



## **PERIODIC REVIEW**

**L & C Deli Vancouver  
Facility Site ID#: 1035**

**13908 Northeast 20<sup>th</sup> Avenue  
Vancouver, Washington 98686**

**Southwest Region Office**

**TOXICS CLEANUP PROGRAM**

**March 2010**

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## 1.0 INTRODUCTION

This document is a review by the Washington State Department of Ecology (Ecology) of post-cleanup site conditions and monitoring data to ensure that human health and the environment are being protected at the L & C Deli site (Site). Cleanup at this Site was implemented under the Model Toxics Control Act (MTCA) regulations, Chapter 173-340 Washington Administrative Code (WAC).

Cleanup activities at this Site were completed under the Voluntary Cleanup Program. The cleanup actions resulted in concentrations of petroleum hydrocarbons remaining in soil and volatile organic compounds (VOCs) remaining in ground water at the Site that exceed MTCA Method A cleanup levels. The MTCA Method A cleanup levels for soil are established under WAC 173-340-740(2). WAC 173-340-420 (2) requires that Ecology conduct a periodic review of a site every five years under the following conditions:

- Whenever the department conducts a cleanup action;
- Whenever the department approves a cleanup action under an order, agreed order or consent decree;
- Or, as resources permit, whenever the department issues a no further action opinion
- And one of the following conditions exists:
  - (a) Institutional controls or financial assurance are required as part of the cleanup;
  - (b) Where the cleanup level is based on a practical quantitation limit;
  - (c) Where, in the department's judgment, modifications to the default equations or assumptions using site-specific information would significantly increase the concentration of hazardous substances remaining at the site after cleanup or the uncertainty in the ecological evaluation or the reliability of the cleanup action is such that additional review is necessary to assure long-term protection of human health and the environment.

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

- (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 of 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.

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

## **2.0 SUMMARY OF SITE CONDITIONS**

### **2.1 Site History**

The former L&C Deli property is approximately one acre in size and is located at the northwest corner of the intersection of Northeast 20th Avenue and Northeast 139th Street in unincorporated Clark County near Vancouver, Washington. Following remedial activities, the Site was removed from the State Hazardous Sites List in 1995.

The subject property is developed with a two-story commercial office building and is named the 1-205 Center. A portion of the 1-205 Center building was formerly occupied by the L&C Deli, which operated a convenience store with retail gasoline sales. A pump island and three 12,000-gallon underground storage tanks (USTs) are located on the subject property to the southeast of the building. The USTs were taken out of service in 1988 and brought back into service in 1992. The USTs and pump remain at the Site, though it is currently inactive and unused.

### **2.2 Site Investigations**

In September 1987, gasoline product and vapors were discovered in a sanitary sewer line in a location near the L&C Deli Site. In addition, gasoline product was discovered floating on the groundwater in a number of test pits excavated in the vicinity of the subject Site. In November 1987, an extraction well and recovery system were installed by an Ecology contractor at the subject Site to recover the free product gasoline floating on the groundwater.

Subsequent integrity testing of the USTs and lines located on the subject property indicated that although the tanks appeared to be sound, the associated lines may have been leaking product. The recovery of gasoline product from the extraction well diminished in late 1988, and in February 1989, Ecology allowed the recovery system to be permanently shut down. A total of 524 gallons of gasoline product was recovered during the operation of the recovery system.

On August 10, 1990, the clients received an Order from Ecology requiring that a remedial investigation and feasibility study (RI/FS) be performed to facilitate the remediation of the gasoline product that may have remained adsorbed in the soils and dissolved in the groundwater in the vicinity of the subject Site.

Hahn and Associates, Inc. (HAI) performed remedial investigative activities at the subject Site from October 1990 to March 1991 through the installation of 11 soil borings and 7 groundwater monitoring wells. The remedial investigation appeared to define the extent of the impacts to the soil and groundwater on and in the vicinity of the subject Site. A feasibility study of remedial options was also prepared by HAI.

In January 1992, WDOE prepared a Cleanup Action Plan (CAP) which summarized the results of the RI/FS and outlined the preferred cleanup alternative. In summary, the preferred cleanup alternative involved: 1) the partial removal of contaminated soils; 2) the surface treatment of the

excavated soils by bioremediation; 3) the in-situ degradation of the remaining soil contamination by natural processes; and 4) a modified pump and treat method for remediation of the shallow groundwater from the excavation pit.

On March 2, 1992, Ecology issued an Enforcement Order requiring implementation of the preferred cleanup alternative as outlined in the CAP. Also included in the Enforcement Order was a request for additional documents including: 1) an engineering design report; 2) construction plans and specifications; 3) an operation and maintenance plan; 4) a compliance monitoring plan; 5) a sampling and analysis plan; and 6) a health and safety plan.

Contaminated soil removal activities, confirmation soil sampling activities and groundwater removal activities took place in September 1992. Remedial excavation was conducted in areas identified during the RI/FS to contain soil contamination at concentrations exceeding MTCA Method A cleanup levels.

The final depth of the soil excavation ranged from approximately 9 to 11 feet below the ground surface. Groundwater was encountered in the excavation pit at a depth of approximately 8 to 9 feet. The excavation of soil proceeded unencumbered in all directions, except to the east and southeast, where excavation activities were halted so as not to undermine underground utilities in these areas. The confirmation sampling indicated that the contaminated soil was removed both laterally and vertically to below regulatory cleanup levels, with the exception of the east and southeast walls where soil contamination was left in-place at concentrations of 43 to 1,100 parts per million of gasoline-range petroleum hydrocarbons (TPH-G).

## 2.3 Cleanup Levels

MTCA Method A cleanup levels for unrestricted land use were used for the Site. Current MTCA Method A cleanup levels have changed significantly since remedial activities began in 1995. However, WAC 173-340-702(12) (c) [2001 ed.] 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”

Because a no further action determination was issued for the Site prior to 2001, MTCA Method A cleanup levels prior to 2001 will be used to determine whether or not the remedial activities at the Site have been effective in protecting human health and the environment.

## 2.4 Groundwater Monitoring

Groundwater monitoring was conducted at the Site from 1991 until 1996. Benzene was the primary contaminant of concern in ground water. As of the final ground water monitoring event in March 1996, benzene still exceeded MTCA Method A cleanup levels in two monitoring wells at the Site. MW-3 contained benzene at 8.0 parts per billion (ppb) and MW-5 contained benzene at 7.9 ppb. The MTCA Method A cleanup level for benzene in ground water is 5.0 ppb.

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The Enforcement Order issued by Ecology in 1992 required compliance monitoring as follows:

Compliance monitoring would be accomplished by installing seven monitor wells completed in the Silt/Clay Unit and the Silty Sand Aquifer to monitor possible migration from the contaminated zone to aquifers currently being used as drinking water supply. Monitoring would take place quarterly for the first year after soil removal occurs, biannually for two years proceeding, and annually thereafter until confirmatory soil sampling shows that the contaminated soils left in place have attained the cleanup standard.

Based upon this order, ground water monitoring should have taken place after 1996 on an annual basis until soil sampling indicated that remaining soils had attained the cleanup standard. Ecology does not have record that ground water monitoring or additional soil sampling took place after 1996.

## **2.5 Regulatory Status**

The L&C Deli Site was removed from the Washington State Hazardous Sites List (HSL) in 1995. No further action was required by Ecology at that time.

Based on the presence of soils containing TPH-G and ground water containing benzene at concentrations exceeding MTCA Method A cleanup levels, additional remedial action is likely required at the Site.

Soil contamination could be addressed by additional remedial excavation, or the implementation of institutional controls in the form of an environmental covenant. An environmental covenant would restrict property uses to prevent the exposure of contaminated soils remaining at the Site.

Ground water contamination should be evaluated by additional ground water monitoring. If a no further action determination was required immediately, additional monitoring could be combined with an environmental covenant preventing the extraction of ground water at the Site for any purpose other than monitoring.

## **3.0 PERIODIC REVIEW**

### **3.1 Effectiveness of completed cleanup actions**

Based upon the Site visit conducted on March 8, 2010, the building and asphalt cover at the Site continue to eliminate exposure pathways (ingestion, contact) to contaminated soils. The asphalt appears in satisfactory condition and no repair, maintenance or contingency actions have been required. The Site is currently occupied by a vacant retail petroleum station. A photo log is available as Appendix 6.4.

Contamination remained in soil and in monitoring wells MW-5 and MW-3 when remedial activities were concluded at the Site in 1996. Institutional controls have not been implemented to prevent the exposure of contaminated soils, and ground water monitoring has not been continued as required by the CAP that guided the Enforcement Order in 1992.

The cleanup actions completed at the Site fail to be protective of human health and the environment.

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

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

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

#### **3.3.1 Modified Cleanup Levels**

Initial cleanup at the Site was governed by Chapter 173-340 WAC (1991 ed.). Current WAC 173-340-702(12) (c) provides that,

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

Although cleanup levels changed for several compounds as a result of modifications to MTCA in 1996 and 2001, contamination remains at the Site above MTCA Method A cleanup levels and the cleanup action still fails to be protective of human health and the environment. A comparison of cleanup levels from pre-2001 and post-2001 are available in the table below:

**Table 1: MTCA Method A Cleanup Levels**

Analyte	1991 MTCA Soil Cleanup Level (ppm)	2001 MTCA Method A Soil Cleanup Level (ppm)	1991 MTCA Method A Groundwater Cleanup level (ppb)	2001 MTCA Method A Groundwater Cleanup Level (ppb)
Benzene	0.5	<b>0.03</b>	5	<b>5</b>
Ethylbenzene	20	<b>6</b>	30	<b>700</b>
Toluene	40	<b>7</b>	40	<b>1000</b>
Total Xylenes	20	<b>9</b>	20	<b>1000</b>
TPH	NL	<b>NL</b>	1000	NL
TPH-Gas	100	<b>100/30</b>	NL	1000/ <b>800</b>
TPH-Diesel	200	<b>2000</b>	NL	<b>500</b>
<b>NL = None listed</b>				

### 3.4 Current and projected Site use

The Site is currently vacant and for sale, but the facilities are designed to be used for commercial purposes. This use is not likely to have a negative impact on the risk posed by hazardous substances contained at the Site.

### 3.5 Availability and practicability of higher preference technologies

The remedy implemented included containment of hazardous substances. This remedy would likely be protective of human health and the environment if institutional controls were implemented. Additional remedial actions may be required at the Site to address ground water contamination. While higher preference cleanup technologies may be available to address soil contamination, they are still not practicable at this Site.

### 3.6 Availability of improved analytical techniques to evaluate compliance with cleanup levels

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



## 4.0 CONCLUSIONS

- Soil may remain at the Site with concentrations of TPH-G exceeding MTCA Method A cleanup levels. Ground water may remain at the Site with concentrations of benzene exceeding MTCA Method A cleanup levels.
- Institutional controls have not been implemented at the Site to prevent exposure to contaminated soils or ground water.
- Additional ground water monitoring is required at the Site.

Based on this review, the Department of Ecology has determined that the remedy conducted at the Site is **not** protective of human health and the environment.

The property owner should arrange for the collection and analysis of ground water samples from all wells as required in the cleanup action plan within two weeks of receipt of Ecology's September 23, 2010 letter.

Institutional controls (environmental covenant) must be filed with the Clark County Auditor.

Ecology will rescind the No Further Action status in Ecology's Confirmed and Suspected Contaminated Sites database if these steps are not taken within **60 days as required**.

### 4.1 Next Review

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

## 5.0 REFERENCES

Ecology. *Enforcement Order No. DE 90-S135*. July 31, 1990.

Ecology *Enforcement Order No. DE 92TC-S112*. March 2, 1992.

Hahn and Associates, Inc. *Remedial Investigation*. August 19, 1991.

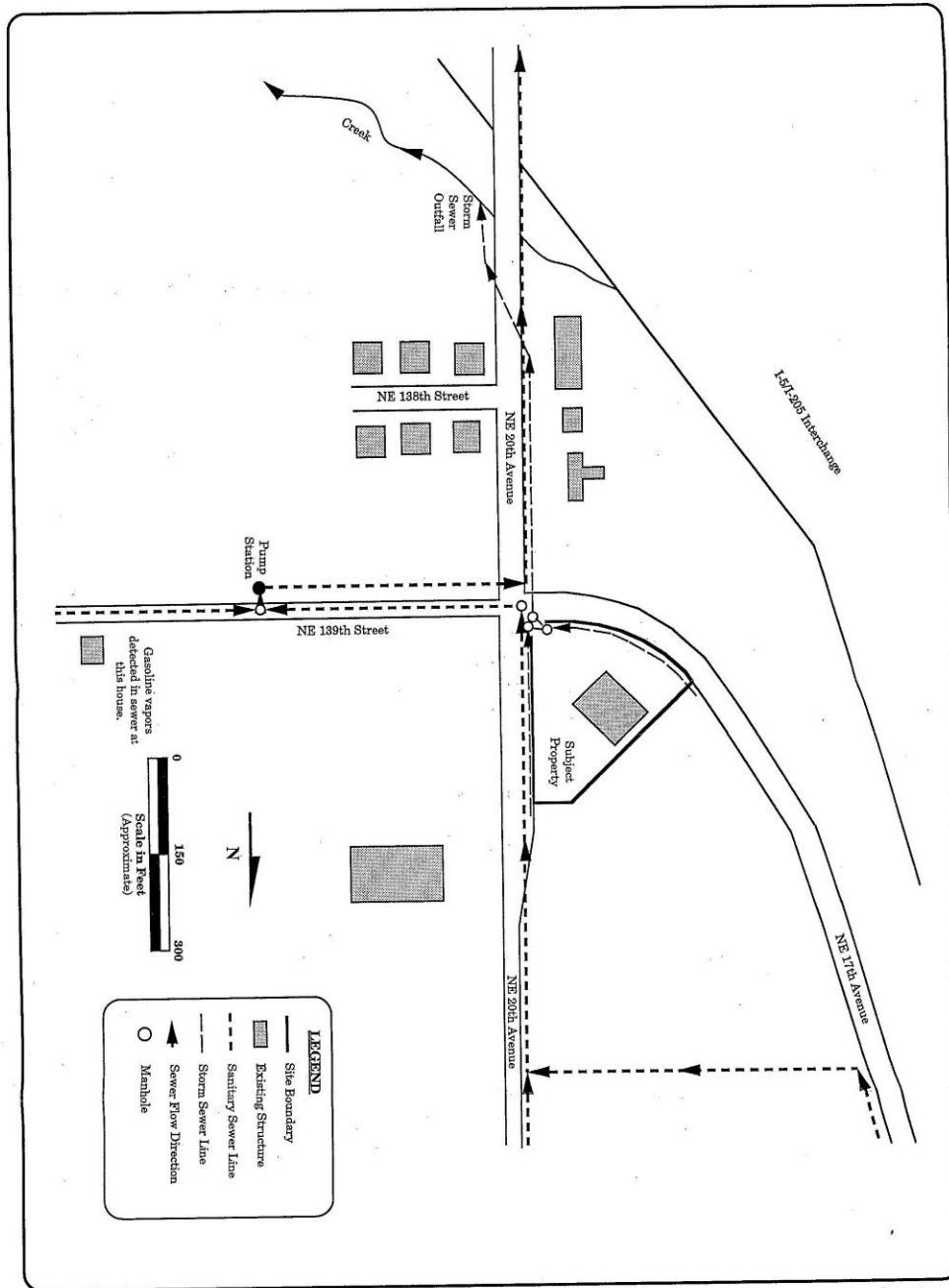
Hahn and Associates, Inc. *A Report on Petroleum-Contaminated Soil Cleanup*. May 14, 1993.

Fitt Environmental. *Report of Groundwater Monitoring at Vista Mart*. March 1996.

Ecology. *Site Visit*. March 8, 2010.

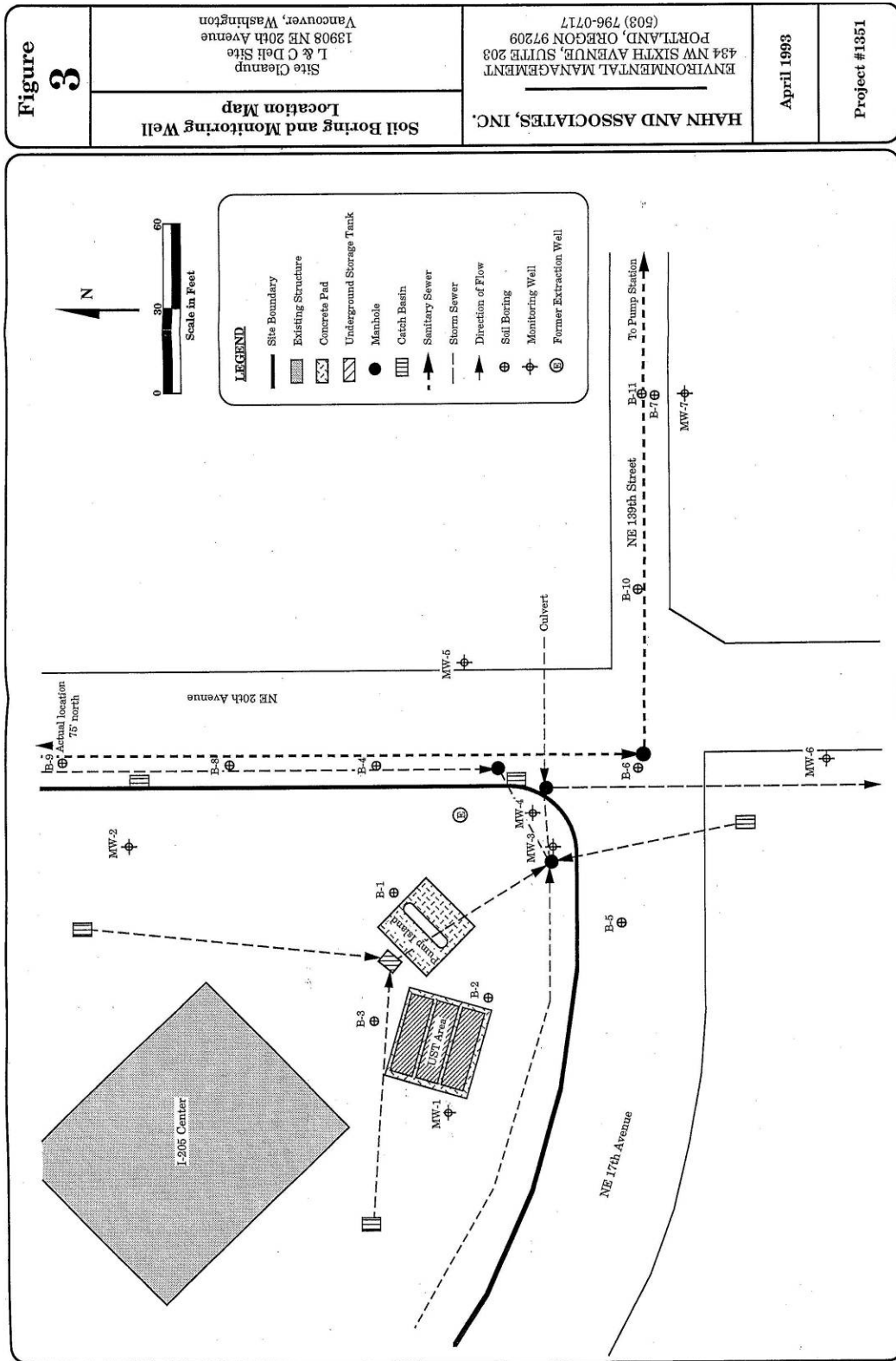
## **6.0 APPENDICES**

### 6.1 Vicinity Map



HAI Project #1351	March 1991	<b>HAHN &amp; ASSOCIATES</b> INCORPORATED ENVIRONMENTAL MANAGEMENT 434 NW SIXTH AVENUE, SUITE 203 PORTLAND, OREGON 97209 503/796-0717	<b>Site Vicinity Map</b>  Remedial Investigation L & C Deli Site 13908 NE 20th Avenue Vancouver, Washington	<b>2</b> Figure

### 6.2 Site Plan



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## 6.3 Photo log

**Photo 1: L&C Site Pump Island - from the northeast**



**Photo 2: L&C Deli Building – from the west**



**Photo 3: L&C Deli Site - from the west**



**Photo 4: L&C Deli UST Fill**

