree fully satisfies Defendant's obligations under RCW 70.105D for the type and location of contamination covered by this Decree. Therefore, in consideration of Defendants' compliance with the terms and

conditions of this Decree, Ecology covenants not to institute legal or administrative actions against Defendants regarding the type and location of contamination covered by this Decree unless confirmational monitoring indicates that additional remedial actions are necessary at the Site to attain the MTCA cleanup standards identified in the Cleanup Action Plan. Until cleanup standards identified in the Cleanup Action Plan are met at the Site, compliance with this Decree shall satisfy Defendants' cleanup obligations for the release or threatened release of hazardous substances covered by the terms of this Decree.

The terms and application of this Covenant Not to Sue are strictly limited to the contamination identified in the RI/FS and Cleanup Action Plan and only to the identified contamination located within the Site. This Covenant Not To Sue does not apply to any contamination of sediments or water in Lake Union.

A. Reopeners: Ecology specifically reserves the right to institute legal or administrative action against Defendants seeking to require them to perform additional response actions at the Site, and to pursue appropriate cost recovery in accordance with provisions set out in RCW 70.105D.050, under the following circumstances:

(1) Upon Defendants failure to meet the requirements of this Decree, including, but not limited to, failure of the remedial action to meet the cleanup standards identified in the Cleanup Action Plan;

(2) Upon Ecology's determination that confirmation monitoring indicates that additional remedial actions are necessary to meet the cleanup standards identified in the Cleanup Action Plan;

(3) Upon Ecology's determination that action beyond the terms of this Decree is necessary to abate an imminent and substantial endangerment to public health or welfare or the environment;

(4) In the event new information becomes available regarding factors previously unknown to Ecology, including the nature or quantity of hazardous substances at the

Site, and Ecology determines, in light of this information, that further remedial action is necessary at the Site to protect human health or the environment, and Defendants after notice, fail to take the necessary action within a reasonable time.

B. Applicability: Any Covenant Not To Sue concerning work performed under this Consent Decree shall have no applicability whatsoever to:

(1) Criminal liability;

(2) Liability for damages to natural resources;

(3) Any Ecology action against potentially liable persons not a party to this Decree, including cost recovery.

XXIX. RESERVATION OF RIGHTS

The Defendants shall not be liable for claims of contribution by other persons not signatories to the Decree regarding matters addressed in this Decree. The percentage of response costs paid by Defendants under this Decree shall in no way constitute an admission as to an appropriate allocation of liability, if any, at the Site. This Section shall apply but is not limited to successors in interest who assume obligations under this Decree.

XXX. EFFECTIVE DATE

This Decree is effective upon the date it is entered by the Court.

XXXI. PUBLIC NOTICE AND WITHDRAWAL OF CONSENT

This Decree has been the subject of public notice and comment under RCW 70.105D.040(4)(a). As a result of this process, Ecology has found that this Decree will lead to a more expeditious cleanup of hazardous substances at the Site.

If the Court withholds or withdraws its consent to this Decree, it shall be null and void at the option of any party and the accompanying complaint shall be dismissed without costs and without prejudice. In such an event, no party shall be bound by the requirements of this Decree.

Signatures on next page.

JAMES J. PENDOWSKI
Toxics Cleanup Program

Date

Jeffrey W Hartwig
Chevron Products Company

11/20/98
Date

King County

Date

THIS DECREE is approved and IT IS SO ORDERED this _____ day of _____, 1998.

SUPERIOR COURT JUDGE
King County Superior Court

JAMES J. PENDOWSKI
Toxics Cleanup Program

Date

Chevron Products Company

Date

King County

11-20-98
Date

THIS DECREE is approved and IT IS SO ORDERED this _____ day of _____, 1998.

SUPERIOR COURT JUDGE
King County Superior Court

CONSENT DECREE

EXHIBIT A

FORMER CHEVRON BULK TERMINAL #100-1327
FACILITIES NORTH/KING COUNTY METRO TRANSIT
LAKE UNION SITE

SEATTLE, WASHINGTON

CLEANUP ACTION PLAN

Draft 11/24/98

Draft Cleanup Action Plan
Former Chevron Bulk Plant 100-1327
Facilities North/King County Metro Transit
Lake Union Site

Seattle, Washington

Prepared for

Chevron Products Company
and
King County Metro Transit

Prepared by

FOSTER WHEELER
FOSTER WHEELER ENVIRONMENTAL CORPORATION

November 24, 1998

Draft Cleanup Action Plan
Former Chevron Bulk Plant 100-1327
Facilities North/King County Metro Transit Lake Union Site

Seattle, Washington

Prepared for

Chevron Products Company
and
King County Metro Transit

November 24, 1998

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ACRONYMS AND ABBREVIATIONS

AGI	Associated Geotechnology, Inc.
ARARs	Applicable or Relevant and Appropriate Requirements
ASTs	aboveground storage tanks
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and xylene
CAP	Cleanup Action Plan
Chevron	Chevron Products Company
CLARC II	Cleanup Levels and Risk Calculations
COCs	chemicals of concern
Ecology	Washington State Department of Ecology
Foster Wheeler Environmental	Foster Wheeler Environmental Corporation
gpm	gallons per minute
IRIS	Integrated Risk Information System
KJC	Kennedy/Jenks/Chilton
LTTD	low temperature thermal desorption
Metro	King County Metro Transit
mg/kg	milligrams per kilogram
MTCA	Model Toxics Control Act
MW	Monitoring Well
PAHs	polynuclear aromatic hydrocarbons
PEG	Pacific Environmental Group
ppb	parts per billion
ppm	parts per million
RCRA	Resource Conservation and Recovery Act
RI/FS	remedial investigation/feasibility study
SAIC	Science Applications International Corporation
SEPA DNS	State Environmental Policy Act Determination of Non-significance
SHP	Seattle Harbor Patrol
Site	Facilities North Site
SPHs	separate phase hydrocarbons
STP	sewage treatment plant
TPH	total petroleum hydrocarbons
UST	underground storage tank
VES	soil vapor extraction
WAC	Washington Administrative Code
WTPH-D	diesel range petroleum hydrocarbon

EXECUTIVE SUMMARY

This Cleanup Action Plan (CAP) presents the proposed cleanup actions under the Model Toxics Control Act (MTCA) for the Former Chevron Bulk Terminal #100-1327 currently owned by King County Metro Transit (Metro) for the Facilities North Site (Site) located along the north shore of Lake Union in Seattle, Washington (Figure 1). The site totals approximately three acres and consists of the North and South Yards. At this time, Metro plans to retain ownership and does not plan to alter the current industrial-commercial use of the site.

A number of investigations have been conducted at the site. The most comprehensive investigation was the remedial investigation/feasibility (RI/FS) study conducted by Associated Geotechnology Inc. (AGI) under contract with Metro (AGI Draft RI/FS, 1993). The RI/FS characterized the nature and extent of specific chemical compounds in soil and groundwater resulting from activities at the site and developed and evaluated cleanup action alternatives. Supplemental investigations were conducted by AGI, Pacific Environmental Group (PEG) and Foster Wheeler Environmental Corporation (Foster Wheeler Environmental) to augment existing site data and to develop site-specific cleanup levels for soil and groundwater.

The site is underlain primarily by glacial till, recessional sand, and fill material. Twenty-seven groundwater wells, installed to a depth of 20 to 40 feet below ground surface (bgs), are currently present at the site. The first occurrence of groundwater beneath the site is currently approximately 2 to 11 feet bgs. The groundwater is present within a discontinuous, semi-confined, water-bearing unit within the upper portion of the till. The direction of groundwater flow within this unit is to the south-southwest towards Lake Union. Aquifer testing conducted at the site indicates a sustained yield estimated at 2 gallons per minute (gpm) and ranging from 0.5 to 3 gpm. Washington State Department of Ecology (Ecology) has determined that this shallow groundwater is unlikely a potential future source of drinking water (Ecology letter dated August 10, 1998).

Several cleanup actions have been completed or are on-going at the site. Subsurface product piping traversing the North and South Yards was cleaned and capped in 1992. Separate phase hydrocarbons (SPHs) have been removed through bailing (skimming) from on-site wells over the past few years. Recent groundwater well monitoring indicates that no measurable SPHs are currently present.

The proposed CAP includes two phases of soil and groundwater remediation. Phase I addresses demolition of the aboveground storage tanks (ASTs), removal of the aboveground piping and associated structures, and remediation of the shallow soil containing metals from AST sand blasting and painting activities (AGI, Interim Action Plan, April 1998). During Phase I, shallow soil will be excavated and disposed of at an approved landfill or recycled where practical. The ASTs and associated piping and structures will be removed and disposed of off-site or recycled where practical.

Phase II proposes methods to increase bioremediation. Phase II will use hydrogen peroxide injection and monitoring to enhance bioremediation of soil and groundwater containing petroleum hydrocarbons. It also includes contingency measures such as continued groundwater monitoring. Future groundwater use, institutional controls, and/or restrictive covenants to restrict disturbance to site soil will require Ecology approval prior to excavation or disturbance of site soil. The cleanup

actions will also include ancillary soil sampling, analyses, and remediation to address petroleum hydrocarbon constituents in soil.

Cleanup levels for the chemicals of concern (COCs) in soil and groundwater were developed based upon estimates of the highest beneficial use and the reasonable maximum exposure expected to occur under both current and potential future site use conditions. The COCs are listed in Table 1.

A risk evaluation was conducted to assess risks to human health and the environment. The results of the risk evaluation indicated that the site poses minimal risk from groundwater to surface water when statistical averaging and chemical migration from groundwater and surface water are considered. The risk evaluation also indicated that surface soil concentrations (metals) in the tank farm area are at levels which could pose a threat to worker health should contact occur.

Soil cleanup levels for total petroleum hydrocarbons (TPH) were derived in the Cleanup Development Level Report (Foster Wheeler Environmental, 1998a) using Ecology's Interim TPH Policy. Method C Industrial Soil Cleanup Levels are used for benzene and carcinogenic polynuclear aromatic hydrocarbons (PAHs) (MTCA, Cleanup Levels and Risk Calculations [CLARC II], February 1996). For metals, Method A Industrial Soil Cleanup Levels are proposed.

The shallow groundwater beneath the site has an extremely low probability for use as a drinking water source, but likely discharges to Lake Union. Therefore, Method B surface water cleanup levels are proposed as groundwater cleanup levels for this site. The proposed soil and groundwater cleanup levels are provided in Table 2.

Remedial alternatives were developed for the site by combining remedial technologies and their respective process options. Prior to developing specific cleanup alternatives, the site was separated into two operable units with differing cleanup requirements. The first operable unit is the Tank Farm soil and includes the surface soil containing elevated metal concentrations within the tank farm containment area. The second operable unit is the Lower Areas soil and groundwater and includes the soil and groundwater in the lower half of the North Yard, the South Yard, and the property between the two yards, containing elevated concentrations of petroleum hydrocarbons.

After investigation and evaluation, discussions with Ecology, and considering the findings of the RI/FS, the proposed cleanup for the Tank Farm soil operable unit includes removal of the ASTs, the excavation of shallow soil near these ASTs, and surface water controls or capping. Additional sampling is proposed for limited areas in both operable units where shallow soil was found to contain petroleum or petroleum constituents exceeding proposed cleanup levels.

The proposed groundwater cleanup actions for the Lower Areas soil and groundwater operable unit consists of hydrogen peroxide injection and monitoring with contingencies if necessary. Additional soil sampling is also proposed for limited areas of both operable units where shallow soil was found to contain petroleum or petroleum constituents exceeding proposed soil cleanup levels.

Institutional controls include restrictive covenants on use of the site: 1) only for industrial purposes; 2) on extraction or use of groundwater beneath the site; and 3) on excavation activities. Engineering controls proposed include maintenance of existing fencing and containment wall to restrict site access and possible paving of the tank farm area with asphalt. Compliance, protection,

and confirmation monitoring will be conducted during and following implementation of the proposed cleanup action in accordance with MTCA.

The proposed cleanup actions will eliminate potential human exposure to hazardous substances from contaminated soil, eliminate the potential groundwater to surface water exposure pathway, and protect human health and aquatic organisms. Removal and treatment alternatives will be implementable in a very short time. The estimated time period for site cleanup is three to five years. Considering the length of time COCs were believed to have been first released at the site (pre-1970s), this is considered a reasonable restoration time frame for this site.

The final CAP will be incorporated into the Consent Decree filed in January 1999 after receiving public comments and Ecology's revisions based on those comments. The design and implementation schedule will begin in January 1999. Tank Farm demolition and shallow soil remediation for metals will be completed in summer 1999. Lower Areas soil and groundwater remediation for petroleum hydrocarbons will be completed in fall 1999/2000. Compliance Monitoring is estimated to be performed from 2000 to 2004.

1. INTRODUCTION

1.1 PURPOSE

This Cleanup Action Plan (CAP) presents the proposed cleanup actions under the Model Toxics Control Act (MTCA) for the Former Chevron Bulk Terminal #100-1327. The terminal is currently owned by King County Metro Transit (Metro) and is located along the north shore of Lake Union at 1602 North Northlake Place, Seattle, Washington (Figure 1). The selection of cleanup actions presented in this document are based upon the findings of previous investigations conducted at the site and recent negotiations with the Washington State Department of Ecology (Ecology). The cleanup will be conducted by Chevron Products Company (Chevron), Metro, and Ecology under a legal agreement, called a Consent Decree.

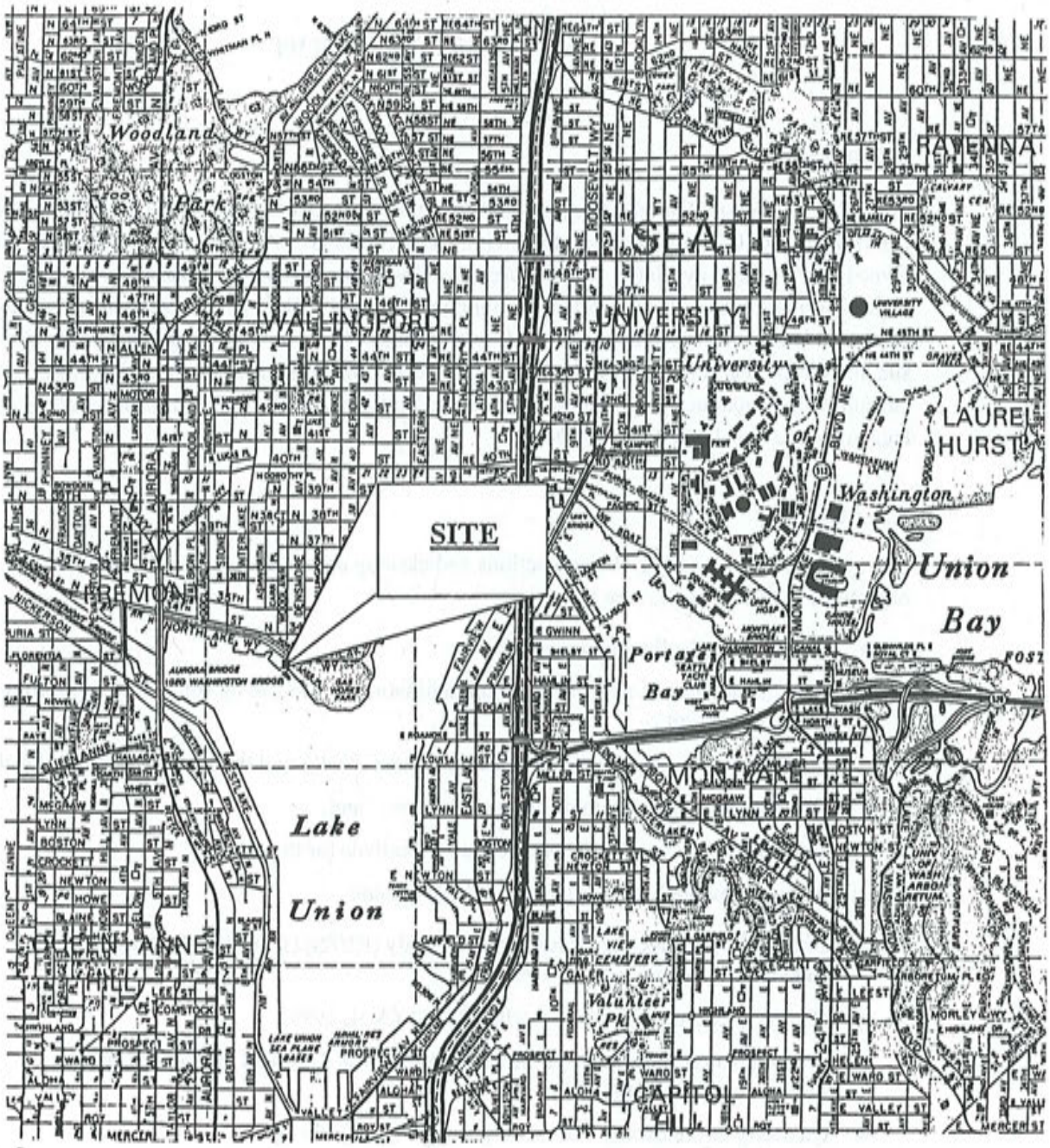
1.2 SCOPE

The requirements regarding cleanup actions and cleanup action plans are outlined in MTCA. The objectives of this document are to:

- Briefly describe the history of the site;
- Describe the nature and extent of contamination on the site by summarizing existing applicable reports;
- Provide cleanup standards protective of human health and the environment for the site;
- Describe proposed cleanup action alternatives; and,
- Select cleanup actions to meet cleanup objectives for the site.

Key documents previously submitted to Ecology include:

- Draft remedial investigation/feasibility study (RI/FS) (Draft RI/FS; Associated Geotechnology, Inc. [AGI], 1993);
- Quarterly Groundwater Monitoring Report (AGI, 1995);
- Environmental Assessment Former Chevron Bulk Terminal 100-1327 (Pacific Environmental Group [PEG], 1997);
- Quarterly Groundwater Monitoring Report (AGI, 1997);
- Cleanup Level Development Report (Foster Wheeler Environmental Corporation [Foster Wheeler Environmental], 1998a);
- Interim Action Plan Shallow Soil Remediation Facilities North (AGI, 1998);
- Groundwater Monitoring and Sampling Activities Report (PEG, 1998a).



REFERENCE: THOMAS BROTHERS GUIDE

FOSTER WHEELER ENVIRONMENTAL CORPORATION

FORMER CHEVRON BULK TERMINAL 100-1327
METRO FACITITIES NORTH
SEATTLE, WASHINGTON

SITE LOCATION MAP FIGURE 1

1.3 THE CAP, CLEANUP PROCESS, MTCA, AND CONSENT DECREE

In 1988, the MTCA (Ch.\70.105D RCW) was passed by initiative in Washington. This law directed Ecology to establish a cleanup process and cleanup levels for hazardous substances, including petroleum hydrocarbons. A site is defined in the MTCA as "any building,... site or area where a hazardous substance, other than a consumer product in consumer use, has been deposited, stored, disposed of, or placed, or otherwise come to be located." The site, which consists of a North Yard and a South Yard (Figure 2) and is currently owned by Metro and formerly owned by Chevron, meets this definition.

This CAP is one in a series of documents used by Ecology to monitor the progress of site investigation and cleanup. These documents typically include:

- Remedial Investigation/Feasibility Study
- Cleanup Action Plan
- Engineering Design Report
- Construction Documentation
- Operation and Maintenance Plan
- Compliance Monitoring Plan

As mentioned earlier, an RI/FS (AGI, 1993) has been performed at the site. The RI/FS reports the results of investigation into the nature and extent of chemical compounds in soil and groundwater, summarizes the risks to human health and the environment posed by those chemicals, and describes cleanup action alternatives that may be implemented to remove, control, or minimize contamination and risks. Based on this RI/FS and other site specific data and reports, a CAP is then developed. In many cases, additional investigation and/or pilot testing is conducted to provide a better understanding of site conditions and application of remediation technologies.

This CAP relies on the previous investigations and studies referenced in this document and establishes functional requirements for the cleanup. These include specification of cleanup standards and actions that are required to address chemicals of concern (COCs) above those standards. This document along with the Consent Decree, State Environmental Policy Act Determination of Non-significance (SEPA DNS) and environmental checklist, and Public Participation Plan have been prepared for public review. Following public comment and public meeting, the CAP will be revised based on comments from the public and Ecology review. If significant change is recommended to this draft CAP, then revisions will be made and a second public comment period will be held. The final CAP will be then prepared and with the Consent Decree will be recorded at the Washington State Superior Court under Chapter 70. 105D RCW.

The proposed cleanup actions are applicable only to this site and were selected because they will be protective of human health and the environment including surface water and aquatic organisms. Furthermore, the selected remedy is consistent with the preference of the State of Washington as stated in RCW 70. 105D.030(1)(b) for permanent solutions. Cleanup levels have been set and

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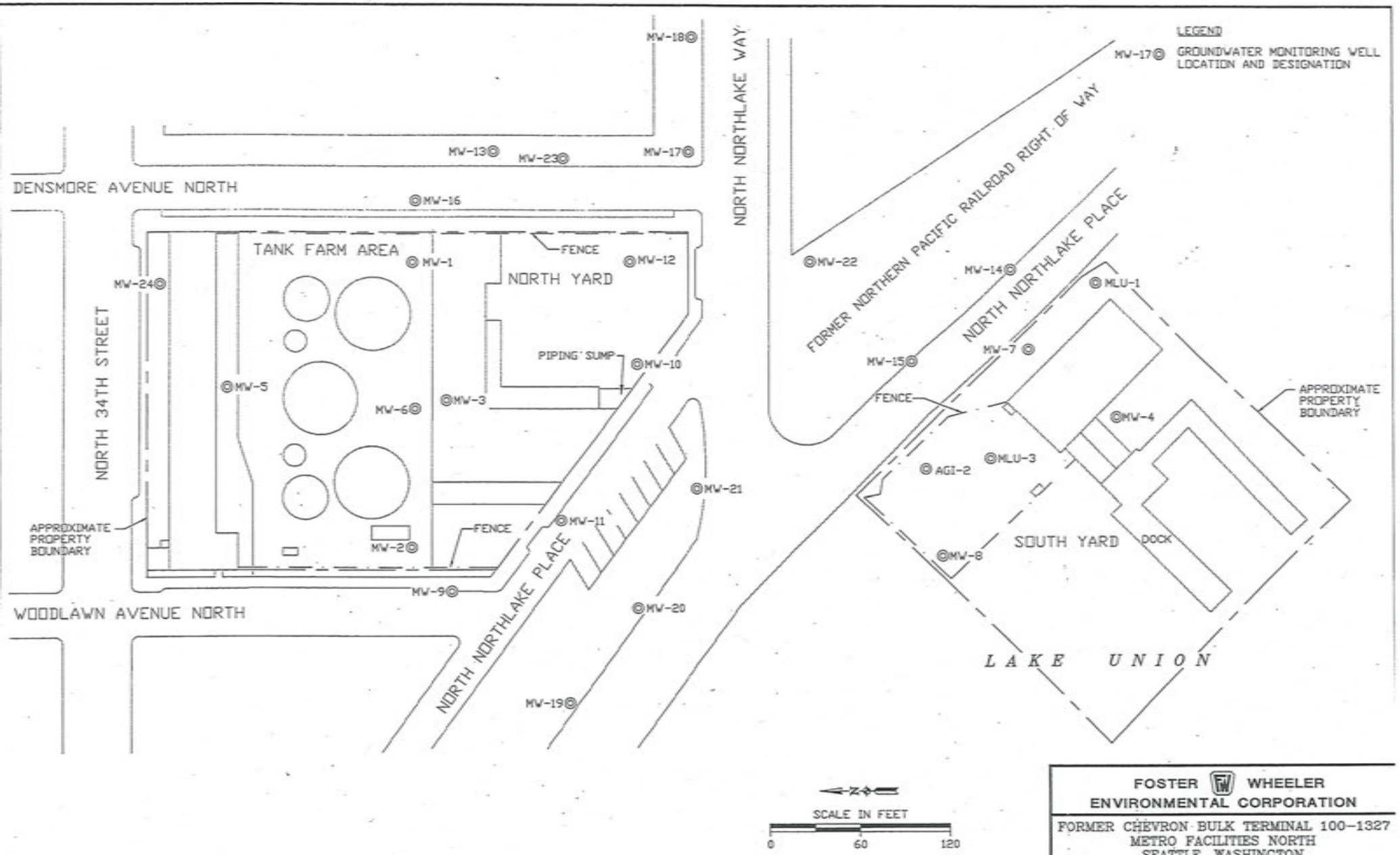


REFERENCE: PACIFIC ENVIRONMENTAL GROUP (PEG) (FIGURE 3, PROJECT 520-1641A0)

FOSTER WHEELER ENVIRONMENTAL CORPORATION

FORMER CHEVRON BULK TERMINAL 100-1327
METRO FACILITIES NORTH
SEATTLE, WASHINGTON
SITE PLAN

FIGURE 2

cleanup actions have been chosen as an overall remediation process being conducted under Ecology oversight using MTCA authority. Applicable or Relevant and Appropriate Requirements (ARARs) are provided in Appendix A. The SEPA DNS and environmental checklist are provided as a separate document.

The documents used to make the decisions discussed in this CAP are on file in the administrative record for the site. Referenced documents are detailed in the reference section of this document. The entire administrative record for the site is available for public review by appointment at Ecology's Northwestern Regional Office, located in Bellevue, Washington.

2. SITE DESCRIPTION AND HISTORY

2.1 SITE LOCATION

The site is located on the north shore of Lake Union, approximately 3 miles north of downtown Seattle (Figure 1). The legal description of the property is provided in the Consent Decree as Exhibit C. The location is described as the northwest ¼ of the northeast ¼ of Section 19, Township 25 N, Range 4 E. The site totals approximately 3 acres and consists of the North and South Yards, separated by public streets North Northlake Place and North Northlake Way (Figure 2).

The North Yard is bounded by North 34th Street on the north, Woodlawn Avenue North on the west, North Northlake Place on the south, and Densmore Avenue North on the east. The street address of the North Yard is 1602 North Northlake Place, Seattle, Washington 98103.

The South Yard is bounded by North Northlake Place on the northeast, the Seattle Harbor Patrol (SHP) on the southeast, Northlake Ship builders (former Unimar shipyard) on the northwest, and Lake Union on the southwest. The South Yard street address is 1475 North Northlake Place.

2.2 SITE HISTORY

The North Yard was first developed by Standard Oil Company of California in 1925. The aboveground storage tanks (ASTs) and piping were reportedly constructed in 1925. The garage along the north boundary and the tank-truck loading racks were constructed in 1927. Various small buildings and sheds associated with oil delivery were constructed in the southern portion of the North Yard. Historic Sanborn maps indicate 11 tanks within the tank farm. The size and recorded contents of these eleven tanks are as follows:

Two 440,000-gallon tanks containing gasoline
One 440,000-gallon tank containing fuel oil
One 45,150-gallon tank containing gasoline
One 160,000-gallon tank containing refined oil
Four 11,750-gallon tanks containing lubricating oils
One 45,150-gallon tank containing gasoline distillates
One 160,000-gallon tank containing diesel oil

The South Yard was reportedly developed prior to 1908, when it was occupied by Puget Sound Sheet Metal Works. A number of wood-frame buildings were reportedly present at the site during this time. In 1912, the property was occupied by a tannery which operated until the late 1920s. By 1950, the building in the South Yard was used by Standard Oil as a warehouse. In 1960, the South Yard was reportedly occupied by the California Spray and Chemical Company. A railroad spur was formerly located east of the South Yard. For additional information regarding site history refer to the draft RI/FS (AGI, 1993).

In 1982, Metro purchased the entire property from Chevron and refurbished the seven tanks, piping, fuel racks, and docks for diesel fuel storage. As part of the refurbishment, the tanks were emptied, sandblasted, and painted. In 1992, the bulk storage tanks were cleaned, ventilated and secured, and the petroleum lines flushed and secured, and closed for no future use. A 500-gallon underground storage tank (UST) containing heating oil was removed from an area adjacent to the office and the tank-truck loading rack in the North Yard was demolished.

2.3 CURRENT STATUS AND ZONING

At present, the North and South Yards continue to be occupied by Metro. The North Yard is used for office and shop space, storage, and parking. Approximately 70 percent of the North Yard is occupied by buildings or covered by asphalt or concrete pavement. The ASTs and associated piping in the tank farm area are empty, ventilated, secured, and ready to be abandoned. The North Yard is currently zoned industrial/commercial 45 (I/C 45).

The immediate vicinity surrounding the North Yard is mixed industrial, commercial, and residential. Immediately adjacent to the North Yard are streets, public right-of-ways, and small businesses. Most of the neighboring properties contain structures or are paved and used for parking.

The South Yard is used to store equipment, materials, and Metro vehicles. The area is secured with chain-link fencing. Approximately 30 percent of the South Yard is occupied by buildings and is covered with crushed rock. A dock extends out into Lake Union and is currently in use. The South Yard is currently zoned industrial/commercial 45 with an urban maritime overlay.

2.4 PAST ACTIVITIES OF ENVIRONMENTAL CONCERN

The tank farm located in the North Yard currently contains seven inactive ASTs ranging in size from 37,800 to 440,700 gallons (Figure 2). Metro refurbished the tanks and received, and distributed diesel fuel from 1983 to 1984. In 1992, the tanks were reported emptied, cleaned, ventilated and secured. The ASTs were removed from service and have remained empty since that time. The aboveground piping for the tanks is about 1 to 2 feet above the ground surface. The aboveground piping has been disconnected 5 feet from its juncture with the south containment wall. All below grade piping has been flushed and capped. The floor of the tank farm is unpaved, except the northern portion which is covered with a 2-3 inch layer of asphalt. The tank farm floor is generally sloped toward a catch basin located in the northwest corner. The catch basin is connected to a nearby oil/water separator.

Buried steel pipelines exit the south containment wall and traverse beneath the southern portion of the North Yard, under North Northlake Place and beneath the South Yard where they formerly connected to the piping under the former fuel docks. The subsurface piping has since been detached from the piping still present under the docks.

As a result of past site activities, petroleum releases to soil and groundwater are believed to have occurred from the ASTs, tank truck loading racks, and piping. Periodic leaks, drips, and minor spills that occurred during operation and maintenance also likely contributed to the presence of petroleum hydrocarbons in subsurface soil and groundwater. Concentrations of metals—specifically arsenic, cadmium, lead, and mercury—appear to be localized to surficial soils within the Tank Farm Area and are believed to be the result of sandblasting lead-based paints from the tanks.

In the South Yard, petroleum releases likely resulted from leaks in product piping and fittings and/or drums and small tanks. Diesel and, to a lesser extent, oil were found in shallow soil near the end of the product piping near Lake Union. Gasoline-range hydrocarbons found in subsurface soil in the South Yard are believed to be related to groundwater contamination due to location, depth, and distribution from sources in the North Yard.

Potential off-site contaminated soils and groundwater were identified in the draft RI/FS. Based on historical data, contaminant type, and distribution potential up-gradient sources include Gas Works Park located east of the South Yard and Nortar (formerly American Tar Company) located east of the North Yard.

2.5 FUTURE USE AND ZONING

At this time, Metro plans to retain ownership and does not plan to alter the current commercial/industrial use of the site. Land use in the area surrounding the site is also expected to remain commercial/industrial with mixed residential properties located to the north (up-gradient).

3. SUMMARY OF ENVIRONMENTAL ISSUES AND INVESTIGATIONS

3.1 SITE GEOLOGY AND HYDROGEOLOGY

Past investigations have identified that the site is underlain primarily by glacial till, recessional sand, and fill material. Glacial till was encountered to a maximum depth explored of 73 feet below ground surface (bgs) immediately north of the site, and was characterized as dense to very dense, silt to sandy gravel. Recessional sand was found along the southern boundary near Lake Union to a maximum depth of 37 feet bgs and was characterized as dense-to-very dense, clean-to-silty, fine-to-medium sand. Fill material, consisting of loose-to-dense, clean-to-silty, sandy gravel was encountered to a maximum depth of 20 feet bgs in the South Yard. Outwash sand is believed to be present beneath the till and is characterized as very dense, sandy gravel-to-gravelly sand.

The first occurrence of groundwater beneath the North and South Yards is approximately 2 to 8 feet bgs and approximately 6 to 11 feet bgs, respectively. The groundwater is present within a discontinuous, semi-confined, water bearing unit within the upper portion of the till. The direction of groundwater flow within this unit is to the south-southwest towards Lake Union. Aquifer testing conducted at the site indicates a sustained yield estimated at 2 gallons per minute (gpm) and ranging from 0.5 to 3 gpm. Ecology has determined that this shallow groundwater is unlikely a potential future source of drinking water (Ecology letter dated August 10, 1998).

3.2 METHODS OF INVESTIGATION

Subsurface conditions at the site have been investigated through the excavation of test pits, the drilling of shallow soil borings using hand auguring equipment, and the mechanical drilling of soil borings and installation of groundwater monitoring wells. Groundwater wells were installed to a depth of 20 to 40 feet bgs at the site.

Soil samples were collected from these test pits, borings, and wells for physical identification and/or chemical analyses. Water levels and separate phase hydrocarbon (SPH) thickness have been monitored periodically in groundwater wells constructed at the site since 1991. In addition, groundwater samples have also been collected from wells on a periodic basis for chemical analyses. Details of these investigations are provided in the following section.

3.3 SUMMARY OF PAST INVESTIGATIONS

In April 1988, Kennedy/Jenks/Chilton (KJC) drilled three soil borings on the south side of the North Yard and one boring west of the South yard warehouse, apparently in conjunction with a seismic evaluation completed in 1991 by Dames & Moore. Although the findings from this investigation were not available, gasoline range petroleum hydrocarbon compounds were reportedly detected in subsurface soil collected from these borings.

In April 1991, Science Applications International Corporation (SAIC), under contract with Ecology, installed one groundwater monitoring well (MLU-1) in the southwest side of the North Yard and two wells (MLU-2 and MLU-3) in the South Yard. The wells were reportedly installed to a maximum depth of 24 feet bgs. Groundwater samples collected from these wells reportedly contained gasoline and diesel range petroleum hydrocarbons, benzene, toluene, ethylbenzene, and xylene (BTEX); specific polynuclear aromatic hydrocarbons (PAHs); and heavy metals.

In mid-1992, Enviros, under contract with Metro, collected 24 surface soil samples, and sampled four test pits and a former UST excavation located east of the office of the North Yard. The results of this testing indicated the presence of gasoline, diesel, and oil range hydrocarbons in soil in these areas of the site.

In June 1993, AGI, under contract with Metro, conducted a limited preliminary investigation (prior to the RI/FS) which included drilling two soil borings (AGI-1 and AGI-2) to depths of approximately 84 and 41 feet bgs, respectively. The 41-foot boring (AGI-2) was converted to a

groundwater monitoring well. In addition, five shallow surface soil samples (HS1 through HS5) were collected from the upper two feet of soil at selected areas of the site.

The RI/FS was conducted by AGI from July 28, 1993 through September 1993. The field portion of the RI/FS consisted of the excavation and sampling of 12 test pits (TP1-TP12), the drilling and sampling of 9 shallow hand borings (HB1-HB9), the drilling of 11 soil borings (SB1-SB11), and the installation of 17 groundwater monitoring wells (MW) (MW-1 through MW-17).

The purpose of the RI/FS was to characterize the nature and extent of specific chemical compounds in soil and ground water resulting from activities at the site and to develop and evaluate cleanup action alternatives. Physical and chemical characteristics of soil and petroleum product were studied, and systematic groundwater sampling and analysis was performed (RI). Based on the results of the physical and chemical analyses of the site, a feasibility study (FS) was conducted to analyze alternative solutions to environmental issues on the site. A complete discussion of the program is found in the draft RI/FS report (AGI, 1993), and continued groundwater monitoring in the quarterly reports (AGI, May 1995 and January 1997).

In July and August 1997, PEG conducted supplemental environmental assessment to further assess and document soil and groundwater quality with respect to petroleum hydrocarbons at and adjacent to the site. This investigation included the drilling and installation of seven additional groundwater monitoring wells (MW-18 through MW-24).

In February 1998, groundwater monitoring and sampling was conducted at the site (PEG, 1998a). Of the 27 wells installed at the site, three wells (MLU-3, AGI-2, and MW-6) could not be accessed (two were buried and one was blocked by sand).

In March 1998, Foster Wheeler Environmental collected vapor samples and additional soil samples to augment previous investigations and provide data necessary to develop site specific cleanup levels for soil and groundwater (Foster Wheeler Environmental, 1998). The findings from this additional assessment, along with the site-specific cleanup levels derived from these data, were provided in a Cleanup Level Development Report prepared for the site (Foster Wheeler Environmental, 1998a). On May 14, 1998, Foster Wheeler Environmental provided supplemental information to support the Cleanup Level Development report.

In June and July 1998, an aquifer test evaluation (slug tests and aquifer drawdown pump test) was performed by Foster Wheeler Environmental. These data were used to derive hydraulic parameters of the first water-bearing unit beneath the site (i.e., hydraulic conductivity and transmissivity). An estimate of sustainable yield was then calculated at an estimated 2 gpm and ranging 0.5 to 3 gpm. This material is presented in reports dated June 30, 1998 and July 23, 1998.

In July 1998, PEG collected groundwater samples from wells MW-3, MW-9, MW-10, and MW-12 for petroleum hydrocarbon and metal analyses. The laboratory results were submitted to Ecology (PEG, 1998b).

3.4 PREVIOUS CLEANUP ACTIONS

Several cleanup actions have been completed or are on-going at the site. (These actions include cleaning and closing the ASTs and aboveground piping removing floating SPHs.) Subsurface product piping was cleaned and capped in 1992 and is located at the south wall of the AST containment area and traverses under the office at the North Yard, and beneath North Northlake Place, beneath the South Yard to the north end of the dock on Lake Union.

SPHs have been identified and removed through bailing (skimming) from on-site wells over the past few years. Petrobelts were installed in 1997 to remove SPH from four wells (MW-3, MW-9, MW-10, and MW-12) at the site. As a preventative measure, petroleum hydrocarbon sorbent 'socks' have been used in these wells to remove trace amounts of SPH that may appear with groundwater fluctuations. These four wells are currently monitored monthly and no measurable SPH is present. Results of monthly gauging and removal of SPH are included in Appendix B.

3.5 CHEMICALS OF CONCERN

COCs for soil and groundwater were identified in the April 1998, Foster Wheeler Environmental Cleanup Level Development Report. For soil, the COCs include gasoline, diesel, and oil range TPH, benzene, carcinogenic PAHs, arsenic, cadmium, chromium, lead, and mercury. For groundwater, the COCs include benzene, ethylbenzene, toluene, carcinogenic PAHs, arsenic and lead. The COCs are listed in Table 1.

3.6 RISKS TO HUMAN HEALTH AND THE ENVIRONMENT

3.6.1 Media of Concern

The media of concern for the site are soil, groundwater, and surface water. The source of petroleum has been determined to be the ASTs and minor incidental releases during fuel terminal operations. However, the ASTs and piping are no longer operational and do not contain petroleum. Petroleum in subsurface soil and groundwater consists primarily of aged gasoline, diesel, with some oil range hydrocarbons. Petroleum hydrocarbons can transfer from one media to another by such mechanisms as leaching from subsurface soil to groundwater to surface water.

Because diesel and oil range hydrocarbons generally have low volatility, the transfer to air from soil and/or groundwater at concentrations of concern is considered unlikely. On the other hand, because gasoline product is highly volatile, its capacity to produce vapor constituents is strongly influenced by its residence time in the soil. The age of the gasoline-range hydrocarbons found in soil at the site greatly reduces the potential for exposure to humans through vapor migration. Vapor sampling of indoor and outdoor air at the site confirmed this, showing air samples contained low to non-detectable levels of volatile organics. Therefore, vapor was eliminated as a media concern.

Table 1. Chemicals of Concern

Soil	Groundwater
TPH-Gasoline	Benzene
TPH-Diesel	Ethylbenzene
TPH-Oil	Toluene
Benzene	Benzo(a)pyrene
Benzo(a)pyrene	Chrysene
Chrysene	Dibenzo(a,h)anthracene
Dibenzo(a,h)anthracene	Indeno(1,2,3-cd)pyrene
Indeno(1,2,3-cd)pyrene	Benzo(k)fluoranthene
Benzo(k)fluoranthene	Benzo(a)anthrance
Benzo(a)anthrance	Benzo(b)fluoranthene
Benzo(b)fluoranthene	Fluoranthene
Fluoranthene	Napthalene
Napthalene	Arsenic
Arsenic	Lead
Cadmium	
Chromium	
Lead	
Mercury	

3.6.2 Risk Assessment

As outlined in the April 1998, Foster Wheeler Environmental Cleanup Level Development Report, a risk evaluation was undertaken to assess risks to human health and the environment. Consistent with MTCA, the risk evaluation included an exposure assessment, toxicity assessment, and risk characterization. The results of these assessments are summarized below.

During the exposure assessment, the pathways through which human and ecological receptors could intersect with COCs were identified. For humans, the assessment considered the following pathways: soil and fish ingestion, indoor and outdoor vapor inhalation by workers, and ingestion from potential groundwater discharge to surface water. Worker populations were selected for evaluation, because current zoning is industrial/commercial for both the North and South Yards.

Groundwater ingestion was not selected as an exposure pathway because the first occurrence of groundwater beneath the site does not serve as a current source of drinking water. Aquifer test evaluation (Foster Wheeler Environmental, 1998c and 1998d) indicated sustainable groundwater yields of 2 gpm and ranging from 0.5 to 3 gpm could be expected from this shallow water-bearing unit. Considering this relatively low sustainable yield, a commercial/industrial location, and the availability of city-supplied water, there appears to be an extremely low probability that the shallow groundwater beneath the site will actually be used as a source of drinking water. Further, Ecology has determined that this shallow groundwater is unlikely a potential future source of drinking water (Ecology letter dated August 10, 1998).

For ecological receptors, exposure from potential groundwater discharge to surface water, including aquatic organisms, was considered. Toxicity information for humans was obtained from EPA's Integrated Risk Information System (IRIS) and other sources as specified by MTCA. Toxicity information for aquatic resources was obtained from Ecology's surface water quality criteria (Washington Administrative Code [WAC] 173-201A) or EPA's lowest observed effects levels.

The exposure and toxicity information were combined in the risk characterization portion of the risk evaluation. This was accomplished first by developing risk-based cleanup levels and/or identifying Ecology's risked-based cleanup levels from the exposure and toxicity assessments, as appropriate. The maximum detected site concentrations were then compared to the cleanup levels. Maximum site concentrations were selected as a conservative estimate. Chemicals whose maximum concentrations exceeded the cleanup levels were evaluated further to assess their risk to human health and the environment. This evaluation consisted of using a statistical representation of the chemical concentrations consistent with MTCA and by conducting fate and transport modeling to estimate surface water impacts.

The results of the risk evaluation indicated that the site poses minimal risk from groundwater to surface water when statistical averaging and chemical migration from groundwater and surface water are considered. A specific risk-based cleanup level was derived for the COCs in media of concern using appropriate modeling methods. The risk evaluation also indicated that surface soil concentrations (metals) in the tank farm area are at levels which could pose a threat to worker health should contact occur.

3.7 MTCA MEDIA CLEANUP LEVELS

Through evaluation and discussions with Ecology, MTCA media cleanup levels have been established for the site. The proposed cleanup levels considered site location, current and future land use, potential exposure pathways, and COCs in order to establish levels which are protective of human health and the environment at the site. In some cases, engineering or institutional controls may be required before the proposed cleanup levels are considered protective.

3.7.1 Selection of Cleanup Level Methods

For both soil and groundwater, cleanup levels are based upon estimates of the highest beneficial use and the reasonable maximum exposure expected to occur under both current and potential future site use conditions. As mentioned earlier, the North and South Yards are zoned industrial/commercial (IC-45). The site is currently planned to remain commercial/industrial. Therefore, maximum exposure potential for soil is expected to be through soil ingestion by workers. For groundwater, the maximum exposure potential is expected to be its impact on the nearby surface water body (Lake Union).

3.7.2 Soil Cleanup Levels

The cleanup action levels for Phase I shallow soil containing COCs for metals from sandblasting and lead paint are MTCA Method A Industrial Soil Cleanup Levels (AGI, 1998). Soil cleanup levels for Total Petroleum Hydrocarbons (TPH) were derived in the Cleanup Development Document (Foster Wheeler Environmental, 1998a). For benzene and carcinogenic PAHs, Method C Industrial Soil Cleanup Levels were used (MTCA, Cleanup Levels and Risk Calculations [CLARC II], February 1996). Method B Interim TPH Policy, residual saturation-based evaluation, was used for TPHs. For metals, Method A Industrial Soil Cleanup Levels were used as listed in Table 2.

3.7.3 Groundwater Cleanup Levels

As outlined in MTCA (WAC 173-340-720), there may be sites where there is an extremely low probability that groundwater classified as potential future source of drinking water will actually be used for that purpose. At such sites, Ecology may approve groundwater cleanup levels that are based on protecting beneficial uses of adjacent surface water (Ecology letter dated August 10, 1998). As described earlier, the shallow groundwater beneath the site likely discharges to Lake Union and has an extremely low probability for use as a drinking water source. Therefore, groundwater cleanup levels based on protecting the beneficial use of Lake Union (surface water) are appropriate for this site. For these reasons, Method B surface water cleanup levels are proposed as groundwater cleanup levels for this site. The proposed groundwater cleanup levels are provided in Table 2.

4. SUMMARY OF PROPOSED ALTERNATIVE CLEANUP ACTIONS

4.1 CRITERIA FOR CLEANUP REMEDIES

Cleanup action objectives are goals for protecting human health and the environment. They are developed considering the characteristics of the contaminated medium (e.g., soil, groundwater, air, etc.), the characteristics of the hazardous substances present, migration and exposure pathways, and potential receptor points.

As discussed, there are three media of concern: soil, groundwater, and surface water. Benzene, ethylbenzene, toluene, TPH, carcinogenic PAHs, and arsenic, cadmium, lead, and mercury are the COCs potentially impacting human health and the environment in these media. Human exposure to these chemicals is possible through direct contact with soil and surface water.

MTCA's seven requirements for cleanup alternatives are outlined in WAC 173-340-360 through 173-340-760, which states that cleanup actions shall:

1. Protect human health and the environment.
2. Comply with cleanup standards.
3. Comply with applicable state and federal laws.
4. Provide compliance monitoring.

Table 1.

PROPOSED CLEANUP LEVELS - FACILITIES NORTH SITE
FORMER CHEVRON BULK FUELING 100-1327 AND CURRENT
KING COUNTY (METRO) FACILITIES NORTH, SEATTLE, WASHINGTON

Chemical of Concern	Soil	Units
TPH-Gasoline	4520	mg/kg
TPH-Diesel	5140	mg/kg
TPH-Oil	5780	mg/kg
Benzene	4530	mg/kg
Benzo(a)pyrene	18	mg/kg
Chrysene	18	mg/kg
Dibenzo(a,h)anthracene	18	mg/kg
Indeno(1,2,3-cd)pyrene	18	mg/kg
Benzo(k)fluoranthene	18	mg/kg
Benzo(a)anthrance	18	mg/kg
Benzo(b)fluoranthene	18	mg/kg
Fluoranthene	18	mg/kg
Napthalene	18	mg/kg
Arsenic	200	mg/kg
Cadmium	10	mg/kg
Chromium	500	mg/kg
Lead	1000	mg/kg
Mercury	1	mg/kg

Chemical of Concern	Ground Water	Units
Benzene	43	ug/L
Ethylbenzene	6910	ug/L
Toluene	48500	ug/L
Benzo(a)pyrene	0.0296	ug/L
Chrysene	0.0296	ug/L
Dibenzo(a,h)anthracene	0.0296	ug/L
Indeno(1,2,3-cd)pyrene	0.0296	ug/L
Benzo(k)fluoranthene	0.0296	ug/L
Benzo(a)anthrance	0.0296	ug/L
Benzo(b)fluoranthene	0.0296	ug/L
Fluoranthene	90.2	ug/L
Napthalene	9880	ug/L
Arsenic	0.0982	ug/L
Lead	5	ug/L

Note: If COCs (metals) in soil or COCs in groundwater are found during remediation then MTCA Method A Industrial Soil Cleanup Levels and MTCA Method B Surface Water Cleanup Levels will be used, respectively.

5. Use permanent solutions to the maximum extent practical.
6. Provide for a reasonable restoration time frame.
7. Consider concerns raised during public comment on the draft CAP.

The use of permanent solutions is based on seven evaluation criteria as follows:

1. Overall protection of human health and the environment
2. Long-term effectiveness
3. Short-term effectiveness
4. Permanent reduction of toxicity, mobility, and volume
5. Implementability
6. Cleanup costs
7. Community concerns

4.2 SUMMARY OF REMEDIAL ALTERNATIVES/CLEANUP ALTERNATIVES

Alternatives for addressing COCs in soil and groundwater and meeting the above remedial action objectives and criteria were presented in the draft RI/FS (AGI, 1993). Remedial alternatives were developed for the site by combining remedial technologies and MTCA requirements and criteria. Prior to developing specific cleanup alternatives, the site was separated into two operable units with differing cleanup requirements. The first operable unit is the Tank Farm soil and includes the surface soil containing elevated metal concentrations within the tank farm containment area. The second operable unit is primarily the Lower Areas soil and groundwater unit and includes the soil and groundwater containing elevated levels of petroleum hydrocarbons in the lower half of the North Yard, the South Yard, the property between the two yards, and isolated occurrences in North Yard.

Two cleanup alternatives were presented for the Tank Farm soil and three alternatives were presented for the Lower Areas soil and groundwater. These alternatives are summarized in the following section.

Tank Farm Soil—Alternative 1

The existing petroleum storage tanks would remain in place, but all process lines would be removed. The remediation actions employed would be:

- Fencing
- Land use restrictions
- Excavation (metals- and carcinogenic PAH-impacted soil only)
- Landfill disposal (Resource Conservation and Recovery Act [RCRA] Subtitle C)
- Surface Water Controls (capping/paving)

4.3 SELECTED REMEDIAL ALTERNATIVE AND JUSTIFICATION

4.3.1 Selected Remedial Alternative

After further investigation and evaluation by Foster Wheeler Environmental, discussions with Ecology, and considering the findings of the draft RI/FS, Alternative 2 was selected as the remedial alternative proposed for the Tank Farm soil operable unit. For the Lower Areas soil and groundwater operable unit, Alternative 2, modified to include hydrogen peroxide injection in place of groundwater extraction, air stripping, and vapor extraction, was selected.

As outlined in the draft RI/FS, Alternative 2 for the Tank Farm soil, which includes removal of the ASTs, the excavation of shallow soil near these ASTs, and surface water controls or capping, meets MTCA requirements. In fact, this alternative is considered more thorough than Alternative 1 because the ASTs would be removed.

Alternative 2 for the Lower Areas soil and groundwater operable unit, as outlined in the RI/FS, meets MTCA requirements. The proposed modifications to Alternative 2 address groundwater remediation and thereby meet MTCA requirements as outlined in the following sections.

The proposed groundwater cleanup actions for the Lower Areas soil and groundwater operable unit consist of Alternative 2 as outlined in the draft RI/FS, but modified to include hydrogen peroxide injection and monitoring in place of groundwater extraction, air stripping, and vapor extraction. Hydrogen peroxide has proven effective in reducing petroleum hydrocarbon concentrations in soil and groundwater and controlling further migration of petroleum hydrocarbons in groundwater. Hydrogen peroxide injection was not included as an alternative in the RI/FS (AGI, 1993), but is now deemed appropriate based on success at other sites and because recent site conditions indicate:

- The use of the site will remain industrial/commercial and soil and groundwater cleanup levels proposed in this CAP are higher than those presented in the RI/FS;
- Measurable SPHs are no longer present in the groundwater wells at the site; and
- The most recent groundwater monitoring data (February and July 1998) indicate lower COC concentrations in groundwater than those identified in the RI/FS (AGI, 1993).

It should also be noted that use of hydrogen peroxide for in-situ groundwater treatment is an emerging technology and its use at the time of preparing the draft RI/FS may have been limited. Recently, Ecology has provided information confirming its effectiveness at similar sites.

4.3.2 Selected Remedial Alternative Justification

For soil, the selected remedy will comply with proposed soil cleanup levels. For groundwater, the proposed treatment of groundwater represents a practicable approach to treat and contain COCs and also be protective of human health and the environment. Based on current concentrations and distribution, it is believed the selected remedial alternative will result in compliance with groundwater cleanup standards in a reasonable time. In addition, the cleanup action complies with applicable state and federal laws.

Shallow soils removal and subsequent disposal or recycling where practical is considered a permanent solution under MTCA. The treatment of groundwater through peroxide injection is also a permanent solution. Institutional controls are considered to be containment. Ecology recognizes the need to use these controls for sites or portions of sites where treatment is impracticable. The chosen alternative uses permanent solutions to the maximum extent practicable, in accordance with MTCA.

The proposed cleanup action will eliminate the human exposure to hazardous substances from contaminated soil and eliminate the potential groundwater to surface water exposure pathway. Removal and treatment alternatives will be implementable in a very short time. Ultimate achievement of cleanup standards for groundwater is dependent upon the effectiveness of peroxide injection. Since SPHs have been all but eliminated, site groundwater should respond favorably to peroxide injection. The estimated time period for site cleanup is 3 to 5 years. Considering the length of time COCs were believed to have been first released at the site (pre- 1970s), this is considered a reasonable restoration time frame for this site. The selected remedial alternative proposed is outlined in greater detail in the following sections.

5. SELECTED REMEDIAL ALTERNATIVE

5.1 OVERALL CLEANUP STRATEGY

The selected cleanup alternative is proposed to be conducted in two phases. Initial cleanup actions (Phase I) will begin with the demolition and removal of ASTs, aboveground piping, and associated structures and shallow soil (metals) remediation within the Tank Farm soil operable unit.

Phase II cleanup actions will be conducted in the Lower Areas soil and groundwater operable unit and will consist of enhanced groundwater bioremediation and monitoring. As part of Phase II, ancillary assessment and cleanup of soil containing petroleum hydrocarbons exceeding proposed cleanup action levels will be performed on a contingency basis within the Tank Farm soil operable unit. The proposed cleanup levels, actions, institutional controls, and points of compliance are outlined in the following sections of this CAP.

5.1.1 Overall Cleanup Strategy Phase I—Tank Farm Soil

5.1.1.1 Tank Demolition and Shallow Soil (Metals) Cleanup

Proposed cleanup actions within the Tank Farm soil operable unit will commence with AST demolition/removal and shallow soil (metals) remediation. A work plan prepared by AGI entitled "Interim Action Plan Shallow Soil Remediation Facilities North, Seattle, Washington" dated April 8, 1998, outlines the cleanup activities proposed for the Tank Farm soil. The work plan was submitted to Ecology in April 1998 and has undergone public review.

The objective of the Phase I cleanup actions within the Tank Farm soil is to eliminate the worker soil ingestion and dermal exposure pathway. This will be accomplished by removing aboveground structures, excavating shallow soil, and controlling surface water intrusion. The tasks include:

- AST demolition, removal, and off-site disposal with recycling of materials where practical;
- Removal of AST, aboveground piping, and associated structures for off-site disposal with recycling where practical; and
- Remediation of shallow soils using excavation and off-site disposal at an approved landfill and recycling where practical.

5.1.1.2 Petroleum Hydrocarbon Assessment and Cleanup Contingency

Based on the draft RI/FS and previous investigations, soil containing diesel range petroleum hydrocarbon (WTPH-D) concentrations exceeding proposed cleanup levels of 5,180 parts per million (ppm) are also present at three locations within the Tank Farm soil. These locations include hand sampling locations HS1 and HS2 both collected at less than 2 feet bgs and well MW-6 at depths of 5, 12.5, and 17 feet bgs. Total carcinogenic PAHs were found to exceed proposed cleanup levels of 18 ppm at one RI/FS soil sampling location within the Tank Farm soil (HB2 at 2 feet). No other soil samples collected within the Tank Farm soil operable unit were found to exceed proposed cleanup levels for the established COCs (see Table 3). Sample locations exceeding proposed soil cleanup levels are presented in Table 3.

Considering that the soil samples found to exceed proposed cleanup levels for diesel and/or PAHs were collected over five years ago and excavation and sampling is already proposed for the Tank Farm soil operable unit, further evaluation of current TPH-D and carcinogenic PAH concentrations in soil in these two shallow soil areas (HS1 and HS2) is proposed. Confirmation sampling proposed in the AGI Interim Action Plan will be amended to include collection of soil samples near HS1 and HS2 for TPH-D analyses. In the event diesel-range petroleum hydrocarbon or carcinogenic PAH concentrations are found to exceed proposed cleanup levels, these areas will be addressed as appropriate.

If SPHs are found during removal of the ASTs or other structures or during excavation activities within the Tank Farm soil operable unit, these SPHs will be removed immediately through pumping, skimming, or by use of petroleum sorbent materials. Additional sampling and excavation related to petroleum hydrocarbons in soil may also be necessary. Following excavation and sampling activities within the Tank Farm soil, the area will be backfilled with imported soil, compacted, and paved with asphalt.

Table 2.

Chevron/Metro Lake Union Soil Concentrations Exceeding Proposed Cleanup Action Levels

	Survey	Date	Sample	Analyte	Concentration	Units	Soil Cleanup Levels	Units
	Envi, 1992	06/1992	WYTP4C	Diesel	6800	mg/kg	5140	mg/kg
	Envi, 1992	06/1992	WYTP3C	Gasoline	8100	mg/kg	4520	mg/kg
North Yard								
	AGI, 1993	08/1993	HB02-0.1	Arsenic	3000	mg/kg	200	mg/kg
	AGI, 1993	08/1993	HB03-0.1	Arsenic	3000	mg/kg	200	mg/kg
	AGI, 1993	08/1993	HB04-0.1	Arsenic	2500	mg/kg	200	mg/kg
	AGI, 1993	08/1993	HB04-0.1 Dup	Arsenic	600	mg/kg	200	mg/kg
	AGI, 1993	08/1993	HS1	Diesel	14000	mg/kg	5140	mg/kg
	AGI, 1993	08/1993	HS2	Diesel	14000	mg/kg	5140	mg/kg
	AGI, 1993	08/1993	HS5	Diesel	7700	mg/kg	5140	mg/kg
	AGI, 1993	08/1993	MW06-17	Diesel	11000	mg/kg	5140	mg/kg
	AGI, 1993	08/1993	MW06-5	Diesel	8000	mg/kg	5140	mg/kg
	AGI, 1993	08/1993	MW10-11	Gasoline	6700	mg/kg	4520	mg/kg
	AGI, 1993	08/1993	HB01-0.2	Lead	3900	mg/kg	1000	mg/kg
	AGI, 1993	08/1993	HB02-0.1	Lead	7200	mg/kg	1000	mg/kg
	AGI, 1993	08/1993	HB03-0.1	Lead	6400	mg/kg	1000	mg/kg
	AGI, 1993	08/1993	HB04-0.1	Lead	5300	mg/kg	1000	mg/kg
	AGI, 1993	08/1993	HB04-0.1 Dup	Lead	2000	mg/kg	1000	mg/kg
	AGI, 1993	08/1993	HB01-0.2	Mercury	1.5	mg/kg	1	mg/kg
	AGI, 1993	08/1993	HB02-0.1	Mercury	3.3	mg/kg	1	mg/kg
	AGI, 1993	08/1993	HB03-0.1	Mercury	7.6	mg/kg	1	mg/kg
	AGI, 1993	08/1993	HB04-0.1	Mercury	12	mg/kg	1	mg/kg
	AGI, 1993	08/1993	HB04-0.1 Dup	Mercury	24	mg/kg	1	mg/kg
Off-Site								
	AGI, 1993	08/1993	SB8-12.5	Diesel	16000	mg/kg	5140	mg/kg

Table 3 (Continued)

Chevron/Metro Lake Union Soil Concentrations Exceeding Proposed Cleanup Action Levels

	Survey	Date	Sample	Analyte	Concentration	Units	Soil Cleanup Levels	Units
South Yard	AGI, 1993	08/1993	SB8-12.5	Gasoline	7600	mg/kg	4520	mg/kg
	AGI, 1993	08/1993	HB08-1.0	Diesel	7500	mg/kg	5140	mg/kg
	AGI, 1993	08/1993	HS4	Diesel	15000	mg/kg	5140	mg/kg
	AGI, 1993	08/1993	AGI2-12.5	Gasoline	5500	mg/kg	4520	mg/kg
	AGI, 1993	08/1993	HB07-0.4	Lead	1300	mg/kg	1000	mg/kg

5.1.2 Overall Cleanup Strategy Phase II—Lower Areas Soil and Groundwater

As mentioned earlier, the proposed cleanup actions for the Lower Areas soil and groundwater are based on Alternative 2 provided in the RI/FS (AGI 1993), but modified to include hydrogen peroxide injection in place of groundwater extraction, air stripping, and vapor extraction. The proposed cleanup actions were developed based on protection of human health and the environment; long-and short-term effectiveness; implementability; permanent reduction in toxicity, mobility, and volume of hazardous substances; reasonable restoration time; and costs as required by MTCA.

The site is currently used for commercial/industrial purposes. It is assumed that the site will continue to be used for these purposes. Groundwater is currently not used for drinking water and there is a low probability for such future use. Ecology has determined that the shallow groundwater is not a potential source of future drinking water (Ecology letter, August 10, 1998). Alternative 2 contains provisions for monitoring remediation, which includes active remediation and institutional controls such as restrictive covenants. Under MTCA, a longer period of time may be used for restoration if higher preference technologies are selected instead of offsite disposal, isolation, or containment options.

5.2 PROPOSED CLEANUP ACTION LEVELS

5.2.1 Proposed Cleanup Action Levels Phase I—Tank Farm Soil

5.2.1.1 Tank Demolition and Shallow Soil (Metals) Cleanup

Method A Industrial Soil Cleanup Levels for metals are proposed for the Tank Farm soil, as outlined in the work plan (AGI, 1998). For arsenic, cadmium, chromium, lead, and mercury these proposed cleanup levels are 200; 10; 500; 1,000; and 1.0 milligrams per kilogram (mg/kg) or ppm, respectively. Use of Method A Industrial Soil Cleanup Levels will require institutional controls including a deed restriction requiring site use to remain as industrial/commercial and limiting disturbance of site soils requiring Ecology's approval for excavation.

5.2.1.2 Petroleum Hydrocarbon Assessment and Cleanup Contingency

Cleanup levels for TPH, benzene, and carcinogenic PAHs were established based on current and planned future site use, through risk-based analyses, and through discussions with Ecology. For TPH in soil, cleanup levels are proposed based on residual petroleum hydrocarbon saturation, as part of the Interim TPH Policy and outlined in the Cleanup Level Development Report (Foster Wheeler Environmental, 1998a). Method C Industrial Cleanup Levels for soil are proposed for benzene and carcinogenic PAH compounds. The proposed soil cleanup actions levels for the site are provided in Table 2.

5.2.2 Proposed Cleanup Action Levels Phase II—Lower Areas Soil and Groundwater

The same soil cleanup levels proposed in Section 5.2.1.2 will apply to soil within the Lower Areas soil and groundwater operable unit. For COCs in groundwater, Method B surface water cleanup levels are proposed. The proposed soil and groundwater cleanup actions levels for the site are provided in Table 2.

5.3 PROPOSED CLEANUP ACTIONS

5.3.1 Proposed Cleanup Actions Phase I—Tank Farm Soil

5.3.1.1 Tank Demolition and Shallow Soil (Metals) Cleanup

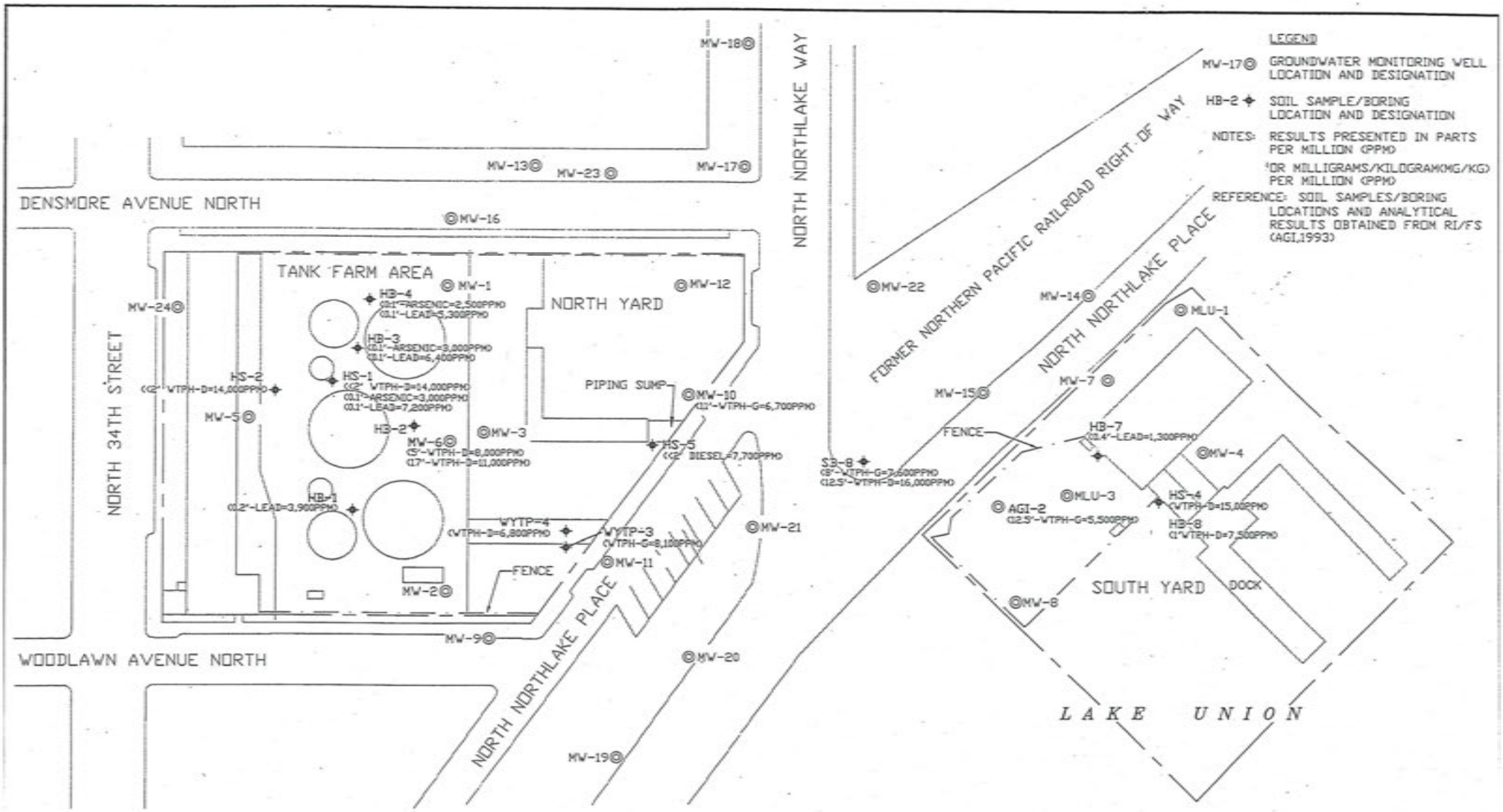
As stated in the work plan (AGI, April 1998), the cleanup activities will begin with the removal of the seven ASTs and aboveground piping after May 1999. Removal of the ASTs will also include removal of miscellaneous concrete structures and piping supports. Once the structures are removed, excavation of an estimated 420 cubic yards of soil (upper 3-6 inches of soil) containing elevated levels of arsenic, cadmium, chromium, lead, and mercury will be performed.

Following shallow soil excavation activities, soil samples will be collected from excavated soil for waste characterization purposes. Soil samples will also be collected from the excavation area and analyzed for specific total metal analyses to meet compliance monitoring requirements. Sampling procedures, locations, and analytical testing are described in the work plan for the Tank Farm soil (AGI, 1998).

5.3.1.2 Petroleum Hydrocarbon Assessment and Cleanup Contingency

Based on the RI/FS and previous investigations, soil containing WTPH-D concentrations exceeding proposed cleanup levels of 5,180 ppm are also present at three locations within the Tank Farm soil. These locations include hand sampling locations HS1 and HS2 both collected at less than 2 feet bgs and MW-6 at depths of 5, 12.5, and 17 feet bgs. Total carcinogenic PAHs were found to exceed proposed cleanup levels of 18 ppm at one RI/FS soil sampling location within the Tank Farm soil (HB2 at 2 feet). No other soil samples collected within the Tank Farm soil operable unit were found to exceed proposed cleanup levels for the established COCs (see Table 3). Sample locations exceeding proposed soil cleanup levels are presented on Figure 3.

Considering that the soil samples found to exceed proposed cleanup levels for diesel and/or PAHs were collected over five years ago and excavation and sampling is already proposed for the Tank Farm soil operable unit, further evaluation of current TPH-D and carcinogenic PAH concentrations in soil in these two shallow soil areas (HS1 and HS2) is proposed. Confirmation sampling proposed in the AGI Interim Action Plan will be amended to include collection of soil samples near HS1 and HS2 for TPH-D analyses. In the event diesel-range petroleum hydrocarbon or carcinogenic PAH concentrations are found to exceed proposed cleanup levels, these areas will be remediated by an Ecology approved method.



REFERENCE: PACIFIC ENVIRONMENTAL GROUP (PEG) (FIGURE 3, PROJECT 520-1643A)

FOSTER WHEELER ENVIRONMENTAL CORPORATION

FORMER CHEVRON BULK TERMINAL 100-1327
METRO FACILITIES NORTH
SEATTLE, WASHINGTON

SOIL SAMPLE LOCATIONS EXCEEDING PROPOSED CLEANUP LEVELS

FIGURE 3

If SPHs are found during removal of the ASTs or other structures or during excavation activities within the Tank Farm soil operable unit, these SPHs will be removed immediately through pumping, skimming, or by use of petroleum sorbent materials. Additional sampling and excavation related to petroleum hydrocarbons in soil may also be necessary. Following excavation and sampling activities within the Tank Farm soil, the area will be backfilled with imported soil, compacted, and paved with asphalt.

Cleanup of groundwater will be addressed in the Lower Areas soil and groundwater operable unit, which is outlined in the next section. It should also be noted that soil samples found to exceed proposed cleanup levels at depths of 5 to 17 feet in MW-6 are present at or near groundwater and will be addressed with the cleanup actions proposed for the Lower Areas soil and groundwater operable unit.

5.3.2 Proposed Cleanup Actions Phase II—Lower Areas Soil And Groundwater

The following proposed cleanup actions have been developed to address soil and groundwater exceeding proposed cleanup action levels within the Lower Areas soil and groundwater operable unit. Based on the RI/FS and findings of other referenced assessments, no soil samples exceeding proposed oil range hydrocarbons (WTPH-O) concentrations of 5,780 ppm or proposed benzene concentrations of 4,530 ppm were found. In addition, no metal concentrations in soil within this operable unit exceed proposed soil cleanup level concentrations.

Lower Areas Soil

Based on the referenced reports, gasoline range hydrocarbons (TPH-G) exceeding proposed soil cleanup levels of 4,520 ppm are present in three soil sampling locations within the Lower Areas soil and groundwater operable unit. These include MW-10 at 11 feet, Boring SB-8 at 12.5 feet and Well AGI-2 at 12.5 feet bgs. In addition, MW-6 has noted samples at 5, 12.5, and 17 feet bgs. Soil containing WTPH-D were found to exceed proposed soil cleanup levels of 5,140 ppm at nine RI/FS soil sampling locations. These locations include hand samples HS4 at 0.3 feet, HS5 at 0.5 feet, hand boring HB8 at 1 foot, and boring SB8 at 12.5 feet bgs. Total carcinogenic PAHs were found to exceed proposed cleanup levels of 18 ppm at RI/FS soil sampling locations HB2 at 2 feet, SB3 at 17 feet, MW-3 at 21 feet, MW-10 at 11 feet, and SB-2 at 12.5 feet. Soil sample locations exceeding proposed soil cleanup levels are shown in Figure 3.

As with the Tank Farm soil operable unit, shallow soil (defined as 2 feet bgs or above) found to exceed cleanup levels in soil near HS4, HS5, and HB8 will require further evaluation to assess current COC concentrations. In the event COC concentrations are found to exceed proposed cleanup levels, these areas will be remediated by natural attenuation and monitoring, or by another Ecology approved method.

The remaining soil samples found to exceed proposed cleanup levels within the Lower Areas soil and groundwater operable unit were found at or near groundwater and will be addressed by the proposed groundwater cleanup actions outlined below.

Lower Areas Groundwater

The primary COC for groundwater cleanup within the Lower Areas soil and groundwater operable unit is benzene. Based on the February 1998 groundwater sampling data (PEG, 1998a) and supplemental data collected in July 1998, seven wells (MW-3, MW-7, MW-8, MW-10, MW-12, MW-20, and MW-22) contain benzene concentrations exceeding proposed Method B surface water cleanup levels of 43 parts per billion (ppb) (Table 4).

Other chemical compounds found to exceed proposed groundwater cleanup levels include arsenic, bis(2-ethylhexyl) phthalate, and in MW-7, benzo(a)anthracene and benzo(a)pyrene. Based on December 1996 data, arsenic concentrations in wells MW-8 and MW-9 of 8 ppb and 13 ppb, respectively, exceed proposed cleanup levels of 5 ppb. Bis(2-ethylhexyl)phthalate, a semi-volatile compound, exceeded proposed groundwater cleanup levels of 3.56 ppb in nine wells; MW-3, MW-4, MW-7, MW-8, MW-9, MW-10, MW-12, MW-22, and MLU-1. Ethylbenzene concentrations exceeded proposed cleanup levels in off-site well MW-13.

No other compound was found to exceed proposed groundwater cleanup levels. Groundwater well locations exceeding proposed cleanup levels are shown in Figure 4.

Wells containing benzene, and other organic compounds including bis(2ethylhexl)phthalate, benzo(a)anthraceneand benzo(a)pyrene, will be selected as peroxide injection wells. Well MW-20, due to its down-gradient location, will be selected as a compliance monitoring well (see Section 5.5).

Thirteen existing wells are proposed as peroxide injection wells (MW-3, MW-6, MW-7,MW-8, MW-9, MW-10, MW-11, MW-12, MW-15, MW-22, MLU-1, MLU-3, and AGI-2). In addition, the installation of two supplemental peroxide injection wells are proposed (MW-27 and MW-28) as shown in Figure 5.

Based on conversations with Ecology, each proposed peroxide injection well must be registered with Ecology as an injection well. The latitudinal and longitudinal coordinates of each well may also need to be provided to Ecology.

The amount and frequency of peroxide injection can be adjusted to meet specific site conditions. However, at this time, it is proposed that peroxide injection be conducted initially in the 13 selected wells and monitored on a weekly basis for a period of 8 weeks. The peroxide injection treatment will be monitored and adjusted to optimize bioremediation and decrease of COCs. Contingency measures may be added to improve effectiveness of the injection treatment. Later the treatment will be monitored on a quarterly basis until trends are established and on an annual basis until cleanup action levels are achieved.

During each injection event, peroxide solution will be injected in each of the wells identified above. Prior to each injection event, dissolved oxygen levels will be measured in each injection well and in other monitoring wells as appropriate. To target specific areas of the site, the volume or frequency of peroxide solution injected can be increased in selected wells. To reduce the potential for increased COC leaching and migration due to the introduction of liquids into the subsurface, injection volumes will be carefully modulated. Monitoring wells located near injection wells will be monitored for dissolved oxygen and petroleum hydrocarbons constituents, as necessary.

Table 4 (Continued)

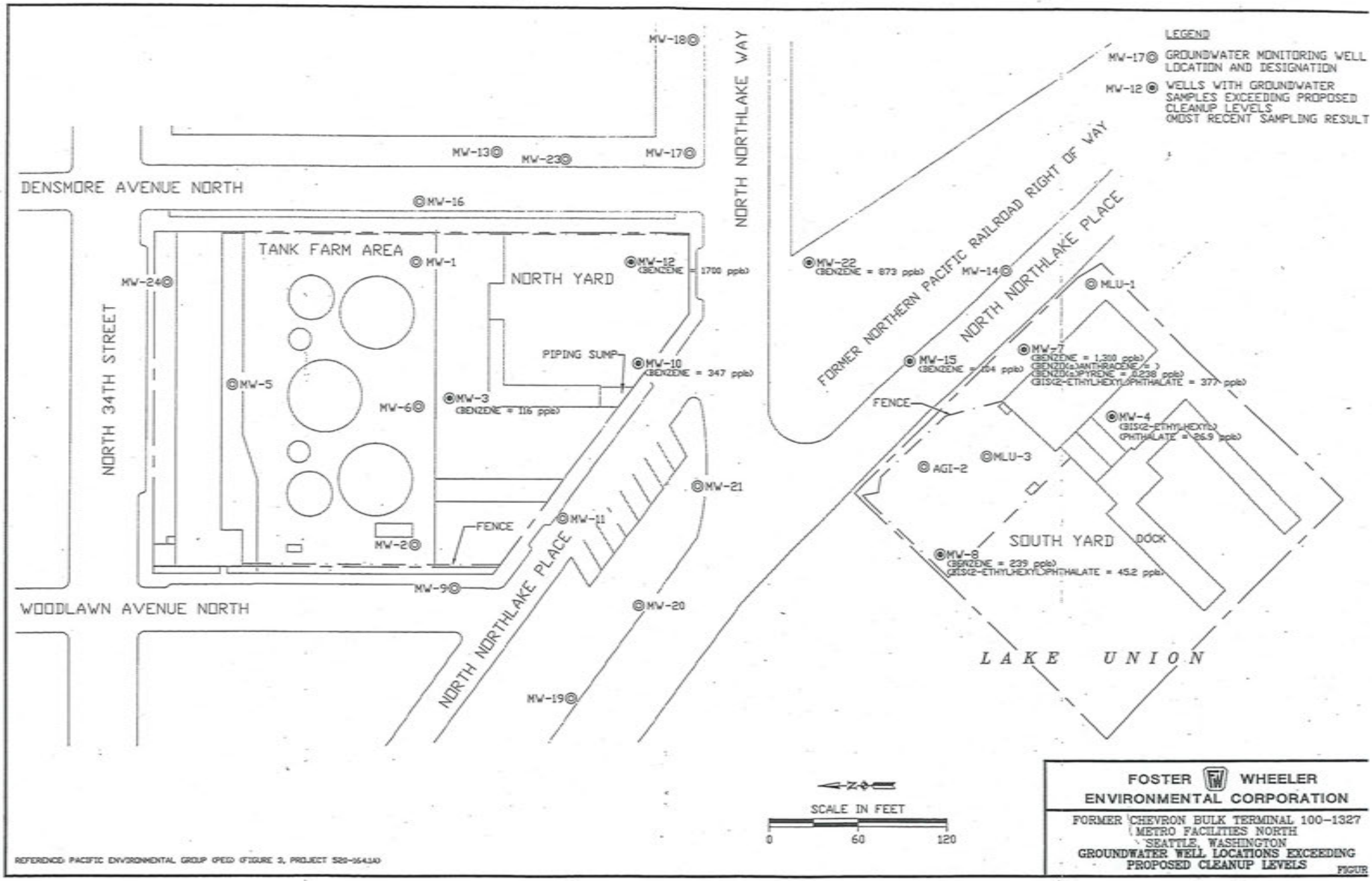
Chevron/Metro Lake Union Groundwater Concentrations Exceeding Proposed Cleanup Levels (Post 1995)

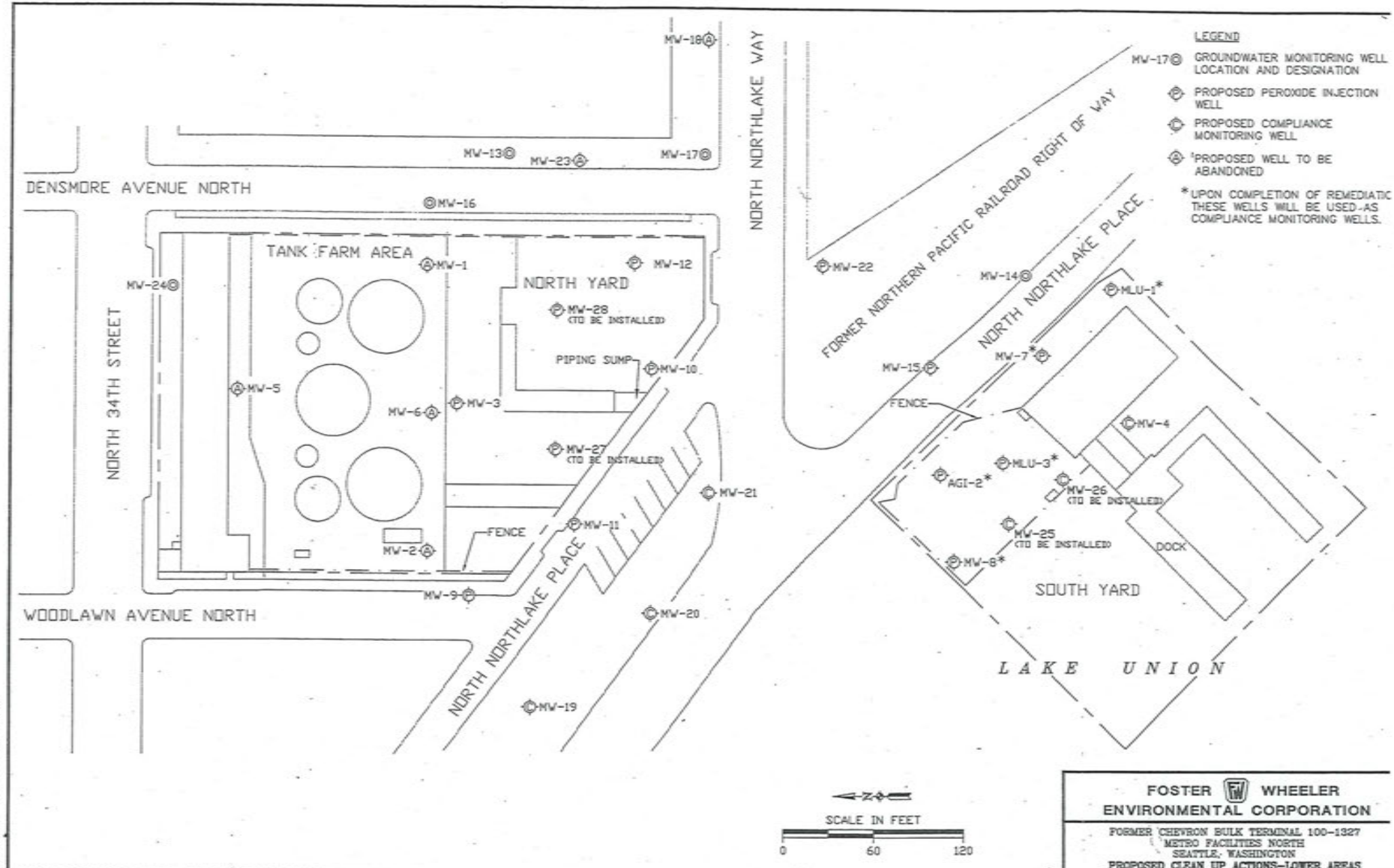
	Survey	Date	Sample	Analyte	Concentration	Units	Groundwater Cleanup Levels	Units
	AGI, 1996	12/1996	MW-9	Lead	16	ug/l	5	ug/l
South Yard								
	AGI, 1996	12/1996	MW-8	Arsenic	8.4	ug/l	0.0982	ug/l
	AGI, 1996	12/1996	MW-8	Arsenic	7.8	ug/l	0.0982	ug/l
	AGI, 1996	12/1996	MW-8 Dup	Arsenic	8.1	ug/l	0.0982	ug/l
	AGI, 1996	12/1996	MW-8 Dup	Arsenic	8.9	ug/l	0.0982	ug/l
	AGI, 1997	07/1997	MW-7	Benzene	2060	ug/l	43	ug/l
	PEG, 1998	02/1998	MW-7	Benzene	1310	ug/l	43	ug/l
	PEG, 1998	02/1998	MW-7	Benzene	1290	ug/l	43	ug/l
	AGI, 1996	12/1996	MW-8	Benzene	1200	ug/l	43	ug/l
	PEG, 1997	07/1997	MW-8	Benzene	524	ug/l	43	ug/l
	PEG, 1998	02/1998	MW-8	Benzene	131	ug/l	43	ug/l
	PEG, 1998	02/1998	MW-8	Benzene	239	ug/l	43	ug/l
	AGI, 1996	12/1996	MW-8 Dup	Benzene	1200	ug/l	43	ug/l
	PEG, 1998	02/1998	MW-7	Benzo(a)anthracene	1.25	ug/l	0.0296	ug/l
	PEG, 1998	02/1998	MW-7	Benzo(a)anthracene	0.123	ug/l	0.0296	ug/l
	PEG, 1998	02/1998	MW-7	Benzo(a)pyrene	0.238	ug/l	0.0296	ug/l
	PEG, 1998	02/1998	MW-4	Bis (2-Ethylhexyl) Phthalate	26.9	ug/l	3.56	ug/l
	PEG, 1998	02/1998	MW-7	Bis (2-Ethylhexyl) Phthalate	377	ug/l	3.56	ug/l
	PEG, 1998	02/1998	MW-8	Bis (2-Ethylhexyl) Phthalate	45.2	ug/l	3.56	ug/l
	AGI, 1996	12/1996	MW-4	Lead	99	ug/l	5	ug/l

Table 3.

Chevron/Metro Lake Union Groundwater Concentrations Exceeding Proposed Cleanup Levels (Post 1995)

	Survey	Date	Sample	Analyte	Concentration	Units	Groundwater Cleanup Levels	Units
	FWEC, 1998	07/1998	MW-10	Benzene	347	ug/l	43	ug/l
	FWEC, 1998	07/1998	MW-12	Benzene	1700	ug/l	43	ug/l
	FWEC, 1998	07/1998	MW-3	Benzene	116	ug/l	43	ug/l
	FWEC, 1998	07/1998	MW-10	Bis (2-Ethylhexyl) Phthalate	279	ug/l	3.56	ug/l
	FWEC, 1998	07/1998	MW-12	Bis (2-Ethylhexyl) Phthalate	478	ug/l	3.56	ug/l
	FWEC, 1998	07/1998	MW-3	Bis (2-Ethylhexyl) Phthalate	530	ug/l	3.56	ug/l
	FWEC, 1998	07/1998	MW-9	Bis (2-Ethylhexyl) Phthalate	234	ug/l	3.56	ug/l
North Yard								
	AGI, 1996	12/1996	MW-10	Benzene	890	ug/l	43	ug/l
	AGI, 1996	12/1996	MW-10 Dup	Benzene	960	ug/l	43	ug/l
	PEG, 1998	02/1998	MLU-1	Bis (2-Ethylhexyl) Phthalate	106	ug/l	3.56	ug/l
	AGI, 1996	12/1996	MW-10	Lead	13	ug/l	5	ug/l
	AGI, 1996	12/1996	MW-10	Lead	5.3	ug/l	5	ug/l
	AGI, 1996	12/1996	MW-10 Dup	Lead	9.1	ug/l	5	ug/l
	AGI, 1996	12/1996	MW-10 Dup	Lead	5.5	ug/l	5	ug/l
Off-Site								
	AGI, 1996	12/1996	MW-9	Arsenic	11	ug/l	0.0982	ug/l
	AGI, 1996	12/1996	MW-9	Arsenic	13	ug/l	0.0982	ug/l
	PEG, 1998	02/1998	MW-15	Benzene	104	ug/l	43	ug/l
	PEG, 1997	07/1997	MW-20	Benzene	112	ug/l	43	ug/l
	PEG, 1997	07/1997	MW-20 Dup	Benzene	100	ug/l	43	ug/l
	PEG, 1997	07/1997	MW-22	Benzene	169	ug/l	43	ug/l
	PEG, 1998	02/1998	MW-22	Benzene	873	ug/l	43	ug/l
	PEG, 1997	07/1997	MW-22	Bis (2-Ethylhexyl) Phthalate	20.9	ug/l	3.56	ug/l
	AGI, 1996	12/1996	MW-13	Ethylbenzene	11000	ug/l	6910	ug/l
	PEG, 1997	07/1997	MW-13	Ethylbenzene	10800	ug/l	6910	ug/l
	PEG, 1998	02/1998	MW-13	Ethylbenzene	14100	ug/l	6910	ug/l


LEGEND
MW-17 GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION
MW-12 WELLS WITH GROUNDWATER SAMPLES EXCEEDING PROPOSED CLEANUP LEVELS (MOST RECENT SAMPLING RESULT
DENSMORE AVENUE NORTH
WOODLAWN AVENUE NORTH
NORTH 34TH STREET
NORTH NORTHLAKE WAY
NORTH NORTHLAKE PLACE
FORMER NORTHERN PACIFIC RAILROAD RIGHT OF WAY
TANK FARM AREA
NORTH YARD
SOUTH YARD
DOCK
PIPING SUMP
FENCE
LAKE UNION
MW-18
MW-13
MW-23
MW-17
MW-16
MW-1
MW-24
MW-12 (BENZENE = 1700 ppb)
MW-22 (BENZENE = 873 ppb)
MW-14
MLU-1
MW-7 (BENZENE = 1,310 ppb) (BENZO(a)ANTHRACENE =) (BENZO(a)PYRENE = 0.238 ppb) (BIS(2-ETHYLHEXYL)PHTHALATE = 377 ppb)
MW-15 (BENZENE = 104 ppb)
MW-10 (BENZENE = 347 ppb)
MW-5
MW-6
MW-3 (BENZENE = 116 ppb)
MW-4 (BIS(2-ETHYLHEXYL) (PHTHALATE = 26.9 ppb)
MLU-3
AGI-2
MW-21
MW-11
MW-2
MW-9
MW-8 (BENZENE = 239 ppb) (BIS(2-ETHYLHEXYL)PHTHALATE = 45.2 ppb)
MW-20
MW-19
SCALE IN FEET
0
60
120
REFERENCE: PACIFIC ENVIRONMENTAL GROUP (PEG) (FIGURE 3, PROJECT 520-164.1A)
FOSTER WHEELER ENVIRONMENTAL CORPORATION
FORMER CHEVRON BULK TERMINAL 100-1327
METRO FACILITIES NORTH
SEATTLE, WASHINGTON
GROUNDWATER WELL LOCATIONS EXCEEDING PROPOSED CLEANUP LEVELS
FIGUR



REFERENCE: PACIFIC ENVIRONMENTAL GROUP (PEG) (FIGURE 3, PROJECT 525-164.1A)

FOSTER WHEELER ENVIRONMENTAL CORPORATION

FORMER CHEVRON BULK TERMINAL 100-1327
METRO FACILITIES NORTH
SEATTLE, WASHINGTON
PROPOSED CLEAN UP ACTIONS-LOWER AREAS
SOIL AND GROUND WATER

FIGUR

Other activities believed to be vital to the success of site cleanup include:

- Abandonment of wells (MW-1, MW-2, MW-5, MW-6, MW-18, and MW-23) that will not be used for site cleanup or monitoring to minimize potential surface water impacts to groundwater (see Figure 5);
- Maintaining and repairing injection and/or monitoring wells during the course of remediation;
- Conducting yearly site visits to visually assess current site conditions such as ongoing operations, new construction or demolition activities, well conditions; and,
- Monitoring the property boundary along Lake Union for petroleum seeps as an added precaution even though there is no reason to suspect a problem.

5.4 INSTITUTIONAL CONTROLS

Institutional controls are an important element of the proposed cleanup action, ensuring protection of human health and the environment. Controls of this type are required when residual concentrations of COCs will remain in place and will be required until these residual COCs no longer exceed proposed cleanup levels at the points of compliance. At this site, institutional controls include restrictive covenants on use of the site only for commercial or industrial purposes, on extraction or use of groundwater beneath the site, and on excavation activities (see Consent Decree). Engineering controls proposed for the site include maintenance of existing fencing and containment wall to restrict site access and possible paving of the tank farm area with asphalt for use as a parking lot.

5.5 COMPLIANCE WELLS

The Point of Compliance is defined in MTCA as the point or points where cleanup levels established in accordance with WAC 173-340-720 through WAC 173-340-760 shall be attained (WAC 173-340-200). Once those cleanup levels have been attained at a point of compliance, the site is no longer considered a threat to human health and the environment.

The point of compliance for groundwater is defined in WAC 173-340-720(6)(b) to be the uppermost level of the saturated zone extending vertically to the lowest most depth potentially effected by the conditions at the site. If hazardous substances remain on site as part of the cleanup action, under WAC 173-340-720(6)(c), monitoring of groundwater shall be established as close as practicable to the edge of the contained hazardous substances, not to exceed the property boundary, so as to ensure the quality of groundwater and the performance of the containment system. Therefore, the point of compliance for groundwater in the North Yard will be the southern property boundary, and will be monitored using existing wells MW-19, MW-20, MW-21. The point of compliance for the South Yard will be the southern property boundary and will be monitored using existing wells MW-4, MW-7, MW-8, AGI-2, MLU1-3 and proposed wells MW-25 and MW-26, which will be installed as part of site cleanup activities (see Figure 5).

6. COMPLIANCE MONITORING

6.1 PROTECTION MONITORING

Protection monitoring will be conducted to confirm that human health and the environment are being protected during implementation of the cleanup action. This information will be provided in a site specific health and safety plan and will include appropriate soil and air monitoring, chemical and waste handling, and documentation procedures.

6.2 PERFORMANCE MONITORING

6.2.1 Performance Monitoring Phase I—Tank Farm Soil

6.2.1.1 Tank Demolition and Shallow Soil (Metals) Cleanup

Performance monitoring will be conducted following soil excavation within the Tank Farm soil operable unit to assess whether cleanup actions for metals have attained proposed cleanup levels. Performance monitoring proposed for Phase I work within the Tank Farm soil is presented in the Interim Action Plan (AGI, 1998). In general, soil samples will be collected from the bottom of the excavation and analyzed for arsenic, cadmium, chromium, lead, and mercury.

6.2.1.2 Petroleum Hydrocarbon Assessment and Cleanup Contingency

Soil samples will also be collected near hand samples HS1 and HS2 for diesel-range petroleum hydrocarbon and carcinogenic PAH analyses. The results of the analyses will be used to evaluate whether proposed cleanup levels have been met and/or if any additional actions are necessary for this area of the site. Any additional cleanup activities required will be performed on a contingency basis as a result of field observations or analytical results and approved by Ecology.

6.2.2 Performance Monitoring Phase II—Lower Areas Soil and Groundwater

Performance monitoring for Phase II activities will begin with quarterly groundwater monitoring and sampling of the six proposed compliance wells. Monitoring of these wells will include inspection for measurable SPHs, measuring water levels and dissolved oxygen concentrations, and sampling the wells for appropriate COC analyses, as necessary. As remediation progresses and COC concentrations in soil and groundwater decline, the frequency of groundwater monitoring, sampling, and analyses will be reduced as site conditions warrant.

Water level measurements and inspection for measurable SPHs will be performed quarterly on all available wells at the site for the first five quarters of remediation. Wells slated for peroxide injection should also be monitored for dissolved oxygen concentrations prior to peroxide injection activities that may occur during the site visit.

6.3 CONFIRMATION MONITORING

6.3.1 Confirmational Monitoring Phase I—Tank Farm Soil

6.3.1.1 Tank Demolition and Shallow Soil (Metals) Cleanup

Confirmation monitoring will be conducted to confirm the long-term effectiveness of the cleanup actions. Confirmation monitoring will only be required in areas of the site where performance monitoring indicates cleanup levels have not been met. For example, if performance monitoring conducted in the Tank Farm soil operable unit shows that soil containing metals exceeding proposed cleanup levels remains, confirmation sampling will be required to meet final Ecology requirements.

6.3.1.2 Petroleum Hydrocarbon Assessment and Cleanup Contingency

As stated in Section 6.2.1.2, soil samples will be collected within the tank farm soil operable unit and analyzed for petroleum hydrocarbons as part of performance monitoring. Soil samples exceeding proposed cleanup levels for TPH, benzene and/or carcinogenic PAHs will be remediated by Ecology approved natural attenuation or other method. Confirmation monitoring will be conducted upon completion of soil remediation activities

6.3.2 Confirmational Monitoring Phase II—Lower Areas Soil and Groundwater

For groundwater, proposed confirmation monitoring will consist of quarterly groundwater sampling of all existing site wells following cessation of peroxide injection activities. If confirmation monitoring indicates that COCs in all wells are below proposed cleanup levels for five consecutive quarters, then site cleanup will have met MTCA requirements. Additional annual verification of cleanup through monitoring of wells MW-19, MW-20, MW-21, AGI-2, MLU-1, MLU-3, MW-4, MW-7, MW-8, MW-25, and MW-26 or subset of these wells will likely be required for up to five years beyond the remediation period.

7. SCHEDULE FOR IMPLEMENTATION

The CAP will be recorded with the Consent Decree in January 1999. The design and implementation schedule for the CAP is provided in Appendix C.

8. REPORTING

8.1 PROCEDURE

Unless otherwise specified by Ecology, all reports, plans, specifications, and similar information submitted shall meet the requirements outlined in MTCA (WAC 173-340-840). This includes submittal of three copies (three hard copies and one electronic copy) of the plan or report with a cover letter describing the submittal and specifying the desired department action or response. In some circumstances additional copies may be required to meet public participation and interagency coordination needs.

8.2 QUARTERLY REPORTING AND PERIODIC UPDATES

Quarterly reports (hard copy and electronic copy) will be submitted to Ecology in April 1999, July 1999, October 1999, January 2000, April 2000, and July 2000 detailing monitoring and sampling activities conducted at the site during the previous three months. A report will also be prepared detailing Phase I activities within the Tank Farm soil operating unit following completion of AST removal and soil excavation and sampling activities. Periodic updates will be provided during times of significant site activity, as required (i.e. during Phase I work, after well installations, or during initial stages of peroxide injection activities). Annual reports will be prepared once remediation is complete and verification monitoring is implemented.

8.3 PUBLIC PARTICIPATION AND PUBLIC INFORMATION REPORTING

MTCA regulations require that public concerns regarding the proposed cleanup action be addressed. A public comment period for this document formally presents the public an opportunity to comment on the proposed action. Public comments and concerns will be evaluated in developing the final cleanup action plan. A responsiveness summary will be included with the final CAP to respond to public comment.

8.4 FINAL DRAFT REPORT WITH COMPLIANCE MONITORING REPORT

Upon completion of site cleanup activities including final compliance monitoring results, a final draft report detailing site cleanup activities will be submitted to Ecology. Once approved, a final report will be submitted along with a petition to remove the site from the Site Hazard List. This petition can be submitted prior to completion of compliance monitoring if all remedial actions except confirmational monitoring have been completed.

9. REFERENCES

AGI. 1993. Draft Remedial Investigation/Feasibility Study Facilities North Site. Seattle, Washington. November, 1993.

AGI. 1995. Quarterly Ground Water Monitoring Results, Facilities North Site. Seattle, Washington. May 4, 1995.

AGI. 1997. Summary December 1996 Groundwater Monitoring Results, Facilities North Site. Seattle, Washington. January 31, 1997.

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Foster Wheeler Environmental. 1998b. Former Chevron Bulk Terminal 100-1327 and Current King County Metro Transit Terminal Supplemental Information. May 14, 1998.

Foster Wheeler Environmental. 1998c. Estimate of Sustainable Well Yield and Slug test Data Former Chevron Bulk Terminal 100-1327 and Current King County Metro Transit Terminal. Seattle, Washington. June 30, 1998.

Foster Wheeler Environmental. 1998d. Results of Pump Test and Estimate of Sustainable Yield for Well MW-10, Former Chevron Bulk Terminal 100-1327 and Current King County Metro Transit Terminal. Seattle, Washington. June 30, 1998.

Pacific Environmental Group (PEG). 1997. Environmental Assessment Former Chevron Bulk Terminal 100-1327. Metro Facilities North, Seattle, Washington. August 29, 1997.

PEG. 1998a. Groundwater Monitoring and Sampling Activities Former Chevron Bulk Terminal 100-1327. Metro Facilities North. Seattle, Washington. April 21, 1998.

PEG. 1998b. Laboratory Reports of Groundwater Samples Collected from Wells MW-3, MW-9, MW-10, and MW-12. July 1, 1998.

Washington State Department of Ecology (Ecology). 1996a. The Model Toxics Control Act Cleanup Regulation, Chapter 173-340 WAC (Publication No. 94-06). January 1996 (amended).

Ecology. 1996b. Model Toxics Control Act Cleanup Levels and Risk Calculations (CLARC II) Update (Publication No.94-145). February 1996.

Ecology. 1998. Proposed Cleanup Action Plan and Comments on Cleanup Level Development Draft for the Facilities North/Metro Lake Union Site, former Chevron Facilities #1001327. Seattle, Washington. June 24, 1998.

CONSENT DECREE

EXHIBIT C

FORMER CHEVRON BULK TERMINAL #100-1327
FACILITIES NORTH/KING COUNTY METRO TRANSIT
LAKE UNION SITE

SEATTLE, WASHINGTON

RESTRICTIVE COVENANT

EXHIBIT C

DECLARATION OF RESTRICTIVE COVENANTS

KING COUNTY, a charter county of the State of Washington, hereby gives notice that the Property, which is the subject of the following restrictive covenants and is legally described as:

Parcel A: Lots 1 through 12 inclusive, Block 74, Lake Union Addition to the City of Seattle, according to the plat recorded in volume 1 of plats, page 238, in King County, Washington;

Parcel B: Southeasterly half of Lot 10 and all of Lots 11 to 16 inclusive, and Northwesterly 6 feet of Lot 17, in Block 101, Lake Union Shore Lands, records of King County, Washington; and

Parcel C: Southeasterly 29.075 feet of Lot 17, Block 101, Lake Union Shore Lands, records of King County, Washington, and more particularly described as follows:

Beginning at the Northeast corner of Lot 17, Block 101, Lake Union Shore Lands from which the concrete monument at the intersection of the center line of Northlake Avenue and the center line of that part of Densmore Avenue between Northlake Avenue and North 34th Street, as established, bears North 20°04'37" East a distance of 234.78 feet; thence North 34°22'32" West along the North boundary of said Lot 17, a distance of 29.973 feet; thence South 41°33'54.7" west paralleling the East boundary of said Lot 17, a distance of 238.282 feet to a point on the South boundary of said Lot 17; thence South 58°26'05.3" East along the South boundary of said Lot 17, a distance of 29.075 feet to the Southeast corner of said Lot 17; thence North 41°33'54.7" East along the East boundary of said Lot 17 and West boundary of Waterway No. 20, as established, a distance of 231.001 feet to the place of beginning

(the "Property"), was the subject of remedial actions under Chapter 70.105D RCW and implementing regulations.

The work performed in the remedial actions is described in the Consent Decree filed with and approved by the Superior Court of the state of Washington in and for King County, King County Cause No. _____.

These restrictive covenants are required by ECOLOGY under WAC 173-340-440(5) because the Cleanup Action on the Property will result in residual levels of petroleum hydrocarbons in the soil and shallow groundwater beneath the Property which exceed ECOLOGY's residential cleanup levels for soil, and achieve Method B surface water standards for groundwater but do not achieve drinking water standards, as established under WAC chapter 170-340.

Subject to exceptions and reservations of record, KING COUNTY is the owner of the Property. KING COUNTY makes the following declaration as to limitations, restrictions and uses to which the Property may be put. KING COUNTY specifies that such declarations and the obligations created by the declarations shall constitute covenants to burden and run with the land and such covenants shall be binding on all parties and all persons, including KING COUNTY, who have or acquire any portion of, or interest in, the Property. Such declarations shall inure to the benefit of and be enforceable by the Washington State Department of Ecology and its successors and assigns ("ECOLOGY").

Pursuant to said Consent Decree, KING COUNTY subjects the Property to the following restrictive covenants:

1. No activities that interfere with the remedial actions required by the Consent Decree shall be undertaken on the Property without ECOLOGY approval.

2. No wells for the extraction of water shall be installed in the Property without ECOLOGY approval.

3. No development of the Property for uses other than industrial uses, as defined in Chapter 70.105D RCW, shall be undertaken without ECOLOGY approval.

4. With exceptions for landscaping and shallow underground utilities, no excavation of soils shall be permitted on the Property without ECOLOGY approval. Any excavation for such landscaping or underground utilities must ensure there is no increased exposure of the residual contaminants remaining in the Property after the Cleanup Action.

5. No title, easement, lease or other interest in the Property shall be conveyed or entered into without adequate provision for the terms of this Declaration of Restrictive Covenants.

6. Authorized representatives of ECOLOGY shall have the right to enter the Property at reasonable times with reasonable notice for the purposes of evaluating compliance with the terms of this Declaration of Restrictive Covenants.

Except as limited by the express provisions of this Declaration of Restrictive Covenants, KING COUNTY and its successors and assigns expressly reserve all rights of ownership, use and enjoyment of the Property.

Executed this ____ day of _____, 199_.

KING COUNTY

By: _____
Its: _____

State of Washington
County of King

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

Dated: _____

_____
(Signature)

(Seal or stamp)

_____
Title
My appointment expires_____

_____

APPROVED:

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

By: _____
James J. Pendowski
Program Manager
Toxics Cleanup Program

STATE OF WASHINGTON
ATTORNEY GENERAL

By: _____
Assistant Attorney General
Attorneys for the State

Covnant7.doc

Metro Transit Lake Union
SIT 8.2

Recording Requested By And
When Recorded Mail To

King County Metro Transit
Real Property and Environmental Planning
KSC-TR-0431
201 South Jackson Street
Seattle, Washington 98014

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KING COUNTY ME DPC 21.00
PAGE 001 OF 003
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KING COUNTY, WA

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DEPT OF ECOLOGY

DECLARATION OF RESTRICTIVE COVENANTS

Reference #s of Documents Released or Assigned	none
Grantor	King County
Grantee	Washington State Department of Ecology
Legal Description (abbreviated)	Lots 1-12, Blk 74, Lake Union Addition to City of Seattle; Portion of Lot 10, Lots 11-16 and portion of Lot 17, Blk 101, Lake Union Shore Lands.
Assessor's Tax Parcel ID#	408880-4670-01; 408330-6985-02

KING COUNTY, a charter county of the State of Washington, hereby gives notice that the Property, which is the subject of the following restrictive covenants and is legally described as:

Parcel A: Lots 1 through 12, inclusive, Block 74, Lake Union Addition to the City of Seattle, according to the plat recorded in volume 1 of plats, page 238, in King County, Washington;

Parcel B: Southeasterly half of Lot 10 and all of Lots 11 to 16 inclusive, and Northwesterly 6 feet of Lot 17, in Block 101, Lake Union Shore lands, records of King County, Washington; and

Parcel C: Southeasterly 29.075 feet of Lot 17, Block 101, Lake Union Shore Lands, records of King County, Washington, and more particularly described as follows:

> Beginning at the northeast corner of Lot 17, Block 101, Lake Union Shore Lands from which the concrete monument at the intersection of the center line of Northlake Avenue and the center line of that part of Densmore Avenue between Northlake Avenue and North 34th Street, as established, bears North 20°04'37" East a distance of 234.78 feet; thence North 34°22'32" West along the north boundary of said Lot 17, a distance of 29.973 feet; thence South 41°33'54.7" West paralleling the East boundary of said Lot 17, a distance of 238.282 feet to a point on the South boundary of said Lot 17; thence South 58°26'05.3" East long the South boundary of said Lot 17, a distance of 29.075 feet to the Southeast corner of said Lot 17; thence North 41°33'54.7" East along the East boundary of said Lot 17 and West boundary of Waterway No. 20, as established, a distance of 231.001 feet to the place of beginning

(the "Property"), was the subject of remedial actions under Chapter 70.105D RCW and implementing regulations.

The work performed in the remedial actions is described in the Consent Decree filed with and approved by the Superior Court of the state of Washington in and for King County, King County Cause No.99-2-08651-1SEA.

These restrictive covenants are required by ECOLOGY under WAC 173-340-440(5) because the Cleanup Action on the Property will result in residual levels of petroleum hydrocarbons in the soil and shallow groundwater beneath the Property which exceed ECOLOGY's residential cleanup levels for soil, and achieve Method B surface water standards for groundwater but do not achieve drinking water standards, as established under WAC chapter 170-340.

Subject to exceptions and reservations of record, KING COUNTY is the owner of the Property. KING COUNTY makes the following declaration as to limitations, restrictions and uses to which the Property may be put. KING COUNTY specifies that such declarations and the obligations created by the declarations shall constitute covenants to burden and run with the land and such covenants shall be binding on all parties and all persons, including KING COUNTY, who have or acquire any portion of, or interest in, the Property. Such declarations shall inure to the benefit of and be enforceable by the Washington State Department of Ecology and its successors and assigns ("ECOLOGY").

Pursuant to said Consent Decree, KING COUNTY subjects the Property to the following restrictive covenants:

1. No activities that interfere with the remedial actions required by the Consent Decree shall be undertaken on the Property without ECOLOGY approval.

2. No wells for the extraction of water shall be installed in the Property without ECOLOGY approval.

3. No development of the Property for uses other than industrial uses, as defined in Chapter 70.105D RCW, shall be undertaken without ECOLOGY approval.

4. With exceptions for landscaping and shallow underground utilities, no excavation of soils shall be permitted on the Property without ECOLOGY approval. Any excavation for such landscaping or underground utilities must ensure there is no increased exposure of the residual contaminants remaining in the Property after the Cleanup Action.

5. No title, easement, lease or other interest in the Property shall be conveyed or entered into without adequate provision for the terms of this Declaration of Restrictive Covenants.

6. Authorized representatives of ECOLOGY shall have the right to enter the Property at reasonable times with reasonable notice for the purposes of evaluating compliance with the terms of this Declaration of Restrictive Covenants.

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KING COUNTY, WA

Except as limited by the express provisions of this Declaration of Restrictive Covenants, KING COUNTY and its successors and assigns expressly reserve all rights of ownership, use and enjoyment of the Property.

Executed this 19th day of November, 2002.

KING COUNTY

By: Harold McNelly

Its: Acting Chief, Asset Management

STATE OF WASHINGTON)
)ss.
COUNTY OF KING)

I certify that I know or have satisfactory evidence that Harold McNelly is the person who appeared before me, and said person acknowledged that he/she signed this instrument, on oath stated that he/she was authorized to execute the instrument and acknowledged it as the Acting Chief, Asset Management of KING COUNTY to be the free and voluntary act of such party for the uses and purposes mentioned in the instrument.

Dated: 11-19-2002

Dionne Bailey

BIONNE BAILEY NOTARY PUBLIC STATE OF WASHINGTON JULY 16, 2005

Notary Public in and for the State of Washington, Residing at

Benton, WA.

My commission expires 7-16-05.

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Appendix B.

Touchstone Corporation NLU LLC Prospective Purchaser Consent Decree

JUL 23 2007
ATTORNEY GENERAL'S OFFICE
Ecology Division

STATE OF WASHINGTON

KING COUNTY SUPERIOR COURT

STATE OF WASHINGTON, DEPARTMENT OF ECOLOGY, Plaintiff, v. TOUCHSTONE CORPORATION, Defendant.	NO. 07-2-23870-1 SEA PROSPECTIVE PURCHASER CONSENT DECREE

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EXHIBIT C Legal Description of Property
EXHIBIT D Cleanup Action Plan
EXHIBIT E Amended Restrictive Covenant
EXHIBIT F Irrevocable Assignment
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I. INTRODUCTION

A. The mutual objective of the State of Washington, Department of Ecology (Ecology) and Touchstone Corporation (Defendant) under this Decree is to (1) resolve the potential liability of Defendant for contamination at the Metro Lake Union Site (Site) and sediments in Lake Union arising from a release or threatened release of hazardous substances, in advance of Defendant purchasing an ownership interest in the Site, and (2) facilitate the cleanup of the Site for redevelopment or reuse. This Decree requires Defendant to excavate and dispose of soil contamination at a portion of the Site.

Ecology has determined that these actions are necessary to protect human health and the environment.

B. The Complaint in this action is being filed simultaneously with this Decree. An answer has not been filed, and there has not been a trial on any issue of fact or law in this case. However, the Parties wish to resolve the issues raised by Ecology's Complaint. In addition, the Parties agree that settlement of these matters without litigation is reasonable and in the public interest, and that entry of this Decree is the most appropriate means of resolving these matters.

C. By signing this Decree, the Parties agree to its entry and agree to be bound by its terms.

D. By entering into this Decree, the Parties do not intend to discharge non-settling parties from any liability they may have with respect to matters alleged in the Complaint. The Parties retain the right to seek reimbursement, in whole or in part, from any liable persons for sums expended under this Decree. This section does not modify the Contribution Protection provision in the existing Consent Decree between Ecology, King County, and Chevron, *Department of Ecology v. King County and Chevron Products Company*, King County Superior Court Cause No. 99-2-08651-1SEA (1999), Section XXIX.

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E. This Decree shall not be construed as proof of liability or responsibility for any releases of hazardous substances or cost for remedial action nor an admission of any facts; provided, however, that Defendant shall not challenge the jurisdiction of Ecology in any proceeding to enforce this Decree.

F. The Court is fully advised of the reasons for entry of this Decree, and good cause having been shown:

Now, therefore, it is HEREBY ORDERED, ADJUDGED, AND DECREED as follows:

II. JURISDICTION

A. This Court has jurisdiction over the subject matter and over the Parties pursuant to the Model Toxics Control Act (MTCA), Chapter 70.105D RCW.

B. Authority is conferred upon the Washington State Attorney General by RCW 70.105D.040(4)(a) to agree to a settlement with any potentially liable person (PLP) if, after public notice and any required hearing, Ecology finds the proposed settlement would lead to a more expeditious cleanup of hazardous substances. In addition, under RCW 70.105D.040(5), the Attorney General may agree to a settlement with a person not currently liable for remedial action at a facility who proposes to purchase, redevelop, or reuse the facility, provided: the settlement will yield substantial new resources to facilitate cleanup; the settlement will expedite remedial action consistent with the rules adopted under MTCA; and Ecology determines based upon available information that the redevelopment or reuse of the facility is not likely to contribute to the existing release or threatened release, interfere with remedial actions that may be needed at the Site, or increase health risks to persons at or in the vicinity of the Site. RCW 70.105D.040(4)(b) requires that such a settlement be entered as a consent decree issued by a court of competent jurisdiction.

C. Ecology has determined that a release or threatened release of hazardous substances has occurred at the Property that is the subject of this Decree, and that the remedial actions required by this Decree are necessary to protect human health and the environment

based on the planned future use of the Property as contemplated by the Parties under this Decree.

D. Defendant has not been named a PLP for the Site, and Defendant has certified under Section IX (Certification of Defendant) that it is not currently liable for the Site under MTCA. However, Defendant has entered into a purchase agreement to acquire property located at 3301 Densmore Avenue North, Seattle, Washington, from King County, the current owner of the Property. The Property comprises a portion of the Site. Defendant will incur potential liability under RCW 70.105D.040(1)(a) at the time it acquires an interest in the Property for performing remedial actions or paying remedial costs incurred by Ecology or third parties resulting from past releases or threatened releases of hazardous substances at the Site. This Decree settles Defendant's liability as described herein for this Site and for contaminated sediments in Lake Union, upon its purchase of the Property.

E. Ecology finds that this Decree will yield substantial new resources to facilitate cleanup of the Property; will lead to a more expeditious cleanup of hazardous substances at the Site in compliance with the cleanup standards established under RCW 70.105D.030(2)(e) and Chapter 173-340 WAC; will promote the public interest by facilitating the redevelopment or reuse of the Property; and will not be likely to contribute to the existing release or threatened release at the Property, interfere with remedial actions that may be needed at the Site, or increase health risks to persons at or in the vicinity of the Site.

F. Defendant has agreed to undertake the actions specified in this Decree and consents to the entry of this Decree under MTCA.

G. This Decree has been subject to public notice and comment.

III. PARTIES BOUND

This Decree shall apply to and be binding upon the Parties to this Decree, their successors and assigns. The undersigned representative of each party hereby certifies that he or she is fully authorized to enter into this Decree and to execute and legally bind such party to

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comply with the Decree. Defendant agrees to undertake all actions required by the terms and conditions of this Decree. No change in ownership or corporate status shall alter Defendant's responsibility under this Decree. However, Touchstone Corporation may create a limited liability corporation (LLC) for the purpose of developing a building on the Property. If that occurs, the LLC will take title to the Property and be responsible for cleanup and redevelopment. Touchstone Corporation will assign all of its rights and obligations under this Consent Decree to the LLC and will have no further responsibility under this Decree. Defendant shall provide a copy of this Decree to all agents, contractors and subcontractors retained to perform work required by this Decree, and shall ensure that all work undertaken by such agents, contractors, and subcontractors complies with this Decree.

IV. DEFINITIONS

Unless otherwise specified herein, all definitions in RCW 70.105D.020 and WAC 173-340-200 shall control the meanings of the terms in this Decree.

A. Site: The Site is referred to as the Metro Lake Union Site and is generally located at 1602 N. Northlake Way, Seattle, Washington. The Site is more particularly described in the Site Diagram, attached as Exhibit A. The Site constitutes a Facility under RCW 70.105D.020(4).

B. Property: Refers to the property located at 3301 Densmore Avenue North, Seattle, Washington, that Defendant intends to purchase. The Property comprises a portion of the Site. A diagram of the Property is attached as Exhibit B. A legal description of the Property is attached as Exhibit C.

C. Parties: Refers to the State of Washington, Department of Ecology (Ecology) and Touchstone Corporation.

D. Defendant: Refers to Touchstone Corporation. Touchstone Corporation may create a LLC for the purpose of developing a building on the Property. If that occurs, the LLC will take title to the Property and be responsible for cleanup and redevelopment of the Property. Touchstone Corporation will assign all of its rights and obligations under this Consent Decree to the LLC, and the LLC will become the sole Defendant.

E. Consent Decree or Decree: Refers to this Prospective Purchaser Consent Decree and each of the exhibits to the Decree. All exhibits are integral and enforceable parts of this Prospective Purchaser Consent Decree. The terms "Consent Decree" or "Decree" shall include all exhibits to this Prospective Purchaser Consent Decree.

V. FINDINGS OF FACTS

Ecology makes the following findings of fact without any express or implied admissions of such facts by Defendant:

A. The Site is located along the north shore of Lake Union, approximately three miles north of downtown Seattle, Washington. The Site is approximately three acres, and consists of the North Yard and the South Yard, which are separated by public streets North Northlake Place and North Northlake Way. The North Yard is bounded by North 34th Street on the north, Woodlawn Avenue North on the west, North Northlake Place and North Northlake Way on the south, and Densmore Avenue North on the east. The South Yard is bounded by North Northlake Place on the northeast, the Seattle Harbor Patrol on the southeast, Northlake Ship Builders on the northwest, and Lake Union on the southwest. The Site includes rights of way. A diagram of the Site, depicting the North and South Yards, is attached as Exhibit A.

B. Between approximately 1925 and 1982, the Site was used by Chevron Products Company, a division of Chevron U.S.A. Inc., (Chevron) and its predecessor, Standard Oil of California, as a bulk fuel storage and distribution facility. In 1982, King County Metro Transit (King County) purchased the Site from Chevron. King County is the current owner and

operator of the Site. The Site is currently used for office and shop space, storage, and parking. The North Yard is zoned industrial/commercial 45 (I/C 45). The South Yard is zoned I/C 45 with an urban maritime overlay.

C. Past operations at the Site resulted in the release of hazardous substances in soil and groundwater at the Site, including petroleum hydrocarbons and metals. The identified chemicals of concern that exceeded the cleanup levels established for the Site are more fully described and documented in prior environmental documents prepared for the Site, such as the Remedial Investigation/Feasibility Study prepared by Applied Geotechnology, Inc. in 1993, and the prior Cleanup Action Plan prepared by Foster Wheeler in 1998. These documents are on file with the Department of Ecology.

D. A number of remedial investigations have been conducted at the Site. In 1999, Ecology entered into a Consent Decree with King County and Chevron to conduct cleanup of soil and groundwater at the Site. *See Department of Ecology v. King County and Chevron Products Company*, King County Superior Court Cause No. 99-2-08651-1SEA (1999). The cleanup was divided into two phases. Phase I included removal of aboveground storage tanks and excavation and disposal of soil containing metals from sand blasting and painting activities. Confirmational sampling indicated that all soils with concentrations of metals were removed from the North Yard. The Phase II remediation included a variety of methods of bioremediation for petroleum hydrocarbons in soil and groundwater at the North and South Yards. Bioremediation methods including groundwater extraction, peroxide injection, and biosparging were conducted between 1999 and 2003, at which time they were discontinued. Bioremediation methods removed some but not all contaminants.

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E. Separate phase petroleum hydrocarbons, exceeding the cleanup levels previously established for the Site, continue to be observed in monitoring wells at the North and South Yards. Remediation of contaminated sediments will occur in Lake Union. Touchstone's remediation under this Decree would have a positive effect on managing a potential source of contamination to the sediments in Lake Union.

F. On July 19, 2006, Defendant entered into a purchase and sale agreement with King County to purchase a portion of the Site. Pursuant to the purchase and sale agreement, Defendant intends to purchase most of the North Yard (the Property). The purchase and sale agreement does not include the adjacent road rights of way. The legal description of the Property to be purchased by Defendant is attached as Exhibit C.

G. Defendant proposes to clean up the Property and construct a commercial office building on the Property, including a public viewing platform for the general public. The proposed commercial office building will be consistent with MTCA and its implementing regulations, Chapter 173-340 WAC.

H. As documented in the PPCD Cleanup Action Plan (CAP), attached as Exhibit D, the cleanup action to be implemented at the Property includes the excavation and disposal or thermal desorption of soils contaminated with petroleum hydrocarbons. Defendant has agreed to use Method A Unrestricted soil cleanup levels for the chemicals of concern on the Property. These are more stringent levels than the current Method C Industrial soil cleanup levels established for the Site. When the soil cleanup levels in the attached CAP have been met, the Restrictive Covenant previously placed on the Property by King County will be amended to eliminate restrictions on the Property that were based on use of industrial soil cleanup levels.

VI. WORK TO BE PERFORMED

This Decree contains a program designed to protect human health and the environment from the known release, or threatened release, of hazardous substances or contaminants at, on, or from the Property.

A. Defendant will excavate Impacted Soil, as described in the attached CAP, within the boundaries of the Property. Defendant will dispose of or treat these soils. Defendant will conduct monitoring at the bottom of the excavation and internal sidewalls to confirm that soil cleanup standards have been met within the Property boundaries.

B. Any soil contamination outside the boundaries of the Property, and any groundwater contamination throughout the Site except for new releases as described in Section XIX, remains the responsibility of King County and Chevron, and Defendant is not responsible for remediating any such contamination.

C. Upon meeting the soil cleanup levels established in the attached CAP, or completion of other approved remedial action following a disproportionate cost analysis under section 4.4 of the CAP, Defendant may record an amended Restrictive Covenant as described in Section XXI.

D. Defendant agrees not to perform any remedial actions on the Property outside the scope of this Decree unless the Parties agree to modify the Scope of Work and Schedule in the CAP (Exhibit D) to cover these actions. All work conducted by Defendant under this Decree shall be done in accordance with Chapter 173-340 WAC unless otherwise provided herein.

VII. DESIGNATED PROJECT COORDINATORS

The project coordinator for Ecology is:

Maura S. O'Brien
PG/Hg #869, Professional Geologist/Hydrogeologist
3190 – 160th Avenue S.E.
Bellevue, WA 98008-5452
(425) 649-7249

The project coordinator for Defendant is:

Douglas Howe
President
Touchstone Corporation
2025 First Avenue, Suite 790
Seattle, WA 98121
(206) 727-2394

Each project coordinator shall be responsible for overseeing the implementation of this Decree. Ecology's project coordinator will be Ecology's designated representative for the Site. To the maximum extent possible, communications between Ecology and Defendant and all documents, including reports, approvals, and other correspondence concerning the activities performed pursuant to the terms and conditions of this Decree shall be directed through the project coordinators. The project coordinators may designate, in writing, working level staff contacts for all or portions of the implementation of the work to be performed required by this Decree.

Any party may change its respective project coordinator. Written notification shall be given to the other party at least ten (10) calendar days prior to the change.

VIII. PERFORMANCE

All geologic and hydrogeologic work performed pursuant to this Decree shall be under the supervision and direction of a geologist licensed in the State of Washington or under the direct supervision of an engineer registered in the State of Washington, except as otherwise provided for by Chapters 18.220 and 18.43 RCW.

All engineering work performed pursuant to this Decree shall be under the direct supervision of a professional engineer registered in the State of Washington, except as otherwise provided for by RCW 18.43.130.

All construction work performed pursuant to this Decree shall be under the direct supervision of a professional engineer or a qualified technician under the direct supervision of a professional engineer. The professional engineer must be registered in the State of Washington, except as otherwise provided for by RCW 18.43.130.

Any documents submitted containing geologic, hydrologic or engineering work shall be under the seal of an appropriately licensed professional as required by Chapter 18.220 RCW or RCW 18.43.130.

Defendant shall notify Ecology in writing of the identity of any engineer(s) and geologist(s), contractor(s) and subcontractor(s), and others to be used in carrying out the terms of this Decree, in advance of their involvement at the Property.

IX. CERTIFICATION OF DEFENDANT

Defendant represents and certifies that, to the best of its knowledge and belief, it has fully and accurately disclosed to Ecology the information currently in its possession or control that relates to the environmental conditions at and in the vicinity of the Property, or to Defendant's right and title thereto.

Defendant represents and certifies that it did not cause or contribute to a release or threatened release of hazardous substances at the Site and is not otherwise currently potentially liable for the Site under RCW 70.105D.040(1).

X. ACCESS

Ecology or any Ecology authorized representative shall have full authority to enter and freely move about all property at the Site that Defendant either owns, controls, or has access rights to at all reasonable times for the purposes of, *inter alia*: inspecting records, operation logs, and contracts related to the work being performed pursuant to this Decree; reviewing Defendant's progress in carrying out the terms of this Decree; conducting such tests or collecting such samples as Ecology may deem necessary; using a camera, sound recording, or other documentary type equipment to record work done pursuant to this Decree; and verifying the data submitted to Ecology by Defendant. Ecology or any Ecology authorized representative shall give reasonable (at least 24 hours) notice before entering any portion of the Property owned or controlled by Defendant unless an emergency prevents such notice. All

Parties who access the Property pursuant to this Section shall comply with any applicable Health and Safety Plan(s). Ecology employees and their representatives shall not be required to sign any liability release or waiver as a condition of Property access.

XI. SAMPLING, DATA SUBMITTAL, AND AVAILABILITY

With respect to the implementation of this Decree, Defendant shall make the results of all sampling, laboratory reports, and/or test results generated by it or on its behalf available to Ecology. Pursuant to WAC 173-340-840(5), all sampling data shall be submitted to Ecology in both printed and electronic formats in accordance with Section XII (Progress Reports), Ecology's Toxics Cleanup Program Policy 840 (Data Submittal Requirements), and/or any subsequent procedures specified by Ecology for data submittal.

If requested by Ecology, Defendant shall allow Ecology and/or its authorized representative to take split or duplicate samples of any samples collected by Defendant pursuant to the implementation of this Decree. Defendant shall notify Ecology seven (7) days in advance of any sample collection or work activity at the Property. Ecology shall, upon request, allow Defendant and/or its authorized representative to take split or duplicate samples of any samples collected by Ecology pursuant to the implementation of this Decree, provided that doing so does not interfere with Ecology's sampling. Without limitation on Ecology's rights under Section X (Access), Ecology shall notify Defendant prior to any sample collection activity unless an emergency prevents such notice.

In accordance with WAC 173-340-830(2)(a), all hazardous substance analyses shall be conducted by a laboratory accredited under Chapter 173-50 WAC for the specific analyses to be conducted, unless otherwise approved by Ecology.

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XII. PROGRESS REPORTS

Defendant shall submit to Ecology written monthly Progress Reports that describe the actions taken during the previous month to implement the requirements of this Decree. The Progress Reports shall include the following:

A. A list of on-Property activities that have taken place during the month;

B. Detailed description of any deviations from required tasks not otherwise documented in project plans or amendment requests;

C. Description of all deviations from the Scope of Work and Schedule in the Cleanup Action Plan (Exhibit D) during the current month and any planned deviations in the upcoming month;

D. For any deviations from the schedule, a plan for recovering lost time and maintaining compliance with the schedule;

E. All raw data (including laboratory analyses) received by Defendant during the past month and an identification of the source of the sample; and

F. A list of deliverables for the upcoming month if different from the schedule.

All Progress Reports shall be submitted by the tenth (10th) day of the month in which they are due after the effective date of this Decree. Unless otherwise specified, Progress Reports and any other documents submitted pursuant to this Decree shall be sent by certified mail, return receipt requested, to Ecology's project coordinator.

XIII. RETENTION OF RECORDS

During the pendency of this Decree, and for ten (10) years from the date this Decree is no longer in effect as provided in Section XXX (Effective Date), Defendant shall preserve all records, reports, documents, and underlying data in its possession relevant to the implementation of this Decree and shall insert a similar record retention requirement into all

contracts with project contractors and subcontractors. Upon request of Ecology, Defendant shall make all records available to Ecology and allow access for review within a reasonable time.

XIV. TRANSFER OF INTEREST IN PROPERTY

Prior to Defendant's transfer of any interest in all or any portion of the Property, and during the effective period of this Decree, Defendant shall provide a copy of this Decree to any prospective purchaser, lessee, transferee, assignee, or other successor in said interest; and, at least thirty (30) days prior to any transfer, Defendant shall notify Ecology of said transfer. Upon transfer of any interest, Defendant shall restrict uses and activities to those consistent with this Consent Decree and notify all transferees of the restrictions on the use of the property.

XV. RESOLUTION OF DISPUTES

A. In the event a dispute arises as to an approval, disapproval, proposed change, or other decision or action by Ecology's project coordinator, or an itemized billing statement under Section XXV (Remedial Action Costs), the Parties shall utilize the dispute resolution procedure set forth below.

1. Upon receipt of Ecology's project coordinator's written decision, or the itemized billing statement, Defendant has fourteen (14) days within which to notify Ecology's project coordinator in writing of its objection to the decision or itemized statement.

2. The Parties' project coordinators shall then confer in an effort to resolve the dispute. If the project coordinators cannot resolve the dispute within fourteen (14) days, Ecology's project coordinator shall issue a written decision.

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3. Defendant may then request regional management review of the decision. This request shall be submitted in writing to the Northwest Region Toxics Cleanup Program Section Manager within seven (7) days of receipt of Ecology's project coordinator's decision.

4. Ecology's Regional Section Manager shall conduct a review of the dispute and shall endeavor to issue a written decision regarding the dispute within thirty (30) days of Defendant's request for review.

5. If Defendant finds Ecology's Regional Section Manager's decision unacceptable, Defendant may then request final management review of the decision. This request shall be submitted in writing to the Toxics Cleanup Program Manager within seven (7) days of receipt of the Regional Section Manager's decision.

6. Ecology's Toxics Cleanup Program Manager shall conduct a review of the dispute and shall endeavor to issue a written decision regarding the dispute within thirty (30) days of Defendant's request for review of the Regional Section Manager's decision. The Toxics Cleanup Program Manager's decision shall be Ecology's final decision on the disputed matter.

B. If Ecology's final written decision is unacceptable to Defendant, Defendant has the right to submit the dispute to the Court for resolution. The Parties agree that one judge should retain jurisdiction over this case and shall, as necessary, resolve any dispute arising under this Decree. In the event Defendant presents an issue to the Court for review, the Court shall review the action or decision of Ecology on the basis of whether such action or decision was arbitrary and capricious and render a decision based on such standard of review.

C. The Parties agree to only utilize the dispute resolution process in good faith and agree to expedite, to the extent possible, the dispute resolution process whenever it is used. Where either party utilizes the dispute resolution process in bad faith or for purposes of delay, the other party may seek sanctions.

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D. Implementation of these dispute resolution procedures shall not provide a basis for delay of any activities required in this Decree, unless Ecology agrees in writing to a schedule extension or the Court so orders.

XVI. AMENDMENT OF DECREE

The project coordinators may agree to minor changes to the work to be performed without formally amending this Decree. Minor changes will be documented in writing by Ecology.

Substantial changes to the work to be performed shall require formal amendment of this Decree. This Decree may only be formally amended by a written stipulation among the Parties that is entered by the Court, or by order of the Court. Such amendment shall become effective upon entry by the Court. Agreement to amend the Decree shall not be unreasonably withheld by any party.

Defendant shall submit a written request for amendment to Ecology for approval. Ecology shall indicate its approval or disapproval in writing in a timely manner after the written request for amendment is received. If the amendment to the Decree is a substantial change, Ecology will provide public notice and opportunity for comment. Reasons for the disapproval of a proposed amendment to the Decree shall be stated in writing. If Ecology does not agree to a proposed amendment, the disagreement may be addressed through the dispute resolution procedures described in Section XV (Resolution of Disputes).

XVII. EXTENSION OF SCHEDULE

A. An extension of schedule shall be granted only when a request for an extension is submitted in a timely fashion, generally at least thirty (30) days prior to expiration of the deadline for which the extension is requested, and good cause exists for granting the extension. All extensions shall be requested in writing. The request shall specify:

1. The deadline that is sought to be extended;

2. The length of the extension sought;

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3. The reason(s) for the extension; and

4. Any related deadline or schedule that would be affected if the extension were granted.

B. The burden shall be on Defendant to demonstrate to the satisfaction of Ecology that the request for such extension has been submitted in a timely fashion and that good cause exists for granting the extension. Good cause may include, but may not be limited to:

1. Circumstances beyond the reasonable control and despite the due diligence of Defendant including delays caused by unrelated third parties or Ecology, such as (but not limited to) delays by Ecology in reviewing, approving, or modifying documents submitted by Defendant; or

2. Acts of God, including fire, flood, blizzard, extreme temperatures, storm, or other unavoidable casualty; or

3. Endangerment as described in Section XVIII (Endangerment).

However, neither increased costs of performance of the terms of this Decree nor changed economic circumstances shall be considered circumstances beyond the reasonable control of Defendant.

C. Ecology shall act upon any written request for extension in a timely fashion. Ecology shall give Defendant written notification of any extensions granted pursuant to this Decree. A requested extension shall not be effective until approved by Ecology or, if required, by the Court. Unless the extension is a substantial change, it shall not be necessary to amend this Decree pursuant to Section XVI (Amendment of Decree) when a schedule extension is granted.

D. An extension shall only be granted for such period of time as Ecology determines is reasonable under the circumstances. Ecology may grant schedule extensions exceeding ninety (90) days only as a result of:

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1. Delays in the issuance of a necessary permit which was applied for in a timely manner;

2. Other circumstances deemed exceptional or extraordinary by Ecology; or

3. Endangerment as described in Section XVIII (Endangerment).

XVIII. ENDANGERMENT

In the event Ecology determines that any activity being performed at the Property is creating or has the potential to create a danger to human health or the environment, Ecology may direct Defendant to cease such activities for such period of time as it deems necessary to abate the danger. Defendant shall immediately comply with such direction.

In the event Defendant determines that any activity being performed at the Property is creating or has the potential to create a danger to human health or the environment, Defendant may cease such activities. Defendant shall notify Ecology's project coordinator as soon as possible, but no later than twenty-four (24) hours after making such determination or ceasing such activities. Upon Ecology's direction, Defendant shall provide Ecology with documentation of the basis for the determination or cessation of such activities. If Ecology disagrees with Defendant's cessation of activities, it may direct Defendant to resume such activities.

If Ecology concurs with or orders a work stoppage pursuant to this Section, Defendant's obligations with respect to the ceased activities shall be suspended until Ecology determines the danger is abated, and the time for performance of such activities, as well as the time for any other work dependent upon such activities, shall be extended, in accordance with Section XVII (Extension of Schedule), for such period of time as Ecology determines is reasonable under the circumstances.

Nothing in this Decree shall limit the authority of Ecology, its employees, agents, or contractors to take or require appropriate action in the event of an emergency.

XIX. COVENANT NOT TO SUE

A. Covenant Not to Sue: In consideration of Defendant's compliance with the terms and conditions of this Decree, Ecology covenants not to institute legal or administrative actions against Defendant regarding the Matters Addressed in this Decree.

The Matters Addressed in this Decree cover current, threatened, or future releases except as described in the following paragraph, of hazardous substances on or from the Site identified in the Site Diagram (Exhibit A), which includes any current, threatened, or future releases of hazardous substances from the Site to the water or sediments in Lake Union. The Matters Addressed in this Decree only include those hazardous substances that Ecology knows as of the date of entry of this Decree are or were located at the Site. This Decree does not cover any other hazardous substance or area. Ecology retains all of its authority relative to any substance or area not covered by the Matters Addressed in this Decree. In addition, this Decree does not settle any potential liability Defendant may incur for acquiring any further interest in the Site not addressed under this Decree.

"Future releases" under this Covenant Not to Sue does not include any new release of a hazardous substance into the soil or groundwater at the Property by Defendant after the date of entry of this Decree. A "new release" is a release by Defendant of a hazardous substance that is not already located in soil or groundwater (e.g. a new spill of petroleum from Defendant's equipment, or the puncture by Defendant of a tank or drum containing hazardous substances which causes a release). Migration or other movement in soil or groundwater of a hazardous substance that exists at the Site as of the entry of this Decree is not considered a new release and is a Matter Addressed by this Decree and within the scope of the Covenant Not to Sue.

This Covenant Not to Sue shall have no applicability whatsoever to:

1. Criminal liability;
2. Liability for damages to natural resources;

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3. Any Ecology action, including cost recovery, against PLPs not a party to this Decree.

If factors not known at the time of entry of this Decree are discovered and present a previously unknown threat to human health or the environment, the Court shall amend this covenant not to sue.

B. Reopeners: Ecology specifically reserves the right to institute legal or administrative action against Defendant to require it to perform additional remedial actions at the Site and to pursue appropriate cost recovery, pursuant to RCW 70.105D.050 under the following circumstances:

1. Upon Defendant's failure to meet the requirements of this Decree, including, but not limited to, failure of the remedial action to meet the cleanup standards identified in the Cleanup Action Plan (Exhibit D); or

2. Upon the availability of new information regarding factors previously unknown to Ecology that present a previously unknown threat to human health or the environment, and Ecology determines, in light of this information, that further remedial action is necessary at the Site to protect human health or the environment.

C. Except in the case of an emergency, prior to instituting legal or administrative action against Defendant pursuant to this Section, Ecology shall provide Defendant with thirty (30) calendar days notice of such action.

XX. CONTRIBUTION PROTECTION

With regard to claims for contribution against Defendant, the Parties agree that Defendant is entitled to protection against claims for contribution for Matters Addressed in this Decree as provided by RCW 70.105D.040(4)(d), and as described in Section XIX.A. Section I.D of the consent decree between Ecology, King County, and Chevron, *Department of Ecology v. King County and Chevron Products Company*, King County Superior Court Cause

No. 99-2-08651-1SEA (1999), does not modify the contribution protection provided in this Section.

XXI. LAND USE RESTRICTIONS

Upon meeting the soil cleanup levels established in the CAP, Defendant may record an amendment to the existing Restrictive Covenant substantially in the form of Exhibit E with the office of the King County Auditor. The amendment shall remove restrictions that were placed on the Property due to use of Method C Industrial soil cleanup levels under the existing Consent Decree with King County and Chevron. Defendant shall provide Ecology with a copy of the recorded amended Restrictive Covenant within thirty (30) days of the recording date. If Touchstone leaves contamination below the smear zone as part of its approved remedial action, using the process described in section 4.4 of the CAP, upon completion of the approved remedial action, Touchstone may record an amendment to the existing Restrictive Covenant that: (1) modifies restriction number 3 so that it limits future development of the Property to industrial uses, and to commercial uses that do not result in disturbance or exposure of Impacted Soil on the Property that is covered by Touchstone's development, without Ecology approval; and (2) modifies restriction number 4 so that it only restricts excavation that will disturb any Impacted Soil remaining on the Property without Ecology approval.

XXII. FINANCIAL ASSURANCES

At least thirty (30) days before removing the buildings, asphalt and concrete ("Existing Surface") that currently cover the Property, Defendant shall acquire and maintain a financial assurance mechanism in an amount adequate to cover costs associated with installing a temporary or 5-year cover if work is delayed or stopped after the Existing Surface or portion thereof is removed as described in the CAP, Exhibit D. The estimated amount of a temporary or a 5-year cover is described in the CAP. The financial assurance mechanisms that Touchstone may use are a security agreement and assignment of bank account (substantially in the form set forth in Exhibit F), a letter of credit, or a bond. Any funds set aside under a

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financial assurance mechanism pursuant to this Section shall be released by Ecology not later than when the slab on grade is constructed. Recourse by Ecology to any financial assurances provided under this Section shall not affect any remedies provided in this Decree or which are available to Ecology in law or equity.

In the event Defendant chooses to submit a letter of credit as financial assurance, the following terms shall apply.

A. The letter of credit shall be a clean, irrevocable and unconditional standby letter of credit in a form acceptable to Ecology in its sole discretion issued by a bank approved by Ecology in its sole judgment in favor of Ecology.

B. Ecology shall have the unconditional right to draw against the Letter of Credit in full or in part upon the occurrence of Defendant's failure to perform its obligation set forth above.

C. Ecology will hold the draw proceeds in its own name and for its own account, without liability for interest, as security for the performance of Defendant under this Decree.

XXIII. INDEMNIFICATION

Defendant agrees to indemnify and save and hold the State of Washington, its employees, and agents harmless from any and all claims or causes of action for death or injuries to persons or for loss or damage to property to the extent arising from or on account of acts or omissions of Defendant, its officers, employees, agents, or contractors in entering into and implementing this Decree. However, Defendant shall not indemnify the State of Washington nor save nor hold its employees and agents harmless from any claims or causes of action to the extent arising out of the negligent acts or omissions of the State of Washington, or the employees or agents of the State, in entering into or implementing this Decree.

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XXIV. COMPLIANCE WITH APPLICABLE LAWS

A. Pursuant to RCW 70.105D.090(1), Defendant is exempt from the procedural requirements of Chapters 70.94, 70.95, 70.105, 77.55, 90.48, and 90.58 RCW and of any laws requiring or authorizing local government permits or approvals. However, Defendant shall comply with the substantive requirements of such permits or approvals. The exempt permits or approvals and the applicable substantive requirements of those permits or approvals, as they are known at the time of entry of this Decree, have been identified in the CAP (Exhibit D).

B. Defendant has a continuing obligation to determine whether additional permits or approvals addressed in RCW 70.105D.090(1) would otherwise be required for the remedial action under this Decree. In the event either Defendant or Ecology determines that additional permits or approvals addressed in RCW 70.105D.090(1) would otherwise be required for the remedial action under this Decree, it shall promptly notify the other party of this determination. Ecology shall determine whether Ecology or Defendant shall be responsible to contact the appropriate state and/or local agencies. If Ecology so requires, Defendant shall promptly consult with the appropriate state and/or local agencies and provide Ecology with written documentation from those agencies of the substantive requirements those agencies believe are applicable to the remedial action. Ecology shall make the final determination on the additional substantive requirements that must be met by Defendant and on how Defendant must meet those requirements. Ecology shall inform Defendant in writing of these requirements. Once established by Ecology, the additional requirements shall be enforceable requirements of this Decree. Defendant shall not begin or continue the remedial action potentially subject to the additional requirements until Ecology makes its final determination.

C. Pursuant to RCW 70.105D.090(2), in the event Ecology determines that the exemption from complying with the procedural requirements of the laws referenced in RCW 70.105D.090(1) would result in the loss of approval from a federal agency that is necessary for the State to administer any federal law, the exemption shall not apply and Defendant shall

comply with both the procedural and substantive requirements of the laws referenced in RCW 70.105D.090(1), including any requirements to obtain permits.

XXV. REMEDIAL ACTION COSTS

Defendant shall pay to Ecology costs incurred by Ecology for negotiating this Decree with Touchstone Corporation (but not costs of negotiating with King County or Chevron concerning their consent decree), reviewing plans and performing public participation from November 1, 2006 until the Consent Decree is entered, and such further costs incurred pursuant to this Decree and consistent with WAC 173-340-550(2). These costs shall include work performed by Ecology or its contractors for, or on, the Property under Chapter 70.105D RCW, including remedial actions and Decree preparation, negotiation, oversight and administration. These costs shall include work performed both prior to and subsequent to the entry of this Decree. Ecology's costs shall include costs of direct activities and support costs of direct activities as defined in WAC 173-340-550(2). Defendant shall pay the required amount within ninety (90) days of receiving from Ecology an itemized statement of costs that includes a summary of costs incurred, an identification of involved staff, and the amount of time spent by involved staff members on the project. A general statement of work performed will be provided upon request. Itemized statements shall be prepared quarterly. Pursuant to WAC 173-340-550(4), failure to pay Ecology's costs within ninety (90) days of receipt of the itemized statement of costs will result in interest charges at the rate of twelve percent (12%) per annum, compounded monthly.

Pursuant to RCW 70.105D.055, Ecology has authority to recover unreimbursed remedial action costs by filing a lien against real property subject to the remedial actions.

XXVI. IMPLEMENTATION OF REMEDIAL ACTION

If Ecology determines that Defendant has failed without good cause to implement the remedial action, in whole or in part, Ecology may, after notice to Defendant, perform any or all portions of the remedial action that remain incomplete. If Ecology performs all or portions of

the remedial action because of Defendant's failure to comply with the obligations under this Decree, Defendant shall reimburse Ecology for the costs of doing such work in accordance with Section XXV (Remedial Action Costs), provided that Defendant is not obligated under this Section to reimburse Ecology for costs incurred for work inconsistent with or beyond the scope of this Decree.

Except where necessary to abate an emergency situation, Defendant shall not perform any remedial actions at the Property outside those remedial actions required by this Decree, unless Ecology concurs, in writing, with such additional remedial actions pursuant to Section XVI (Amendment of Decree).

XXVII. PUBLIC PARTICIPATION

Ecology shall maintain the responsibility for public participation at the Site. However, Defendant shall cooperate with Ecology, and shall:

A. If agreed to by Ecology, develop appropriate mailing list, prepare drafts of public notices and fact sheets at important stages of the remedial action, such as the submission of work plans, remedial investigation/feasibility study reports, cleanup action plans, and engineering design reports. As appropriate, Ecology will edit, finalize, and distribute such fact sheets and prepare and distribute public notices of Ecology's presentations and meetings.

B. Notify Ecology's project coordinator prior to the preparation of all press releases and fact sheets, and before major meetings with the interested public and local governments. Likewise, Ecology shall notify Defendant prior to the issuance of all press releases and fact sheets, and before major meetings with the interested public and local governments. For all press releases, fact sheets, meetings, and other outreach efforts by Defendant that do not receive prior Ecology approval, Defendant shall clearly indicate to its audience that the press release, fact sheet, meeting, or other outreach effort was not sponsored or endorsed by Ecology.

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C. When requested by Ecology, participate in public presentations on the progress of the remedial action at the Site. Participation may be through attendance at public meetings to assist in answering questions, or as a presenter.

D. When requested by Ecology, arrange and/or continue information repositories at the following locations:

1. Touchstone Corporation
2025 First Avenue, Suite 790
Seattle, Washington

2. Ecology's Northwest Regional Office
3190 – 160th Avenue SE
Bellevue, Washington

At a minimum, copies of all public notices, fact sheets, and press releases; all quality assured monitoring data; remedial actions plans and reports; supplemental remedial planning documents, and all other similar documents relating to performance of the remedial action required by this Decree shall be promptly placed in these repositories.

XXVIII. DURATION OF DECREE

The remedial program required pursuant to this Decree shall be maintained and continued until Defendant has received written notification from Ecology that the requirements of this Decree have been satisfactorily completed. This Decree shall remain in effect until dismissed by the Court. When dismissed, Section XIX (Covenant Not to Sue) and Section XX (Contribution Protection) shall survive.

XXIX. CLAIMS AGAINST THE STATE

Defendant hereby agrees that it will not seek to recover any costs accrued in implementing the remedial action required by this Decree from the State of Washington or any of its agencies; and further, that Defendant will make no claim against the State Toxics Control

Account or any local Toxics Control Account for any costs incurred in implementing this Decree. Except as provided above, however, Defendant expressly reserves its right to seek to recover any costs incurred in implementing this Decree from any other PLP. This Section does not limit or address funding that may be provided under Chapter 173-322 WAC.

XXX. EFFECTIVE DATE

This Decree is effective only upon the date (Effective Date) that title to the Property vests in Defendant, following entry of this Decree by the Court. If Defendant does not purchase the Property this Decree shall be null and void, and Defendant will be under no obligation to perform the work required by this Decree. In such event, the Parties will jointly move the Court to dismiss the cause of action and to declare the Decree null and void.

XXXI. WITHDRAWAL OF CONSENT

If the Court withholds or withdraws its consent to this Decree, it shall be null and void at the option of any party and the accompanying Complaint shall be dismissed without costs and without prejudice. In such an event, no party shall be bound by the requirements of this Decree.

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

JAMES J. PENDOWSKI
Program Manager
Toxics Cleanup Program
(360) 407-7177

Date: 4/5/07

ROB McKENNA
Attorney General

JAMES R. SCHWARTZ
Assistant Attorney General
(360) 586-4619

Date: 4-6-07

TOUCHSTONE CORPORATION

Douglas O. Howe
President
(206) 727-2393

Date: 1/19/07

ENTERED this 20 day of July 2007.

JUDGE
King County Superior Court

ERIC WATNESS

JUL 20 2007

COURT COMMISSIONER

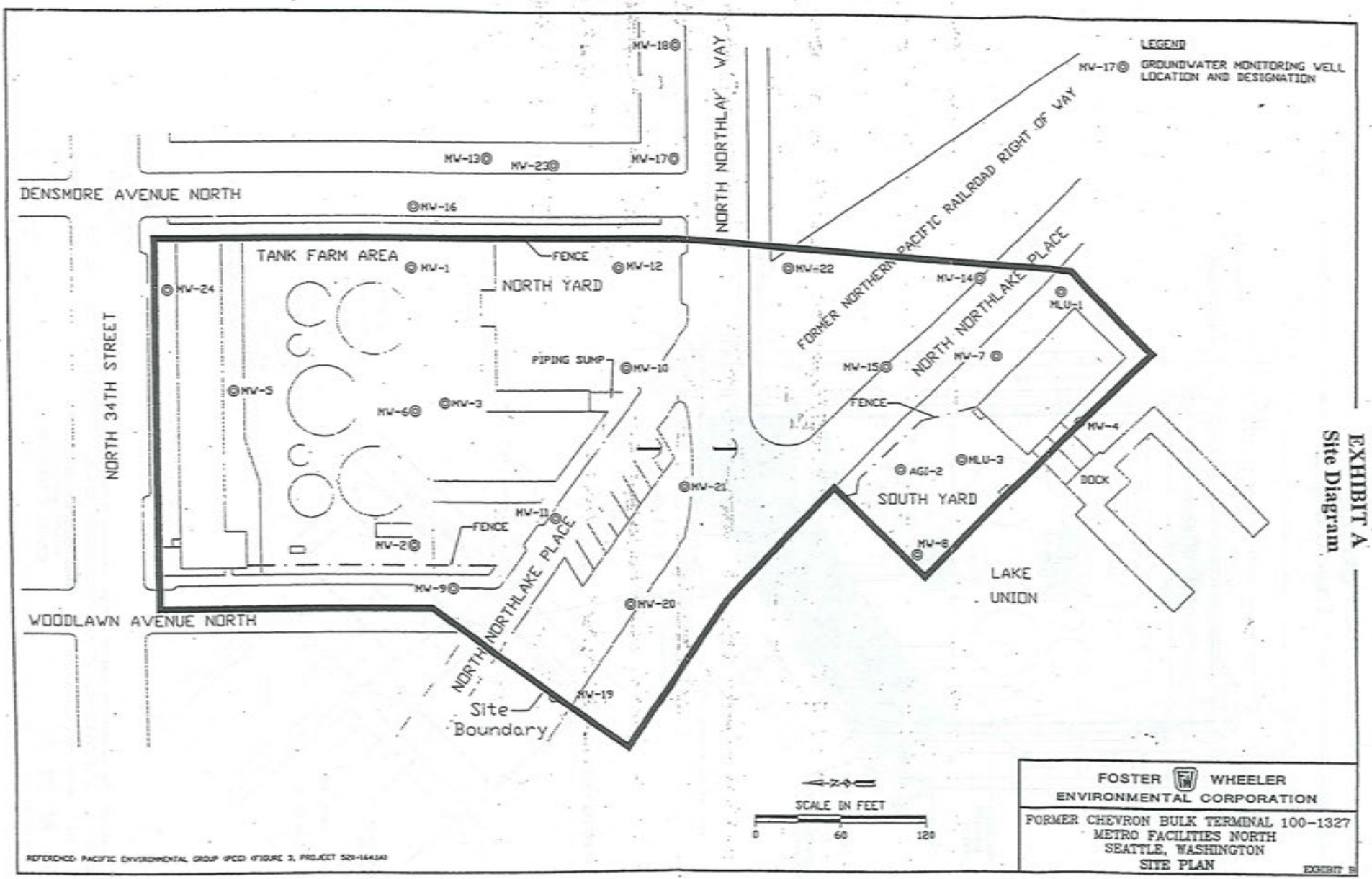
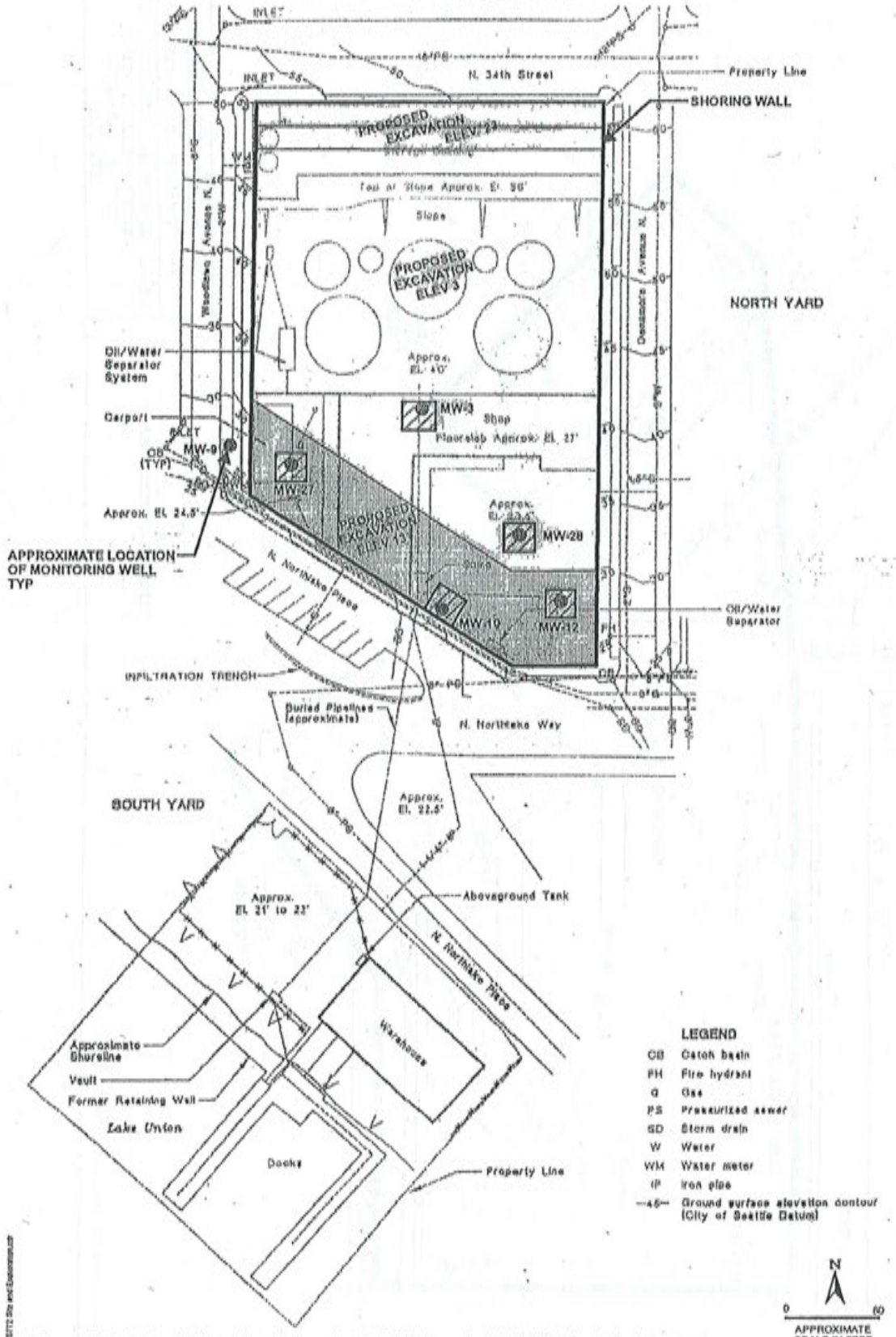


EXHIBIT A
Site Diagram

EXHIBIT B
Property Diagram



LEGEND

CB	Catch basin
FH	Fire hydrant
G	Gas
PS	Pressurized sewer
SD	Storm drain
W	Water
WM	Water meter
IP	Iron pipe
—45—	Ground surface elevation contour (City of Seattle Datum)

N

0 60

APPROXIMATE SCALE IN FEET

Reference: Metro Site Plan - Existing and New, drawing number G102, dated December 1991, Applied Geotechnology Inc.

Associated Earth Sciences, Inc.

BUILDING EXCAVATION PLAN
NORTH LAKE UNION
SEATTLE, WASHINGTON

FIGURE 2
DATE 9/06
PROJ. NO. KE03772A

EXHIBIT C

Department of Ecology v. Touchstone Corporation
Prospective Purchaser Consent Decree

Legal Description of Property

LOTS 1 THROUGH 12, INCLUSIVE, BLOCK 74, LAKE UNION ADDITION TO THE CITY OF SEATTLE, ACCORDING TO THE PLAT THEREOF, RECORDED IN VOLUME 1 OF THE PLATS, PAGE 238, IN KING COUNTY, WASHINGTON

EXHIBIT D

Department of Ecology v. Touchstone Corporation
Cleanup Action Plan

Geotechnical Engineering

Water Resources

Environmental Assessments and Remediation

Sustainable Development Services

Geologic Assessments

Associated Earth Sciences, Inc.

Celebrating 25 Years of Service

Cleanup Action Plan

METRO LAKE UNION NORTH YARD PROPERTY CLEANUP SITE

Seattle, Washington

Prepared for

Touchstone Corporation

Project No. KV03772A
January 18, 2007

CLEANUP ACTION PLAN

METRO LAKE UNION NORTH YARD PROPERTY CLEANUP SITE

Seattle, Washington

Prepared for:
Touchstone Corporation
2025 First Avenue, Suite 790
Seattle, Washington 98121

Prepared by:
Associated Earth Sciences, Inc.
911 5th Avenue, Suite 100
Kirkland, Washington 98033
425-827-7701
Fax: 425-827-5424

January 18, 2007
Project No. KV03772A

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1.0 INTRODUCTION

1.1 Purpose and Scope

Touchstone Corporation (Touchstone) intends to purchase the portion of the Metro Lake Union Cleanup Site (hereafter "the Site") known as the North Yard except for the adjacent road rights of way (hereafter "the Property" or "the North Yard Property"). Touchstone intends to construct an office building at the Property. The Property is currently owned by King County/Municipality of Metropolitan Seattle (Metro). The Property will be covered with a building, which will include underground parking.

The entire Metro Lake Union Cleanup Site, including the North and South Yards, was subject to prior cleanup actions by King County and Chevron under a consent decree with the Washington State Department of Ecology (hereafter King County/Chevron Consent Decree). However, petroleum hydrocarbon concentrations in soils and groundwater on the North Yard Property still exceed the cleanup levels for the Site. Ultimately, Touchstone intends to remediate the soil contamination that remains on the Property under a Prospective Purchaser Consent Decree (PPCD) entered into with the Washington State Department of Ecology (Ecology) under the Model Toxics Control Act (MTCA), and receive from Ecology a written determination that Touchstone's cleanup obligations under the PPCD have been met and that no further action by Touchstone is necessary. This PPCD only requires Touchstone to remediate soil contamination within the boundaries of the Property it purchases, and does not address off-Property soil contamination, including road rights of way in the North Yard Property and all of the South Yard of the Site. Touchstone will conduct dewatering activities, including groundwater testing and disposal, during excavation if subsurface conditions require dewatering, as described in Section 4.3. Touchstone will not be responsible for monitoring or remediation of any off-Property soil contamination, nor be responsible for any groundwater contamination remaining after construction on or off the Property at the Site except as noted in the PPCD, which will remain the responsibility of Chevron and King County/Metro.

This Cleanup Action Plan (CAP) includes the following elements:

- A summary of the nature and extent of chemicals at the Property;
- A discussion of exposure pathways for chemicals of concern;
- The cleanup levels for the Property;
- A detailed description of the selected alternative;
- The compliance monitoring and reporting requirements;

- A schedule;
- An Environmental Contingency Plan (ECP) that is intended to provide guidance for construction contractors regarding practices and procedures to protect workers, the public, and the environment from chemical exposures during construction; and
- A Compliance Monitoring and Sampling and Analysis plan (SAP) that describes how samples will be collected and tested.

This plan does not address asbestos containing materials (ACMs) or lead-based paint (LBP), both of which are known to be present in buildings at the Property. These buildings are to be removed prior to construction. Hazards and appropriate mitigation guidelines associated with ACM and LBP are fairly standard and should be addressed by demolition contractors that specialize in ACM and LBP abatement.

1.2 Location and Setting

As shown on Figure 1, the Site is located in Seattle, Washington, with an address of 1602 North Northlake Place. As shown on Figure 2, the Property is located between North 34th Street (to the north) and North Northlake Place (to the south), and between Woodlawn Avenue North (to the west) and Densmore Avenue North (to the east). The address of the Property is 3301 Densmore Avenue North. The Property is approximately 300 feet long (north to south) and 220 feet wide (east to west). The Property slopes to the southwest with elevations between 25 feet above average mean sea level (amsl) and 60 feet amsl. The soils beneath the Property are primarily glacial till, recessional sand, and fill in places. Depth to groundwater has ranged from 6 to 16 feet below ground surface in recent years (Science Applications International Corporation [SAIC], 2006). Groundwater monitoring wells generally provide a short-term yield estimated at 2 gallons per minute (gpm) with a range of 0.5 to 3.0 gpm.

The Touchstone Property is most of the northern portion (referred to as the North Yard) of a larger property currently owned by King County/Metro. King County/Metro also owns property south of North Northlake Place referred to as the South Yard. This CAP only addresses the property to be purchased by Touchstone at the North Yard. Previously, the entire King County/Metro property was a bulk fuels terminal built by Standard Oil Company of California (Standard), a predecessor to Chevron, in 1925. Standard/Chevron used the facility for storage and distribution of bulk petroleum-based fuels and oils, and various containerized petroleum products until the property was sold to King County/Metro in 1982. The entire property currently owned by King County, both the North and South Yards, has been designated as a cleanup site, known as the Metro Lake Union Site.

1.3 Previous Environmental Assessments and Cleanup Actions

Several environmental assessments were conducted by several environmental consultants in the early 1990s to assess the extent of contamination at the Metro Lake Union Site. These reports and additional work performed by Applied Geotechnology, Inc. (AGI), were summarized in a Remedial Investigation/Feasibility Study (RI/FS) (AGI, 1993).

Additional work was conducted following the RI/FS, culminating in the Cleanup Action Plan completed in 1998 (Foster Wheeler, 1998). In 1999, King County and Chevron entered into a Consent Decree with Ecology to implement the Cleanup Action Plan and clean up the Metro Lake Union Site. Remediation of the site was divided into Phase I and Phase II. Phase I included removal of the aboveground storage tanks (ASTs) along with associated piping and structures, followed by excavation and off-site disposal of shallow soil containing metals from AST sand blasting and painting activities. Phase II included a variety of methods to increase bioremediation of soil and groundwater containing petroleum hydrocarbons. Phase II also included groundwater monitoring, institutional controls, and restrictive covenants.

AST removal and Phase I soil excavation and disposal was conducted in 1999. Confirmation sampling following soil excavation indicated that all soils with concentrations of metals in excess of cleanup levels were removed (AGI, 2000). The Phase II bioremediation system included groundwater extraction, peroxide injection, and biosparging that were conducted between 1999 and 2003. These methods were successful in removing some, but not all, of the contamination. Concentrations of petroleum hydrocarbons exceed the current Method C Industrial soil cleanup levels for the Site, as demonstrated by the presence of separate phase hydrocarbons (SPH) in the following monitoring wells located in the North Yard (SAIC, 2006):

MW-3
MW-9
MW-10
MW-11
MW-12
MW-27
MW-28

Cleanup levels were set for groundwater at the Site based on protection of surface water, as discussed in detail in the RI/FS (AGI 1993) and the previous CAP for the existing site (Foster Wheeler 1998). Although some reduction in groundwater concentrations have been accomplished over the years, separate phase hydrocarbons are still observed in some wells and groundwater concentrations still exceed cleanup levels for the Site. This Cleanup Action Plan for the North Yard Property does not address groundwater contamination at the Site. Except for "new releases" as described in the PPCD, Touchstone is not responsible for groundwater

monitoring and any necessary further remediation at the Site, which responsibility remains with King County/Metro and Chevron subject to their Consent Decree with Ecology. However, it is expected that Touchstone's remediation of petroleum contaminated soil to the bottom of the smear zone at its Property will remove potential source material and thereby improve the groundwater at the Site.

2.0 NATURE AND EXTENT OF CHEMICAL CONSTITUENTS OF CONCERN FOR SOIL

This section provides a summary of the nature and extent of remaining chemicals of concern (COCs) for soil at the North Yard Property.

Soil samples were collected at numerous locations and depths across the Property. Although metals and polycyclic aromatic hydrocarbons (PAHs) were detected in shallow soil near the former AST locations, this soil was removed as part of the Phase I cleanup. Soil cleanup levels for the Site were previously established in the King County/Chevron Consent Decree (Ecology, 1999) and are tabulated in the CAP for that Decree (Foster Wheeler, 1998) and listed in Table 1. The chemical constituents listed in Table 1 will be considered COCs on the North Yard Property:

Table 1
Maximum Concentrations of COC Detected in Soil and Cleanup Levels

Chemical	Maximum Detected Concentration (ppm)[1]	Site-Specific Cleanup Level[2] (ppm)	MTCA Cleanup Level[3] (ppm)
TPH[4]-Gasoline	6,700	4,520	30
TPH-Diesel	14,000	5,140	2,000
TPH-Oil	430	5,780	2,000
Benzene	9.9	4,530	0.03
Fluoranthene	ND	18	None
Naphthalene	0.24	18	5
Benzo(a)pyrene	ND	18	0.1
Chrysene	0.028	18	0.1
Dibenzo(a,h)anthracene	ND	18	0.1
Indeno(1,2,3-cd)pyrene	0.03	18	0.1
Benzo(k)fluoranthene	ND	18	0.1
Benzo(a)anthrance	ND	18	0.1
Benzo(b)fluoranthene	0.036	18	0.1

[1]ppm = parts per million.
[2]As determined in the King County/Metro and Chevron Consent Decree.
[3]MTCA = Model Toxics Control Act. Method A for unrestricted site use.
[4]TPH = Total Petroleum Hydrocarbons.

As indicated above, gasoline and diesel-range petroleum hydrocarbon concentrations are above both the site-specific cleanup levels previously established and the MTCA Method A unrestricted site use cleanup levels. Benzene concentrations are above the MTCA Method A unrestricted site use cleanup level.

3.0 DEVELOPMENT AND EVALUATION OF REMEDIATION ALTERNATIVES

3.1 Cleanup Levels for Chemicals of Concern

MTCA Method A cleanup levels for unrestricted site use will be applicable for COCs in the PPCD and are provided in Table 1. These cleanup levels are significantly lower than the cleanup levels specified in the 1999 Consent Decree. Soil with COCs above cleanup levels is referred to as "Impacted Soil" in the remainder of this report.

3.2 Screening of Alternatives

The bioremediation alternatives for soil contamination have partially reduced COC concentrations, but have not reduced COC concentrations below the site-specific MTCA cleanup levels previously established for the Site. Excavation and off-site disposal/treatment, or continued monitoring and natural attenuation are the two remaining viable alternatives for addressing soil contamination. Excavation and off-site disposal/treatment is the only alternative compatible with Touchstone's development plans for the Property, which includes excavation for an underground garage to a depth ranging from 10 to 55 feet below the existing ground surface.

As stated in WAC 173-340-350(8)(b), remedial alternatives may be eliminated from further consideration if they do not achieve the following criteria:

1. Protective of human health and the environment.
2. Compliance with cleanup levels.
3. Compliance with all applicable state and federal laws.
4. Provide for compliance monitoring.

The proposed remedial action (Soil Removal and Off-Site Disposal/Treatment) will achieve the screening criteria.

3.3 Evaluation of Alternatives

Table 2 provides a comparison of the proposed remedial action against the MTCA evaluation criteria. As shown in the table, the proposed remedial alternative performs satisfactorily with regards to all the criteria.

Table 2
Evaluation of Remediation Alternative

Criteria	Soil Removal and Off-Site Disposal/Treatment
Protectiveness	Achieves protectiveness since all Impacted Soil will be removed from the Property.
Compliance with Cleanup Levels	Will achieve all the cleanup levels for soils at the Property.
Permanence	Permanent solution to the maximum extent practicable since in situ treatment has not achieved MTCA cleanup levels. Some Impacted Soils that remain on the Property will be treated off-site.
Cost	$2.0M
Long-Term Effectiveness	Very good due to removal of all Impacted Soil from the Property.
Management of Short-Term Risks	Short-term risk of exposure to Impacted Soil during excavation considered acceptable.
Implementability	There are no impediments to effective implementation.
Consideration of Public Concerns	Public concerns have not been expressed.

3.4 Reasonable Restoration Timeframe

WAC 173-340-360(4) requires that a cleanup action provide for a reasonable restoration timeframe. The cleanup action that is the subject of this CAP is soil excavation and off-site disposal or treatment. Excavation and removal of the Impacted Soil is the quickest way to achieve cleanup levels at the Property. The selected remedy will achieve cleanup levels for soil at the Property within three to six months, which is generally considered an extremely short restoration time-frame.

3.5 Exposure Pathways Following Implementation of Remedial Action

Touchstone intends to remove all Impacted Soil from within its Property boundaries. Since the excavation extends below the groundwater table, impacted groundwater will also be removed from the North Yard Property. In addition, Touchstone will implement moisture and vapor barriers around the subsurface portion of the building to provide additional protective measures where necessary

Evaluation of individual exposure pathways following construction are provided below:

Soil → Office Worker via Ingestion/Direct Exposure: This pathway has been eliminated due to removal of Impacted Soil.

Soil → Groundwater → Office Worker via Ingestion/Direct Exposure: This pathway has been eliminated due to removal of Impacted Soil.

Soil → Vapor → Office Worker via Inhalation: Previous indoor air sampling and analysis indicated that the COCs for the Property were not detected inside the existing structures (Foster Wheeler, 1998). This pathway can be eliminated given these data and due to removal of Impacted Soil. In addition, waterproofing and a vapor barrier will be constructed around the subsurface portion of the building where necessary.

Groundwater → Office Worker via Ingestion/Direct Exposure: This pathway has been eliminated due to removal of impacted groundwater and an existing Restrictive Covenant recorded on the Property preventing use of groundwater. In addition, waterproofing and a vapor barrier will prevent migration of groundwater into the building.

Groundwater → Vapor → Office Worker via Inhalation: Previous indoor air sampling and analysis indicated that the COCs for the Property were not detected inside the existing structures (Foster Wheeler, 1998). This pathway can be eliminated given these data and due to removal of some impacted groundwater during dewatering of the excavation. In addition, waterproofing and a vapor barrier will prevent migration of vapors into the building.

4.0 REMEDIAL DESIGN OF THE PREFERRED ALTERNATIVE

The selected remediation alternative is soil removal with off-site disposal/treatment. Each element of the remedial action plan is discussed in the following sections. In addition, all remediation work will be conducted in accordance with the procedures and practices described in the ECP (see Appendix A).

4.1 "Hot Spot" Removal

The purpose of "hot spot" removal is to eliminate all the known pockets of high concentrations of petroleum hydrocarbons during installation of excavation shoring. The following well locations within the North Yard (including the street rights of way) have been identified as "hot spots" with either free product or high concentrations of petroleum hydrocarbons:

MW-3
MW-9
MW-10
MW-11
MW-12
MW-27
MW-28

Wells MW-3, MW-10, MW-12, MW-27, and MW-28 are located within the Touchstone North Yard Property and will be abandoned by removing the well and surrounding Impacted Soils that are within the Property boundaries. MW-9 and MW-11 are located off of the Touchstone Property and Touchstone will remediate any Impacted Soil surrounding MW-9 and MW-11 that is within the boundaries of Touchstone's Property. Hot spot excavations conducted by Touchstone will extend to the bottom of the soil "smear" zone where groundwater fluctuation has impacted soil. It is estimated that the soil "smear" zone extends no more than 5 feet below the groundwater table. In no event will Touchstone be responsible to remediate contaminated soil outside of the Property boundaries.

The "hot spots" within the boundaries of the Property will be excavated and backfilled with pea gravel or drain rock during installation of excavation shoring. Six to 12-inch-diameter, perforated pipe will be placed in the "hot spot" excavations before backfilling to create temporary sumps to facilitate removal of separate phase hydrocarbons. The "hot spot" sumps will be removed during excavation of the underground parking garage, as discussed in Section 4.4.

Assuming that each excavation will have an approximate depth of 15 feet and an approximate diameter of 15 feet, it is estimated that approximately 400 cubic yards of Impacted Soil will be generated by the "hot spot" removal. Impacted Soil will be hauled to an off-site facility licensed for the treatment and/or disposal of hydrocarbon-impacted soil. Testing, treatment, and disposal documentation will be submitted to Ecology in the Compliance Monitoring Report.

4.2 Contingency for Temporary and 5-Year Cover

Once Touchstone has removed the buildings and asphalt and concrete covering the North Yard Property, if remedial work is stopped or delayed for more than 14 days and less than 60 days, a temporary cover will be installed within 28 calendar days of stoppage. If work stoppage lasts more than 60 calendar days, then a 5-year cover will be installed within 90 calendar days from work stoppage. The cover over the Property will be constructed as follows:

1. **Temporary Cover:** Touchstone will install and maintain a temporary cover over the Property or a sufficient portion of the Property to ensure that any exposed soil on the Property will be protected from water, snow, or wind. The cover will include storm water controls. The temporary cover will be constructed using minimum 10 mil plastic geomembrane with taped seams. The estimated cost for the temporary cover is $21,000.

2. **5-Year Cover:** Touchstone will install and maintain a 5-year cover over the Property or a sufficient portion of the Property to ensure that that any exposed soil on the Property will be protected from water, snow, or wind. The cover will include

storm water controls. The 5-year cover will be constructed using a minimum 30 mil polyvinyl chloride (PVC) geomembrane with glued or welded seams. The estimated cost for the 5-year cover is $245,000.

The above cost estimates are based on 2006 dollars and would be revised to reflect current costs at the time the financial assurance is provided.

Both alternatives would include a stormwater collection system. Stormwater would be discharged to the storm sewer in accordance with City of Seattle permit, King County Metro discharge and Ecology MTCA requirements.

Financial assurance will be provided for both the temporary and permanent covers, in accordance with the requirements in the PPCD. Design of the contingency covers would be provided in the Engineering Design Report.

4.3 Dewatering

Following excavation of "hot spots", any groundwater and free product in the "hot spot" sumps will be removed using a vac truck upon accumulation of 0.1 inches of separate phase hydrocarbons or, at a minimum, at least once per week during the excavation period. The sumps will be inspected daily for the first week, then weekly during the pre-excavation period. Ground water extracted from "hot spots" will be transported to a licensed treatment facility for treatment and disposal. Any occurrence of separate phase hydrocarbons greater than 0.1 inches will be documented, removed off-site for treatment and/or disposal, and reported to Ecology in the Compliance Monitoring Report.

In advance of construction, perimeter dewatering wells may be constructed if they are necessary. These dewatering wells would be designed and constructed to lower the water table below the base of the excavation during construction of the underground parking garage. Dewatering (extracted) groundwater will either be transported off-site for treatment and/or disposal or discharged to the sanitary sewer under permit to King County Metro. If discharged to the sewer, the extracted groundwater will be sampled and analyzed in accordance with the King County/Metro sewer discharge permit. Dewatering activities will be documented and reported to Ecology in the Compliance Monitoring Report.

4.4 Parking Garage Excavation

Once the excavation is sufficiently dewatered, excavation for the parking garage will be conducted. It is expected that shoring will be installed before excavation begins or that soil nailing will be utilized as excavation progresses. The expected lateral extent of excavation is shown on Figure 2 and the estimated depth of excavation is shown on Figure 3. As shown on Figure 3, Touchstone estimates that the excavation for the parking garage will extend down to

the water table along the south side and approximately 40 feet below the water table on the north side. It is expected that impacted soil will be found to a depth of approximately 5 feet below the water table along the south side of the Property. Therefore, the excavation will be extended beyond the depth required by the parking garage to ensure that all Impacted Soil will be removed from within the Property boundaries. It is expected that the excavation will extend laterally to the Property boundary along the south side.

After excavation, performance soil sampling will be used to confirm that the Method A unrestricted cleanup levels have been achieved. If the cleanup levels have not been achieved, then Touchstone will excavate another 6-inch cut across the location where cleanup levels were not achieved and repeat performance soil sampling. If the cleanup levels still have not been achieved, then Touchstone will excavate another 6-inch cut across the location and repeat performance soil sampling. If the cleanup levels are not achieved, then Touchstone may choose at its option, to prepare a Disproportionate Cost Analysis following WAC 173-340-360(3)(e) or excavate another 6-inch cut across the location and repeat performance soil sampling.

Excavated soil will be tested to determine the concentrations of total petroleum hydrocarbons and BTEX. It is expected that excavated soil will be segregated into clean soil (no detectable levels of total petroleum hydrocarbons [TPH]) or benzene), nuisance soil (gasoline TPH between 0 and 100 ppm, diesel TPH between 0 and 200 ppm, or benzene between 0 and 0.5 ppm), and high TPH soil (gasoline TPH greater than 100 ppm, diesel TPH greater than 200 ppm, or benzene greater than 0.5 ppm). Clean soils will be laboratory tested to confirm that gas and diesel TPH and benzene concentrations are below method detection levels. Once it is documented that concentrations are below method detection levels clean soils may be exported to another site and used as clean fill material. Nuisance soil will be landfilled and high TPH soil will be thermally treated at a licensed facility. Removal of clean soil and removal and treatment of nuisance and high TPH soils will be documented, manifested, and reported to Ecology in the Compliance Monitoring Report.

Evaluation of petroleum hydrocarbon concentrations will be conducted in the field using screening methods and performance monitoring samples will be submitted to the laboratory for analysis, as described below and as discussed in the SAP (Appendix B):

- **Qualitative Field Screening**: Soils with detectable TPH concentrations can generally be identified in the field based on appearance, odor, and screening with an organic vapor analyzer (OVA).

- **Semi-Quantitative Field Screening Using the PetroFlag System**: The PetroFlag system is a turbidimetric screening method for assessing TPH in soil. The EPA methodology (Method 9074) is provided in Appendix C. Semi-quantitative field

screening will be conducted using this method to categorize soils as either: 1) clean, 2) nuisance, or 3) high TPH.

- **Laboratory Testing**: Soil samples will be collected and analyzed in a laboratory to verify the accuracy of the field screening methods and to demonstrate that all impacted soils have been removed from the Property (once excavation is complete). Initially, 10% of the PetroFlag samples will be tested in a laboratory to determine the accuracy of the field screening. If the laboratory samples indicate that the PetroFlag results are providing reliable results, this frequency may be decreased to 5% after 50 PetroFlag samples. The higher frequency will be utilized whenever there are significant changes in soil characteristics. Sampling and analysis procedures are provided in Appendix B.

Assuming the dimensions of Impacted Soil shown on Figures 2 and 3, it is estimated that approximately 15,000 to 25,000 cubic yards of Impacted Soils will be disposed/treated off-site. The remaining soil is expected to be clean.

If unexpected underground storage tanks and/or pipelines are encountered on the Property during demolition or excavation activities, they will be characterized and properly disposed of and/or remediated. These new discoveries will be reported to Ecology.

4.5 Applicable Relevant and Appropriate Requirements (ARARS)

Touchstone and its contractors shall comply with all applicable federal, state, and local regulations pertaining to work practices, hauling and disposal of Impacted Soil, and protection of workers, visitors to the Property, and persons occupying areas adjacent to the Property. A description of the federal, state, and local regulations potentially applicable to the cleanup is presented in the ECP (found in Appendix A).

It is anticipated that cleanup work at the Property will trigger the following permit requirements:

- Asbestos Removal Permit from the Puget Sound Clean Air Agency (Regulation 3, Article 4: Asbestos Control Standards)
- Shoring and excavation permit from the City of Seattle.
- A stormwater discharge permit from King County/Metro Industrial Waste Program for discharge of contaminated groundwater.

The specific conditions to be imposed by these permit laws is unknown at this time. Remediation at the Property is not expected to occur for several years. When Touchstone is prepared to begin remediation, it will contact the permitting agencies to determine the specific

substantive requirements of the permits. Those substantive requirements will be included in the draft Engineering Design Report submitted to Ecology.

4.6 Health and Safety

Touchstone or its contractor is responsible for developing their own health and safety plan and ensuring that the plan is correctly implemented. The plan shall, at a minimum, comply with the health and safety guidelines specified in the ECP.

4.7 Compliance Monitoring

4.7.1 Performance Monitoring and Confirmational Sampling

The point of compliance for soil is defined horizontally as the North Yard Property boundary and vertically as the base of the smear zone. Performance monitoring soil samples will be collected from the bottom of the excavation and from internal excavation sidewalls on the Property (not on sidewalls of the excavation around the perimeter of the Property) in areas where Impacted Soils have been removed. These samples will be used to confirm that COC concentrations meet cleanup levels in soil at the base of the excavation and interior sidewalls within the Property boundary.

Any discharge from footing drains and/or basement sumps will also be sampled following remediation to confirm that chemical concentrations are within discharge limits defined in the King County Metro sewer discharge permit.

Characterization soil samples will be collected from the Property perimeter sidewalls as the excavation shoring is installed. These samples will be analyzed for COCs to characterize soil concentrations at the Property boundary. This information will be used by Ecology, King County/Metro, and Chevron to make future decisions regarding contaminated soils that occur off the Property. However, this characterization sampling is not part of Touchstone's compliance monitoring. If perimeter sidewall samples exceed cleanup levels for the North Yard Property or for the Site, that information will not result in a determination by Ecology that Touchstone's cleanup has failed to meet cleanup levels for the North Yard Property or that Touchstone is obligated to clean up contaminated soil outside the Property boundaries.

Performance monitoring and characterization sampling will be conducted in accordance with the procedures specified in the Compliance Monitoring and Sampling and Analysis Plan (Appendix B). All sampling results will be documented and reported to Ecology in the Compliance Monitoring Report.

4.7.2 Groundwater Compliance Monitoring/Point of Compliance

The point of compliance for groundwater in the North Yard, including the North Yard Property, was established in the King County/Chevron Consent Decree as the southern property boundary, to be monitored using existing wells MW-19, MW-20, and MW-21. That point of compliance will remain unchanged.

Once performance monitoring soil sampling shows that COC concentrations in soils on the North Yard Property meet cleanup levels inside the point of compliance for soil, Touchstone's obligations to conduct remedial actions, including monitoring, will be complete.

King County/Metro and Chevron will continue to conduct any remaining required ground water monitoring at the North Yard and the remainder of the Metro Lake Union Site, pursuant to their Consent Decree with Ecology.

4.7.3 Monitoring of Basement Sump Discharge Post Construction

It is expected that basement sump seepage will be collected and discharged to the storm sewer under a permit from King County/Metro. This permit will specify sampling and analysis requirements and identify allowable petroleum hydrocarbon concentrations that will determine if treatment is necessary. If sump seepage is discharged under a King County/Metro Permit, Touchstone will comply with the discharge and monitoring requirements specified in the King County/Metro Permit. Results of sump seepage monitoring will be provided to Ecology in the Compliance Monitoring Report.

4.7.4 Compliance Monitoring Plan

The Compliance Monitoring Plan will be prepared during the Engineering Design phase following WAC 173-340-410. The draft Compliance Monitoring Plan will be consistent with the SAP and will address specific design details, such as excavation configuration, storm water permit requirements, and material staging.

4.8 Institutional Controls

The cleanup actions earlier conducted on the Site, including the North Yard, resulted in residual levels of petroleum hydrocarbons in the soil and shallow groundwater being left on the Site that exceeded unrestricted cleanup levels for soil and drinking water standards for groundwater. Therefore, King County recorded a restrictive covenant for the North Yard Property. That restrictive covenant will remain in place for the North Yard Property, but will be amended by Touchstone as described in the PPCD.

5.0 REPORTING AND NO FURTHER ACTION DETERMINATION

Touchstone will submit a draft Engineering Design Report (EDR) to Ecology. The EDR will include the engineering specifications, procedures, and substantive permit requirements to implement the excavation, testing, storage, transport, treatment by thermal desorption, and disposal of the Impacted Soils, and testing and documentation for clean soils. The EDR will also include the Draft Compliance Monitoring Plan (described above). Note, the Compliance Monitoring Plan is to address the soils within the Property and the dewatering activities during excavation and/or work stoppage once the existing cover is removed within the Property.

Once performance monitoring results indicate that all Impacted Soil exceeding cleanup levels has been removed from the Touchstone Property within the point of compliance, Touchstone will submit a Compliance Monitoring Report to Ecology that documents the performance monitoring results. Touchstone will also request a written determination from Ecology that Touchstone has met all of its obligations under the PPCD with Ecology and that no further action by Touchstone is necessary. All reports will be issued with three hard copies to Ecology and an electronic copy. Laboratory and analytical results will be submitted with hard copy and electronic copy in EIM (Environmental Information Management) format.

6.0 SCHEDULE

Construction of the new building at the North Yard Property will begin once a new King County facility is constructed (by Touchstone) on a different site. The new King County facility is not expected to be completed for several years. Therefore, construction of the new North Yard facility is not expected to start until the fourth quarter of 2008. Construction is expected to take approximately 18 to 24 months.

The remediation schedule is as follows:

1. When Touchstone is prepared to begin remediation of the North Yard Property, it will provide Ecology with a written notice of its intent to proceed. The date Touchstone sends Ecology the written notice will begin the time clock for this schedule.

2. Touchstone will submit a Draft Engineering Design Report (EDR) at 50 percent design within 30 days of sending the notice of intent to proceed. Ecology will review the draft report and provide Touchstone with comments within 30 days of receipt of the draft report. Touchstone will consult with state and local agencies to determine the substantive requirements of permits exempted under RCW 70.105D.090, and will include those substantive requirements in the draft EDR.

3. Touchstone will submit a Final Draft EDR at 100 percent design. Ecology will review the Final Draft EDR and provide Touchstone with comments within 30 days of receipt of the draft report.

4. Touchstone will submit a final EDR responding to Ecology's comments within 30 days of receipt of Ecology's comments. Ecology will review the final EDR and approve it or provide additional comments within 30 days of receipt of the final EDR.

5. Touchstone will begin remediation upon Ecology's approval of the final EDR.

6. Touchstone will submit a draft compliance monitoring report to Ecology within 60 days of receipt of performance monitoring sampling indicating COCs in soils at the Touchstone Property meet cleanup levels. Ecology will review the draft report and provide Touchstone with comments within 30 days of receipt.

7. Touchstone will submit a final compliance monitoring report responding to Ecology's comments within 30 days of receipt of Ecology's comments. Ecology will issue a determination that Touchstone has met its obligations under the PPCD and that no further action is necessary for the Property within 30 days of Ecology approval of the final compliance monitoring report. Ecology will review the final compliance monitoring report and approve it or provide additional comments within 30 days of receipt of the final report.

7.0 PUBLIC PARTICIPATION

The draft CAP, PPCD signed by Touchstone, State Environmental Policy Act checklist, threshold determination, and Public Participation Plan will be submitted for a 30-day public comment period. This provides the public an opportunity to formally comment on the proposed cleanup. Any public comments and concerns will be evaluated by Ecology and Touchstone in finalizing the PPCD and CAP. A responsiveness summary will be prepared by Ecology and may be included with the final CAP to respond to public comment.

Sincerely,
ASSOCIATED EARTH SCIENCES, INC.
Kirkland, Washington

J. Scott Kindred, P.E.
Senior Engineer

Jon N. Sondergaard, P.G., P.E.G.
Principal Geologist

8.0 REFERENCES

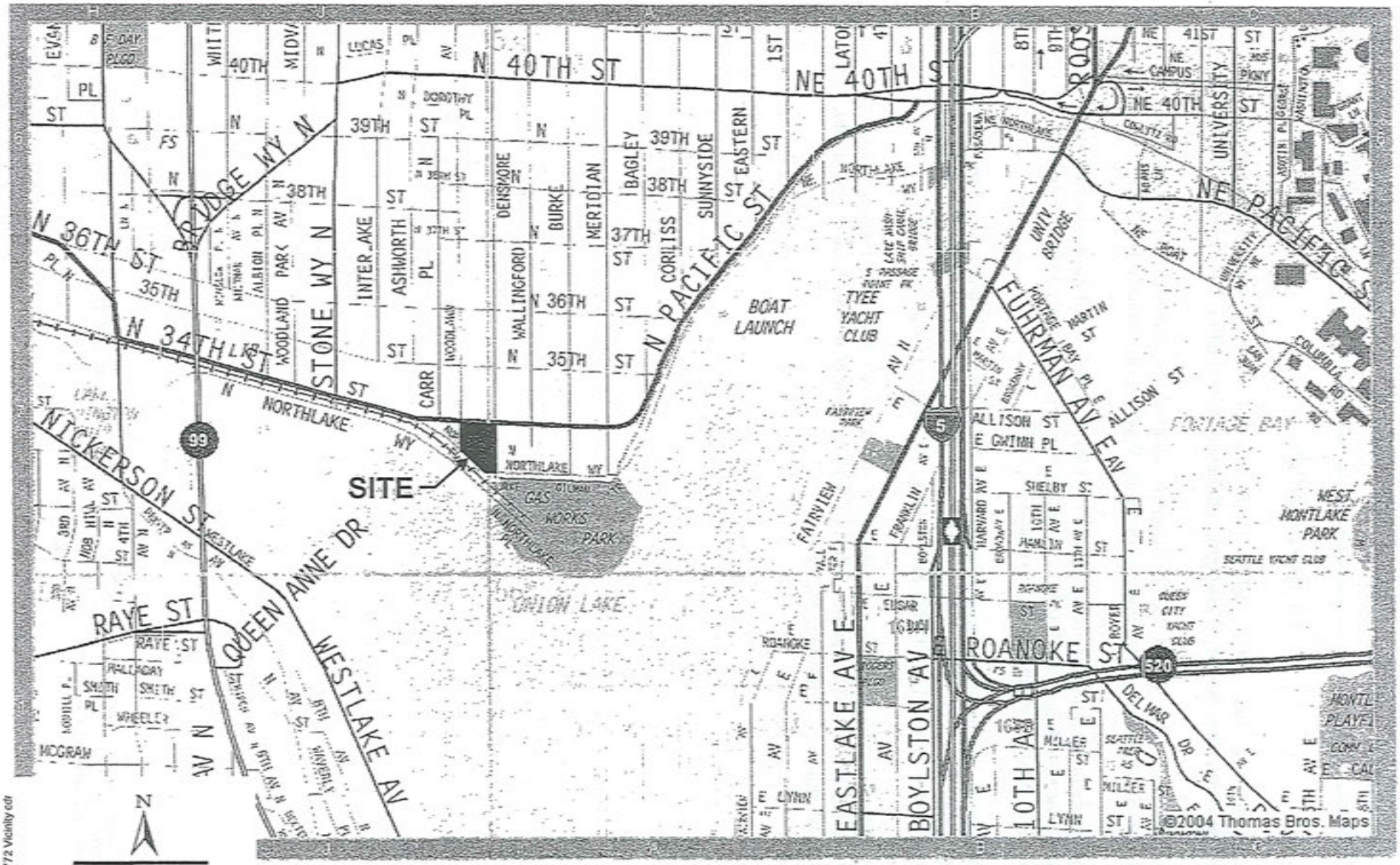
Applied Geotechnology, Inc. (AGI), 1993, Draft remedial investigation/feasibility study, Facilities North Site, Seattle, Washington; Bellevue, Washington, November 1993.

Applied Geotechnology, Inc. (AGI), 2000, Cleanup action report, Shallow Soil Remediation Facilities North, Seattle, Washington: Bellevue, Washington, January 19, 2000.

Foster Wheeler Environmental Corporation (Foster Wheeler), 1998, Draft cleanup action plan, Former Chevron Bulk Plant 100-1327 Facilities North/King County Metro Transit Lake Union Site: Seattle, Washington, November 24, 1998.

Science Applications International Corporation (SAIC), 2006, March 2006 annual groundwater monitoring report, Former Chevron Bulk Plant No. 100-1327, Facilities North/King County Metro Transit Lake Union Site, Seattle, Washington: April 20, 2006.

Washington State Department of Ecology (Ecology), 1998, Consent decree, Former Chevron Bulk Terminal #100-1327 Facilities North/King County Metro Transit Lake Union Site; Seattle Washington, November 24, 1998.



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NO SCALE

Associated Earth Sciences, Inc.

VICINITY MAP

NORTH LAKE UNION
SEATTLE, WASHINGTON

FIGURE 1

DATE 9/06

PROJ. NO. KV03772A

03772 North Lake Union \ 03772 Vicinity.cdr

EXHIBIT E

Department of Ecology v. Touchstone Corporation
Prospective Purchaser Consent Decree

Amended Restrictive Covenant for Property

Recording Requested By And
When Recorded Mail To

Touchstone Corporation
2025 First Avenue, Suite 790
Seattle, WA 98121

DECLARATION OF RESTRICTIVE COVENANTS

Reference #s of Documents Released or Assigned	None
Grantor	Touchstone Corporation
Grantee	Washington State Department of Ecology
Legal Description (abbreviated)	Lots 1-12, Blk 74, Lake Union Addition to City of Seattle
Assessor's Tax Parcel ID#	

TOUCHSTONE CORPORATION hereby gives notice that the Property, which is legally described below, is the subject of the following restrictive covenants. This Declaration of Restrictive Covenants hereby supersedes the Declaration of Restrictive Covenants recorded by KING COUNTY on November 26, 2002, solely as to the Property described herein. The Property, which is the subject of the following restrictive covenants ("the Property"), is legally described as:

> Lots 1 through 12, inclusive, Block 74, Lake Union Addition to the City of Seattle, according to the plat recorded in volume 1 of plats, page 238, in King County, Washington.

The Property was the subject of remedial actions under Chapter 70.105D RCW and implementing regulations. The work performed in the remedial actions is described in a Consent Decree filed with and approved by the Superior Court of the State of Washington in and for King County, in King County Cause No. 99-2-08651-1SEA ("the Consent Decree"); and a Prospective Purchaser Consent Decree filed with and approved by the Superior Court of the State of Washington in and for King County, in King County Cause No. _____ ("the Prospective Purchaser Consent Decree").

These restrictive covenants are required by ECOLOGY under WAC 173-340-440(5) because the cleanup actions on the Property under the Consent Decree and the Prospective Purchaser Consent Decree

will achieve Method B surface water standards for groundwater but do not achieve drinking water standards, as established under WAC chapter 170-340.

Subject to exceptions and reservations of record, TOUCHSTONE CORPORATION is the owner of the Property. TOUCHSTONE CORPORATION makes the following declaration as to limitations, restrictions and uses to which the Property may be put. TOUCHSTONE CORPORATION specifies that such declarations and the obligations created by the declarations shall constitute covenants to burden and run with the land and such covenants shall be binding on all parties and all persons, including TOUCHSTONE CORPORATION, who have or acquire any portion of, or interest in, the Property. Such declarations shall inure to the benefit of and be enforceable by the Washington State Department of Ecology and its successors and assigns ("ECOLOGY").

Pursuant to the Prospective Purchaser Consent Decree, TOUCHSTONE CORPORATION subjects the Property to the following restrictive covenants. These restrictive covenants hereby supersede and replace the restrictive covenants recorded on the Property by KING COUNTY on November 26, 2002.

1. No activities that interfere with the remedial actions required by the Consent Decree or Prospective Purchaser Consent Decree shall be undertaken on the Property without ECOLOGY approval.

2. No wells for the extraction of water shall be installed in the Property without ECOLOGY approval.

3. No title, easement, lease or other interest in the Property shall be conveyed or entered into without adequate provision for the terms of this Declaration of Restrictive Covenants.

4. Authorized representatives of ECOLOGY shall have the right to enter the Property at reasonable times with reasonable notice for the purposes of evaluating compliance with the terms of this Declaration of Restrictive Covenants.

Except as limited by the express provisions of this Declaration of Restrictive Covenants, TOUCHSTONE CORPORATION and its successors and assigns expressly reserve all rights of ownership, use and enjoyment of the Property.

Executed this ___ day of _____, 2006.

TOUCHSTONE CORPORATION

By: _____

Its: _____

STATE OF WASHINGTON)
) ss.
COUNTY OF KING)

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

DATED: _____

_____

_____
Notary Public in and for the State of Washington, residing at _____.
My Commission Expires: _____

EXHIBIT F

Department of Ecology v. Touchstone Corporation
Prospective Purchaser Consent Decree

IRREVOCABLE ASSIGNMENT

Pursuant to Section XXII of the Prospective Purchaser Consent Decree (PPCD) between the State of Washington, Department of Ecology ("Ecology") and Touchstone Corporation, King County Superior Court Cause No. _____ (_____, 2007), the undersigned depositor(s) ("Owner") hereby irrevocably assigns, transfers, and sets over to Ecology all rights, title and interest in and to $_____ ("Assigned Funds") on deposit in account number _____ ("Account") with the accepting deposit institution identified below ("Bank"). Ecology shall have full power and authority to demand, collect and receive the Assigned Funds for the uses and purposes prescribed in Section XXII of the PPCD. Owner hereby authorizes Bank, and Bank agrees to release to Ecology any or all of the Assigned Funds held in the Account upon 30 days notice of demand and with no other conditions of release. Bank agrees that it holds the Assigned Funds in its possession, and it agrees to hold the Assigned Funds until a release of this assignment is received from Ecology.

OWNER(s)

_____ _____

Dated: Dated:

ACCEPTANCE

The undersigned Bank accepts and agrees to be bound by the terms of this irrevocable assignment and to hold the Assigned Funds until Ecology authorizes the release thereof in writing.

BANK ATTEST

_____ _____

Title: Title:
Date: Date:

EXHIBIT G

Department of Ecology v. Touchstone Corporation
Prospective Purchaser Consent Decree

Estoppel Agreement

King County and Chevron have executed a consent decree in King County Superior Court under Cause No. 99-2-08651-1SEA (Lake Union Decree), with the Department of Ecology regarding a contaminated site, as the term Site is defined in the Lake Union Decree. The Site includes the Property to be acquired by Touchstone, which is the subject of this Prospective Purchaser Consent Decree (PPCD). The Lake Union Decree established the obligations of King County and Chevron as to contamination at the Site.

Under the PPCD with Touchstone, Touchstone proposes to remove soil from the Property as prescribed in the Touchstone cleanup action plan (Touchstone CAP). Ecology is providing Touchstone with a covenant not to sue and contribution protection in the PPCD, under which Touchstone will not be liable for groundwater contamination at the Site, except in those circumstances described in Section XIX.A of the PPCD concerning new releases. King County and Chevron shall remain responsible, under the terms of the Lake Union Decree, for groundwater contamination on the Site, including the Touchstone Property, except for new releases as described in Section XIX.A of the PPCD.

Chevron

King County

EXHIBIT

FILED
KING COUNTY, WASHINGTON

FEB 05 2010

SUPERIOR COURT CLERK

SUPERIOR COURT OF WASHINGTON IN AND FOR KING COUNTY

STATE OF WASHINGTON,
DEPARTMENT OF ECOLOGY,

Plaintiff,

v.

TOUCHSTONE CORPORATION,

Defendants.

No. 07-2-23870-1 SEA

FIRST AMENDMENT TO CONSENT DECREE TO ADD PARTY DEFENDANT

(Clerk's Action Required)

This Amendment is to add Touchstone NLU Development LLC, a Washington limited liability company, as a party Defendant to the Consent Decree in this case, pursuant to Section III of the Consent Decree. Touchstone Corporation, a party Defendant to the Consent Decree, has assigned all of its obligations under the Consent Decree to Touchstone NLU Development LLC, and Touchstone NLU Development LLC is acquiring, or has acquired, an ownership interest in the Property covered under the Consent Decree. The property is known as 3301 Densmore Avenue North, Seattle, Washington, which is within the geographic boundary described in Exhibit C to the Consent Decree ("Property").

Touchstone NLU Development LLC agrees to be bound by all provisions of the Consent Decree previously entered in this case.

The undersigned parties agree to amend the Consent Decree to add Touchstone NLU Development LLC as a party Defendant. These parties agree that this Amendment will be

submitted for entry with the Court only after the transfer in interest to Touchstone NLU Development LLC is consummated.

Being fully advised of the reasons for entering this Amendment to the Consent Decree and good cause having been shown,

IT IS HEREBY ORDERED, ADJUDGED, AND DECREED that Touchstone NLU Development LLC is added as a party Defendant to the Consent Decree and is bound by it.

DATED THIS ____ day of 2-10-, ~~2009~~ 2010.

JUDGE/COMMISSIONER
King County Superior Court

IT IS SO AGREED TO BY THE UNDERSIGNED

TOUCHSTONE NLU DEVELOPMENT LLC

By: _____
Name: James D. O'Hanlon
Title: Manager
Date: _____

DEPARTMENT OF ECOLOGY

for JJM Pendowski

JAMES J. PENDOWSKI
Program Manager
Toxics Cleanup Program
Date: 12-29-09

ROBERT M. McKENNA
Attorney General

ELLIOTT FURST, WSBA #12026
Assistant Attorney General
Attorneys for Plaintiff
Department of Ecology
Date: 12-21-09

DEPARTMENT OF ECOLOGY

JAMES J. PENDOWSKI
Program Manager
Toxics Cleanup Program
Date: _____

ROBERT M. McKENNA
Attorney General

ELLIOTT FURST, WSBA #12026
Assistant Attorney General
Attorneys for Plaintiff
Department of Ecology
Date: 12-21-09

Appendix C.

Ecology Response to Comments on Periodic Review Report

November 25, 2014

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
Northwest Regional Office • 3190 160th Ave SE • Bellevue, WA 98008-5452 • 425-649-7000
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November 25, 2014

Mr. Jeff Parker
3636 Densmore Avenue N
Seattle, WA 98103

Subject: Ecology Response to Comments for Periodic Review Report for KCDT Metro Transit Facilities North, former Chevron Terminal #100-1327 Site Seattle, WA Cleanup Id # 1275 – Facility Site Id # 2217

Dear Mr. Jeff Parker:

Washington Department of Ecology (Ecology) received your email comments on August 5th and September 25, 2014 regarding the Metro Lake Union Site Periodic Review. This Site is also called the King County Department of Transportation, Metro Transit Facilities North Site and former Chevron Bulk Terminal #100-1327 (Site) located at 1602 N Northlake Way, Seattle, Washington.

Thank you for your interest in this Site, Lake Union and the Wallingford area. I would like to describe the environmental work that Ecology has completed at the Site. I hope this information will be helpful for you in answering your questions and comments. I have numbered your email comments for clarity (see attached), and I describe site information and responses to each of your comments.

Background. The Periodic Review draft was published July 25, 2014 for the Metro Lake Union/former Chevron Terminal Site where cleanup actions are being conducted under a Consent Decree, which is a legal agreement with Ecology signed in 1999. The Periodic Review is required by the Model Toxics Control Act, WAC 173-340-420. The cleanup levels are listed in the Consent Decree and reprinted in the Periodic Review Report (PRR) on Table 1 for the Metro/Chevron cleanup work.

Touchstone NLU LLC (Touchstone) entered into a consent decree with Ecology called a Prospective Purchaser Consent Decree (PPCD) for the purchase and cleanup of the North Yard, approximately half of the Metro/Chevron Site. This agreement was signed in 2007; the North Yard was purchased in 2009. The Touchstone PPCD cleanup action applies more stringent cleanup levels for the soils within the North Yard. Cleanup action for soils outside of the North Yard property and all underlying groundwater are the responsibility of Metro and Chevron as specified in their Consent Decree. Thus, the Touchstone cleanup work is in addition to the Metro and Chevron work, and the Touchstone work applies only to the cleanup of soils within the North Yard property line.

Comments #1 and 2. The Chevron/Metro Consent Decree documents the Site cleanup levels based on MTCA Method A for industrial use. When Touchstone decided to purchase the North Yard, it selected the Model Toxics Control Act Method A cleanup levels for unrestricted use (including residential and commercial use) for soils within its property boundary (in other words, the North Yard property that they purchased). The MTCA Method A cleanup levels are listed in the Periodic Review Report, Appendix B -Touchstone Cleanup Action Plan, Section 3.1. The Touchstone Cleanup Action Plan (CAP) Table 1 shows both the Touchstone Method A soil cleanup levels for Unrestricted Land Use (column 4), and the Metro/Chevron cleanup levels (column 3) based on MTCA Method A for industrial use for soils outside of the North Yard.

The MTCA Method A Unrestricted Use cleanup levels are most commonly used for routine cleanups and for most contaminants, and they are the most stringent cleanup levels applied pursuant to MTCA. These cleanup levels were developed using very conservative exposure assumptions considering that chemicals of concern may move or migrate from soil to groundwater to surface water, or from soil to air, or through direct human contact, or through other pathways. Ecology uses a human health risk level of one in a million or 10^{-6} cancer risk in setting cleanup levels. Levels for non-carcinogens cannot exceed the point where the substance may cause illness in humans (the hazard quotient cannot exceed 1). See WAC 173-340-708 for the risk assessment framework for calculating cleanup levels for the protection of human health and the environment.

Human health and the environment may be impacted via many exposure pathways including ingestion, breathing or inhalation, or via skin contact and dermal exposure. The Table for Method A Soil Cleanup levels for Unrestricted Land Uses (MTCA Table 720-1) and Method A for Industrial Properties (MTCA Table 745-1) contain footnotes that describe which pathway the cleanup level is based upon. There are additional descriptions of how chemicals of concern (also called contaminants) may migrate via one or more pathways in the Ecology CLARC database at this link:

https://fortress.wa.gov/ecy/clarc/CLARCDataTables.aspx

Soil screening levels to protect potential vapor intrusion were evaluated and addressed through compliance sampling following soil excavation as well as additional protective measures by adding engineering controls and compliance monitoring. Since Touchstone's cleanup levels are for unrestricted use in the North Yard, they designed their building to include an impermeable membrane or geo-fabric exterior to the underground structures to prevent and/or minimize migration of, vapor or groundwater into the underground structure. Additionally, Ecology may require soil vapor compliance testing after the excavation is completed to confirm that Touchstone has met its cleanup levels and to assess potential vapor intrusion risk.

Touchstone will remove all soil in excess of the MTCA Method A Unrestricted Use cleanup levels within its property boundary. It will conduct soil testing at the side-wall and base of its excavation to confirm soil status prior to construction of the below ground structures and to confirm that the chemicals of concern meet cleanup levels (PRR Appendix B - Touchstone Cleanup Action Plan, Section 4.7.1). If base soils are above the Method A Unrestricted Use

cleanup levels, then additional excavation will be implemented in 6 inch lifts with soil removal and re-testing (Touchstone Cleanup Action Plan, section 4.4 and Ecology Touchstone CAP approval memorandum dated 12/28/06). Touchstone will also sample the exterior side-walls of its excavation to provide Chevron/Metro and Ecology with information on the current conditions of those soils, in order to identify if Chevron/Metro need to conduct more remediation and/or compliance monitoring outside of the North Yard property line. The Touchstone soil results are estimated to be available in early 2015 and will be added to the Site webpage:

https://fortress.wa.gov/ecy/gsp/Sitepage.aspx?csid=1275

Furthermore, if for some reason some residual contamination is left in place on the Touchstone property, the engineering controls (such as the building, floors and/or additional physical structures) will prevent the contamination from leaching or migrating into the building structures.

Comment #3. Yes, the Touchstone CAP provides for soil performance monitoring (testing) at the base of the excavation and defers decision making until the final soil testing at the floor of the excavation is completed and approved by Ecology. The results are expected to be listed on the webpage in early 2015 (see above site webpage link).

Comment #4. Metro/Chevron's responsibility for soils outside of the former North Yard is defined in their Consent Decree. The Consent Decree was approved by the court and is a final resolution of cleanup liabilities under State law (MTCA). In addition, MTCA regulation provides that the cleanup levels in effect when the final cleanup action plan is issued are the cleanup levels that apply to the site (WAC 173-340-702 (12)). The Consent Decrees contain a reopener clause that provides for an amendment to the Consent Decree if factors not known at the time of entry of the Consent Decree are discovered and present a previously unknown threat to human health or the environment (RCW 70.105D.040(4)(c). As part of this Periodic Review Report, Ecology has determined there are no factors that would warrant a change to the Consent Decree at this time.

Comment #5. See response to comments #1 and 2.

Comment #6. Soil leaching to groundwater as well as groundwater to surface water pathways were evaluated in the selection of cleanup levels and determined to be significant and applicable to this Site. The total petroleum hydrocarbon cleanup levels for TPH-gasoline, diesel and oil are based on residual saturation equations using Site specific soil characteristics (see Foster Wheeler Environmental Cleanup Level Development Report (April 1998)). The Site TPH cleanup levels are set above Site-specific estimated residual saturation (in other words, more stringent than standard (generic) residual saturation levels), which essentially are the concentrations at which the contaminants will not migrate down to the water table. In addition, the groundwater compliance monitoring will be used to confirm that petroleum is not migrating from soil to groundwater within the entire Metro/Chevron Site.

Comment #7. Soil testing for the 12 priority pollutant metals (which include cadmium, chromium, and mercury) was conducted during the Remedial Investigation and did not exceed

MTCA Method A industrial cleanup levels (AGI, 1993 Remedial Investigation Report, Section 6.3 and Table 6.5), except in shallow soil in the former tank farm area of the North Yard before cleanup action Phase 1. Cadmium, chromium, mercury, and other priority pollutant metals were eliminated as possible chemicals of concern at this Site, except for in the former tank farm area.

The North Yard shallow soils in the former tank farm area were excavated to remove contaminants from paint chips and sand blast grit with high metal concentration as part of the Metro/Chevron Phase 1 cleanup action, which was completed in 2000 pursuant to its Consent Decree. Post-Phase 1 soil testing showed all metals in soils were below cleanup levels (AGI Technologies, Cleanup Action Report Shallow Soils Remediation [Phase 1] Report, 2000). The Phase 2 cleanup action showed that metals were no longer a chemical of concern at this Site, except for arsenic and lead in groundwater.

Comment #8. Before Ecology entered into the Consent Decree, Chevron/Metro performed a remedial investigation to evaluate the nature and extent of petroleum and petroleum related substances including BTEX (benzene, toluene, ethylbenzene, and xylenes), volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), 1,2-Dichloroethane (EDC), Ethylene dibromide (EDB), phenols, other semi-volatile organic compounds (SVOCs), and metals. Substances that showed detections below Site cleanup levels were not considered chemicals of concern for this Site.

There were 13 soil sample tests for EDC and EDB. Most results showed no detections or were significantly below cleanup levels; however there was one detection of EDC and two detections of EDB above their respective cleanup level. These three results were considered minimal and would be addressed by the Phase 2 subsurface cleanup action (AGI, 1993, Remedial Investigation, Section 6 and Tables 6-8 to 6-12).

Because EDC and EDB are constituents of petroleum, the compliance monitoring for the chemicals of concern, including TPH-gas, TPH-diesel, TPH-oil, BTEX, PAHs, arsenic, and lead, will document any migration of concern for this Site. As a result, Ecology determined that further testing for EDC and EDB as a chemicals of concern for this Site was not necessary.

I trust this information answers your comments. If you have additional questions, please contact me at the Northwest Regional Office at mobr461@ecy.wa.gov or by telephone at 425-649-7249.

I appreciate your interest in the Site and Ecology's cleanup work protecting human health and the environment in the Lake Union and Wallingford area.

Sincerely,

Maura S. O'Brien, PG/HG #869
Professional Geologist/Hydrogeologist and Site Manager
Toxics Cleanup Program

Attachment

cc Randy Witt, KCDT Metro Transit Design and Construction
Eric Roehl, Chevron Environmental Management Company
Shawn Parry, Touchstone NLU LLC

O'Brien, Maura (ECY)

From: Jeff Parker [jeffreysparker@gmail.com]
Sent: Thursday, September 25, 2014 12:27 PM
To: O'Brien, Maura (ECY)
Subject: Re: Metro Lake Union Site

Hi Maura, When we might expect a Responsiveness Summary responding to public comments for the Metro Lake Union site?

thanks,
Jeff Parker

On Tue, Aug 5, 2014 at 10:21 AM, Jeff Parker <jeffreysparker@gmail.com> wrote:
Hi Maura,

thank you for the fact sheet and periodic review.

Before I submit any comments I just wanted to make sure I understand the site cleanup levels, relevant pathways and points of compliance, so that my comments are worthwhile and accurately reflect the site conditions.

Comments:

(1) I understand that that Touchstone is cleaning up the soil in the north site to Method A (Table 1 in the Period Review says Industrial, but elsewhere I saw Residential- not sure if they differ, but seems like this commercial site is not "Industrial"?):

(2) 1. Are the Method A levels protective of soil leaching to groundwater/surface water and vapor intrusion?
2. If Method A is applicable at that point, what work has been done to make sure Method A is adequately protective of those other pathways?

(3) Looking at Touchstone's CAP, and confirmation sample plan, it looks like those decisions might be deferred pending soil samples from the floor of the excavation?

(4) For the south site, it appears that the Method B CULs originate in the 1998 Foster Wheeler report, were mentioned in the consent decree, and appear to still be in use today. Is that a correct read? If so, the current Method B CULs (and surface water ARARs) for benzene, toluene, ethylbenzene, naphthalene, and lead are lower. In particular, lead's aquatic chronic (173-201A) CUL protective of surface water is 0.54 ug/L, compared to the 1998 CUL of 5 ug/L.

(6)

(5) Again for the south site, I was not able to find whether the vapor intrusion pathway has been considered and that the GW CULs and/or Soil CULs are protective of that pathway. Also, how is the soil leaching to groundwater and surface water pathway being addressed especially for soil with residual product?

The other area of inquiry I have is about the COC list. Not being able to read up on the entire back story about how this list came to be, I am interested in a reiteration of that history, noting the following:

(7) 1. Why soil COCs such as cadmium, chromium, and mercury and TPH are not on the GW list, and whether they will be screened in GW?

(8) 2.Table 6-1 Required Testing for Petroleum Releases in the Ecology Guidance for Site Checks and Site Assessments for Underground Storage Tanks, lists a lot of petroleum release related constituents that could be applicable to a bulk petro storage site. Have all of those constituents been tested for? e.g. MTBE, EDC, & EDB since gasoline is a soil COC? And PCBs and full VOC suite since heavy oil is a soil COC (and maybe historically waste oil or unknown oils were present on the site?). I was not able to find those constituents in the older data.

Feel free to respond via email or give me a call 734-0937 if that would be easier.
Also, if my understanding is generally correct, just add them to the public comments.

thanks,
Jeff Parker
3636 Densmore Ave N

On Fri, Jul 11, 2014 at 10:01 AM, Jeff Parker <jeffreysparker@gmail.com> wrote:
Hi Maura,

I see from the Metro Lake Union Site that some new cleanup actions are to begin July 2014. I'm confused about the process involved for cleanup at this site, as I have not received any information about public participation and do not see a new cleanup action plan on the ISIS documents that would have a formal comment period. Can you help me understand the process better. Is the July groundwater/LNAPL work just another interim action?

In particular, I have some questions/concerns about groundwater/surface water cleanup levels used for compliance monitoring, but can save those if there is a formal comment period.

thanks,
Jeff Parker
3636 Densmore Ave N

Appendix D.

Site Photograph Log

1930, 1999, 2004 and May and July 2014

Figure 1. Circa 1930s view of former Chevron Bulk Petroleum Terminal #100-1327 north of ship and tank farm shown at lower left of photograph and university and bridge in background at center of photograph.

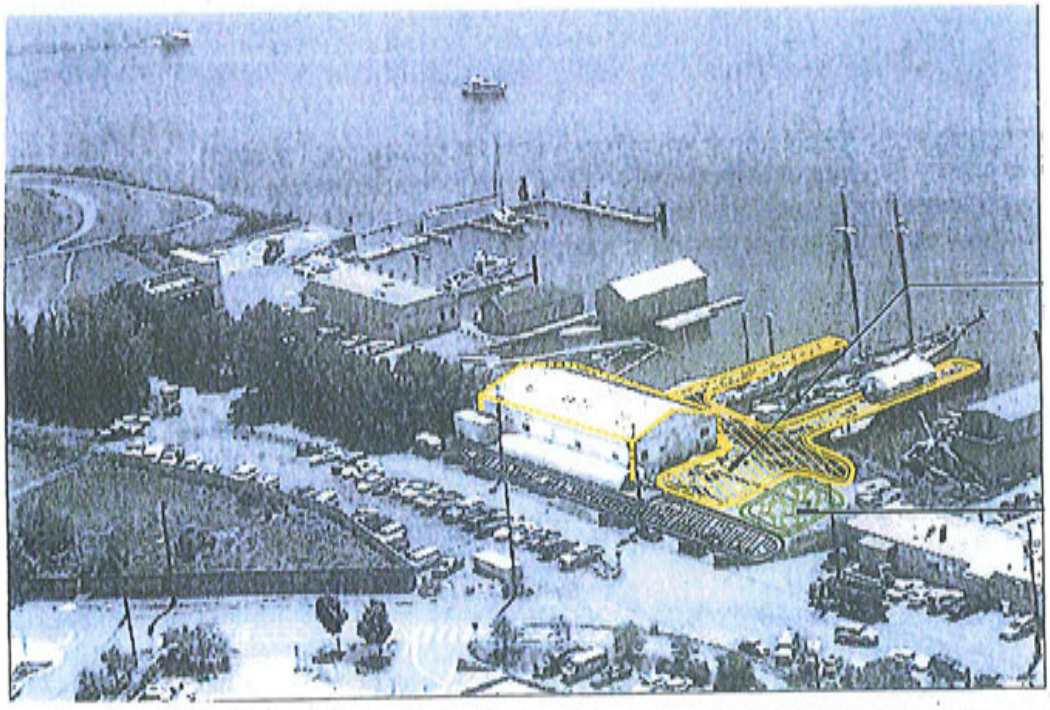

Figure 2. Aerial photograph looking at Metro Lake Union Site also called KCDT Metro Transit Facilities North and former Chevron Bulk Petroleum Terminal #100-1327 and view of South Yard with two docks outlined in yellow at north shore of Lake Union in Seattle.

Figure 3. Metro Lake Union Site former Chevron Bulk Terminal #100-1327 above ground petroleum storage tank (AST) farm located at North Yard to begin demolition with excavator to cut and dismantle ASTs for metal recycling in October 1999.

Figure 4. Former AST tank farm area with all tanks removed and shallow soils with sand blast grit and paint chips removed that had shown elevated metal concentrations. This was Metro/Chevron Cleanup Action Plan phase 1 completed in October 1999-January 2000.

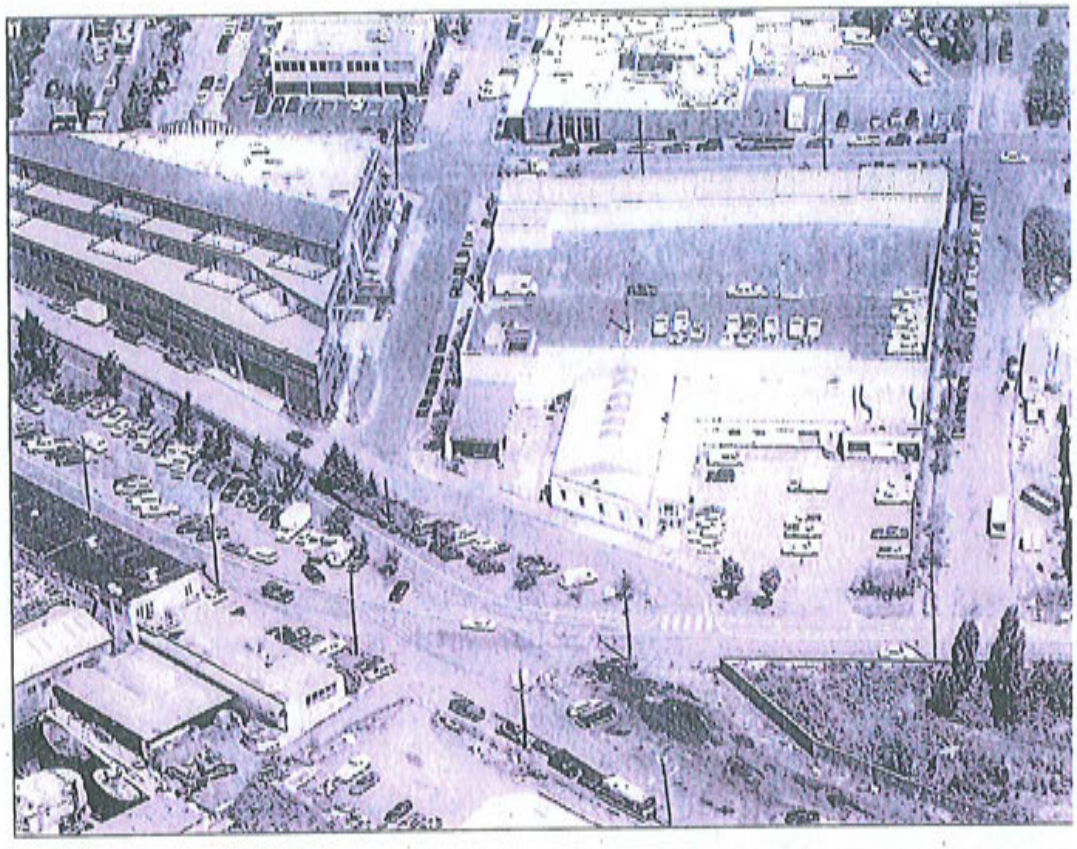

Figure 5. Aerial view looking north at Metro Lake Union Site at North Yard and soon to become the Touchstone NLU Northedge Technology Center. The North Yard was home to the former above ground petroleum storage tanks (ASTs) ranging from 7 to 11 ASTs and capacity from 37,800 to 440,700 gallons that were removed as phase 1 in 1999. The AST tank farm is currently a car parking lot and Woodlawn Avenue N on west side, N 34th Avenue at north side, and Densmore Avenue N on east side.

Figure 6. View looking north at Metro Transit Facilities North- North Yard and former Chevron Bulk Terminal #100-1327 with N Northlake Way and biking-pedestrian Burke-Gilman Trail in foreground with one pedestrian.

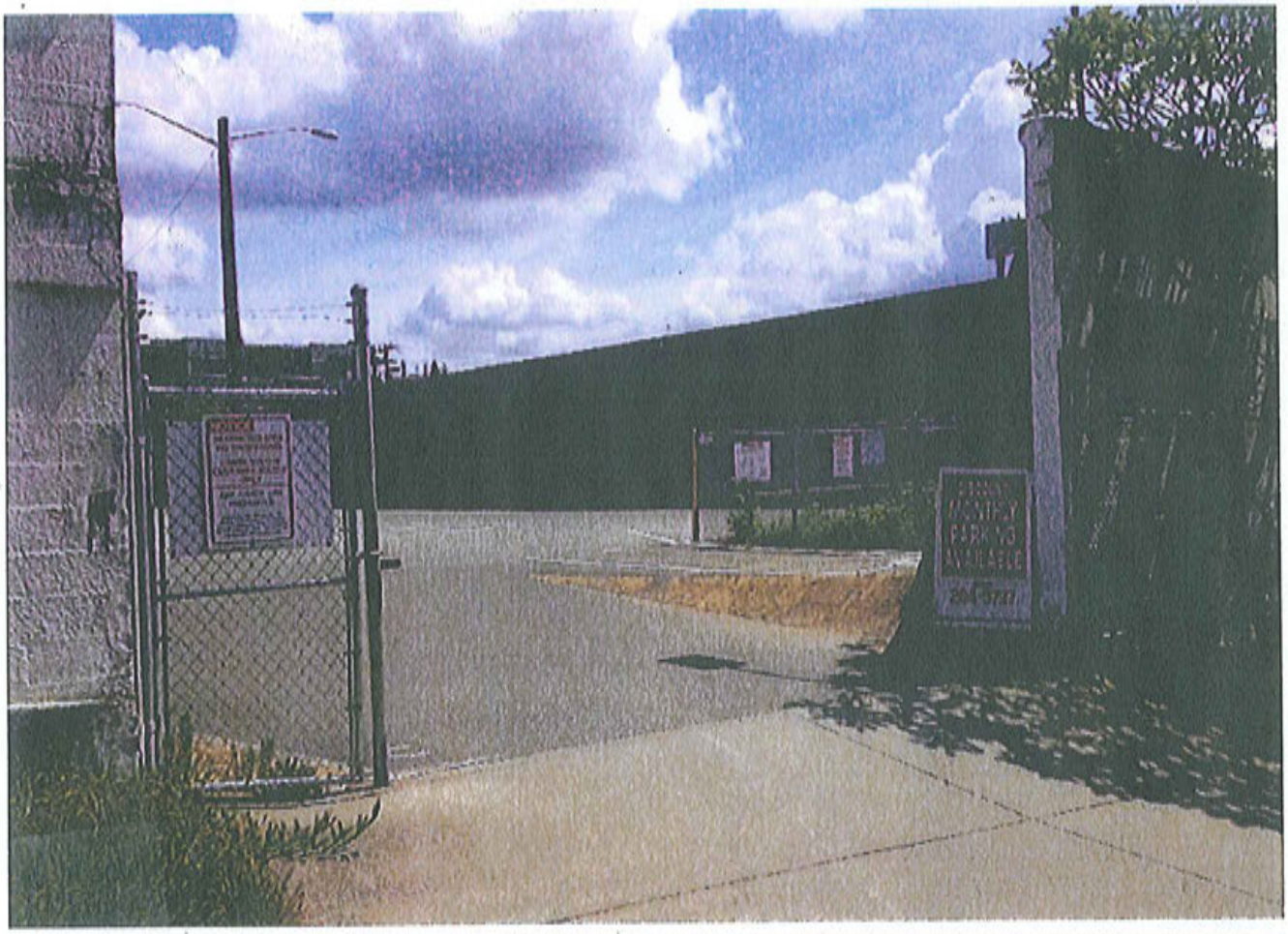

Figure 7. View east to former Metro Lake Union Site North Yard above ground storage tank area and currently used for vehicle parking.

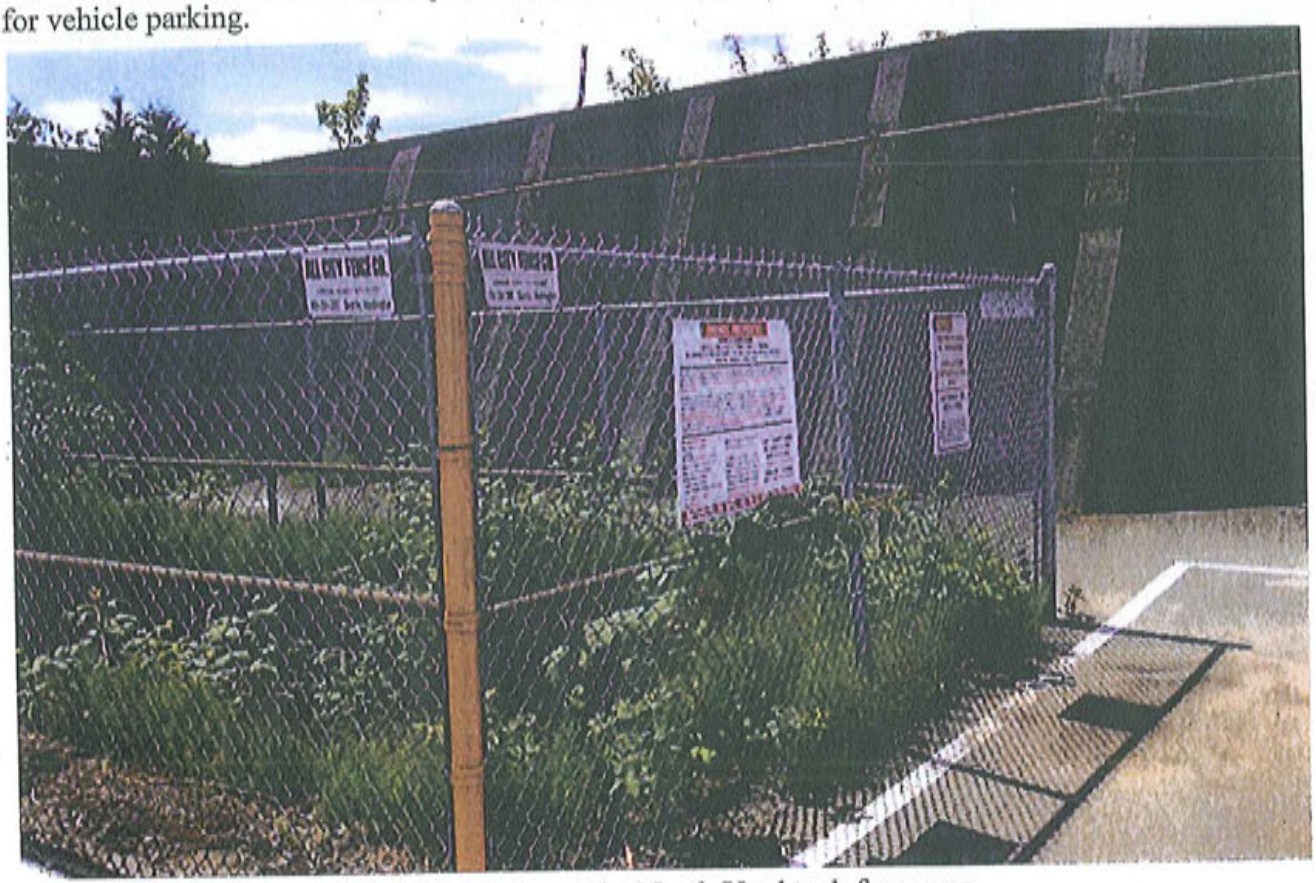

Figure 8. Fenced off former oil-water separator at the North Yard tank farm area.

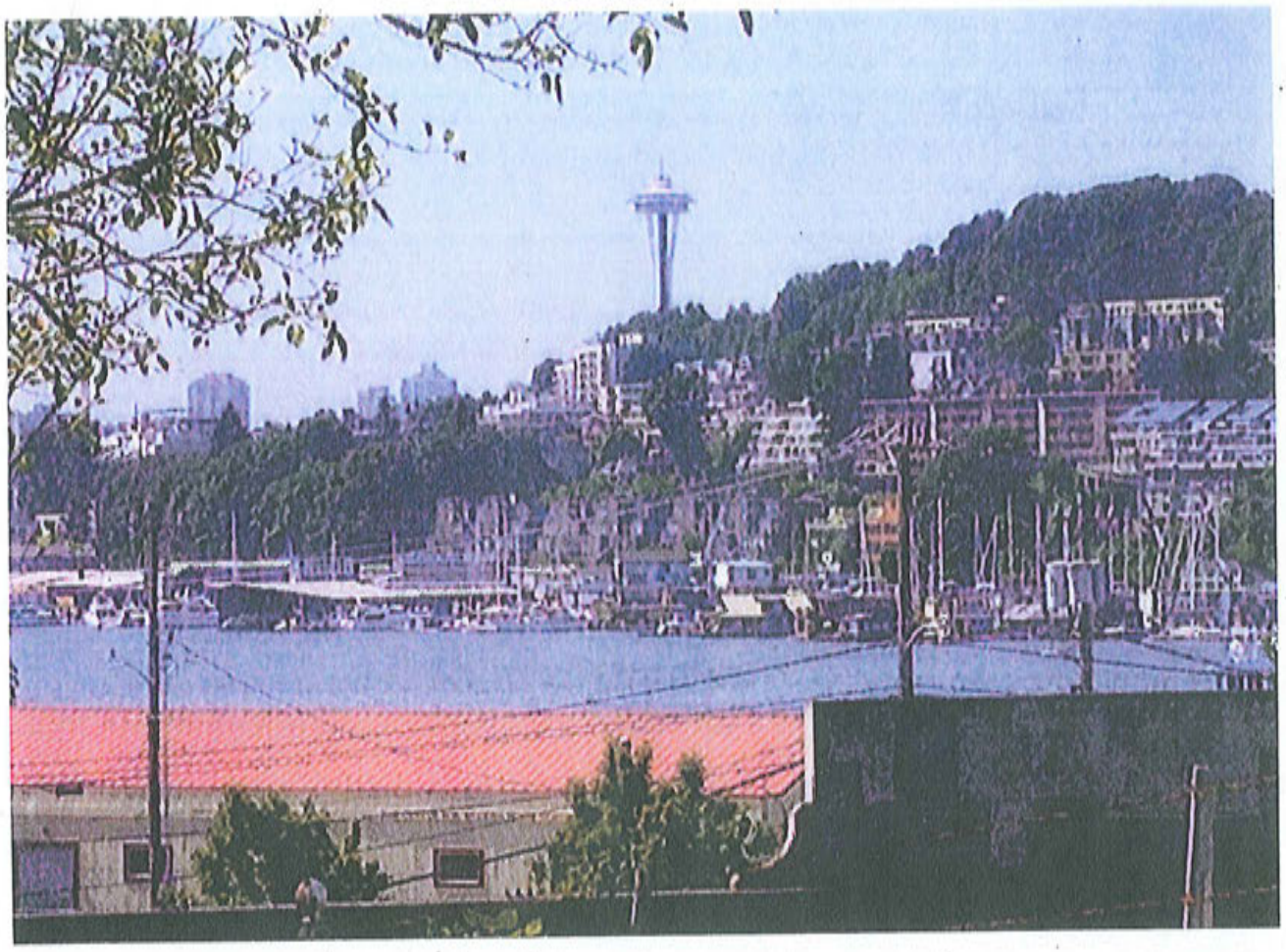

Figure 9. View looking south to Lake Union from North Yard and red roof of Center for Wooden Boats Workshop & Warehouse and former Metro Lake Union Site South Yard warehouse and in background the Lake Union southwest shoreline and Seattle Space Needle.

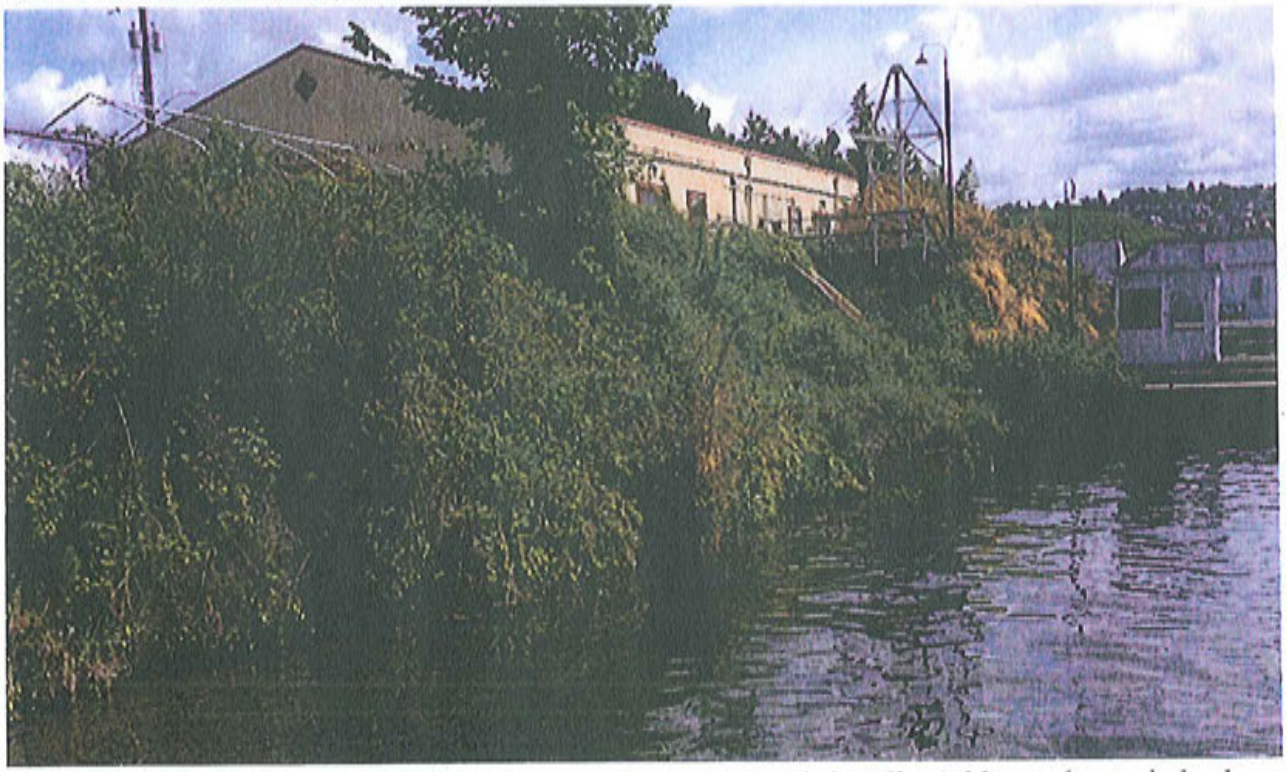

Figure 10. North shore of Lake Union and former Metro South Yard shoreline with warehouse in background and one of two docks at center right edge.

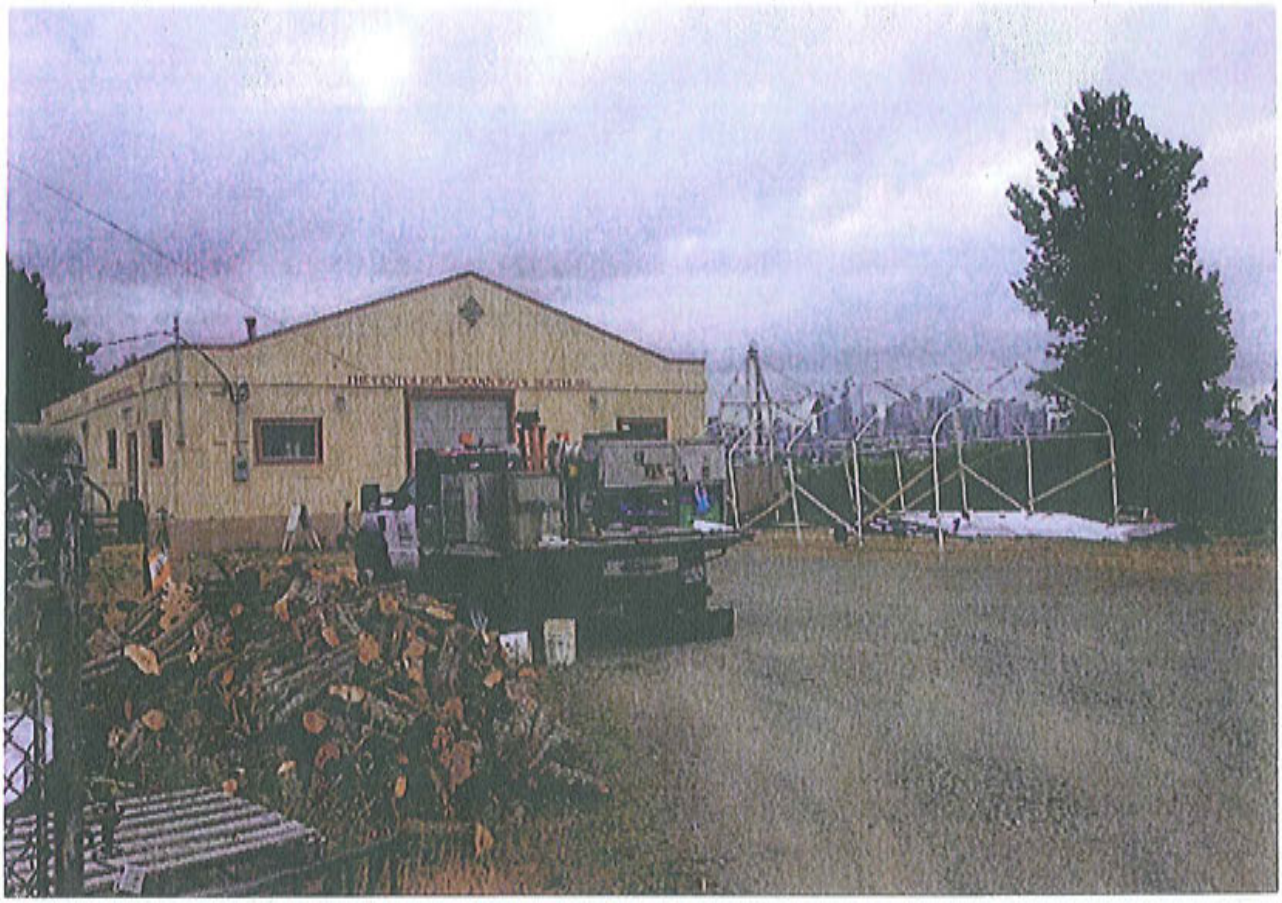

Figure 11. Former Metro Lake Union South Yard warehouse and now Center for Wooden Boats Workshop & Warehouse. Lake Union is to the right and south and not shown.

Figure 12. Center for Wooden Boats sign at South Yard entrance.

Figure 13. View looking east to former Metro Lake Union Site South Yard shoreline and one of two docks and warehouse in background to left.

Figure 14. View looking south to dock and Lake Union north shore from the Metro Lake Union Site South Yard showing one of two docks and north shore with large ships anchored nearby.

Figure 15. Close up photograph of rip-rap at Metro Lake Union Site South Yard shoreline with common horsetail plant (Equisetum arvense).

Figure 16. Arcadis-US consultant opening monitoring well monument for groundwater compliance sampling and water elevation measurement at Metro Lake Union Site at public right-of-way MW-22.

Figure 17. Cascade Drilling, LP is installing a new boring for groundwater testing and new monitoring well located at public right-of-way at N Northlake Place at Metro Lake Union Site.

Figure 18. Cascade Drilling, LP is installing white PVC well casing for new groundwater compliance well located a public right-of-way at N Northlake Place at Metro Lake Union Site.