



STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

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May 26, 2016

Mr. Ted Yi  
YCH Enterprise Corporation  
600 128<sup>th</sup> Avenue NE  
Bellevue, WA 98005

**Re: Opinion pursuant to WAC 173-340-515(5) on Remedial Investigation Report for the following Hazardous Waste Site:**

- **Site Name:** Duvall Market
- **Property Address:** 15802 Main Street Northeast, Duvall, WA 98019
- **Facility/Site No.:** 764631
- **VCP Project No.:** NW2972
- **Cleanup Site ID No.:** 499

Dear Mr. Yi:

Thank you for submitting documents regarding your Remedial Investigation (RI) for the Duvall Market facility (Site) for review by the Washington State Department of Ecology (Ecology) under the Voluntary Cleanup Program (VCP). Ecology appreciates your initiative in pursuing this administrative option for cleaning up hazardous waste sites under the Model Toxics Control Act (MTCA), Chapter 70.105D RCW.

This letter constitutes an advisory opinion regarding a review of submitted documents/reports pursuant to requirements of MTCA and its implementing regulations, Chapter 70.105D RCW and Chapter 173-340 WAC, for characterizing and addressing the following releases at the Site:

- Total gasoline range petroleum hydrocarbons (TPH-G) and benzene into soil.

Ecology is providing this advisory opinion under the specific authority of RCW 70.105D.030(1)(i) and WAC 173-340-515(5).

This opinion does not resolve a person's liability to the state under MTCA or protect a person from contribution claims by third parties for matters addressed by the opinion. The state does not have the authority to settle with any person potentially liable under MTCA except in accordance with RCW 70.105D.040(4). The opinion is advisory only and not binding on Ecology.

Ecology's Toxics Cleanup Program has reviewed the following information regarding your



completed remedial actions:

1. Kane Environmental Inc., *Remedial Investigation Report*, April 11, 2016.
2. State of Washington Department of Ecology, *Opinion Pursuant to WAC 173-340-515(5) on Proposed Remedial Action for the Following Hazardous Waste Site: Duvall Market*; December 23, 2015.
3. Kane Environmental Inc., *Response to Washington Department of Ecology Letter (September 23, 2015)*, October 13, 2015.
4. State of Washington Department of Ecology, *Opinion Pursuant to WAC 173-340-515(5) on Proposed Remedial Action for the Following Hazardous Waste Site: Duvall Market*; September 23, 2015.
5. Kane Environmental Inc., *Work Plan Addendum to April 2015 Phase II Environmental Assessment*; July 30, 2015.
6. State of Washington Department of Ecology, *Further Action at a Property Associated with a Site: Duvall Market*; June 9, 2015.
7. Kane Environmental Inc., *Limited Phase II Environmental Site Assessment*, April 7, 2015.
8. WT Services Company, *Independent Cleanup Action, 15802 Main Street, Duvall, WA*, September 24, 2002.

The reports listed above will be kept in the Central Files of the Northwest Regional Office of Ecology (NWRO) for review by appointment only. You can make an appointment by calling the NWRO resource contact at (425) 649-7235 or sending an email to: [nwro\\_public\\_request@ecy.wa.gov](mailto:nwro_public_request@ecy.wa.gov).

In addition, the following reference was used:

1. Department of Ecology, *Model Remedies for Sites with Petroleum Contaminated Soils*, September 2015. Publication No. 15-09-043.

The Site is defined by the extent of contamination caused by the following releases:

- TPH-G and benzene into soil.

Based on a review of supporting documentation listed above, pursuant to **requirements contained in MTCA and its implementing regulations, Chapter 70.105D RCW and Chapter 173-340 WAC, for characterizing and addressing the following release(s) at the Site, Ecology has determined that the RI completed does not qualify the Site for a No Further Action determination through the Model Remedy approach proposed for the following reasons:**

- The report states that Model Remedy 3 applies to the Site, however the following reasons make this remedy not applicable:
  - The soil removal action was not implemented to the greatest degree practicable as soil sampling locations 729-06 and 729-01 appear to be located within the Property boundaries and may potentially be further excavated. Use of a model remedy requires that contaminated soil be removed to the greatest degree practicable unless it is deemed inaccessible due to the presence of structures or safety concerns (Chapter 4 of the Model Remedy Guidance).
  - Method A cleanup levels are listed as the soil cleanup levels to be met, however, multiple confirmation soil sample results did not meet the TPH-G Method A cleanup level. Since evidence indicating that ground water has not been impacted is presented in the RI, a Method B Direct Contact cleanup level may be more appropriate for this Site.
  - An environmental covenant is required as part of Model Remedy 3, however, covenants are approved when removal of the remaining contamination has been shown to not be feasible.
- Model Remedy 4 may be a better option for remediating the Site using a model remedy. Sampling location 729-01 at 5 feet below ground surface (bgs) had an exceedance of the Method B direct contact cleanup level of 1,500 milligrams per kilogram (mg/kg) for TPH as established in the Model Remedies Guidance (Chapter 5). However, as this sampling result is from 2002, the contaminant concentrations in the area may have decreased due to attenuation by now. If concentrations in that location are now below the 1,500 mg/kg Method B cleanup level, consideration of Model Remedy 4 is possible. Alternatively, excavation and collection of confirmation soil samples of the area exceeding cleanup levels may also allow application of this Model Remedy. If there are structures in place or safety concerns that prevent excavation at this location, provide additional evidence that illustrates such hindrances.
- For applying a model remedy the Site must meet the criteria for an exemption from conducting a Terrestrial Ecological Evaluation (TEE) or be eligible to complete a simplified TEE. The Site does not qualify for an exemption under WAC 173-340-7491. In addition, the Simplified TEE-Exposure Analysis included as Attachment I to the RI indicates that there is less than 0.25 acres of contiguous undeveloped land on the Site or within 500 feet of any area of the Site. This evaluation is incorrect as an undeveloped King County Parks property that includes part of the Snoqualmie Valley Trail is located less than 500 feet from the Property and may occupy an area over 1.5 acres with the 500-foot radius. Please provide additional evidence to support the conclusions of the Simplified TEE-Exposure Analysis.
- The report states that ground water monitoring wells KMW-1, KMW-2 and KMW-3 were installed “under flowing artesian conditions”, however, neither the well construction logs included in the report, nor the drillers well construction logs



submitted to Ecology's Well Logs database provide any indication of the artesian nature of the wells. The depth to water during drilling is shown as "N/A"; depth to water (static) is not completed. In addition, well construction logs included in Attachment F of the report are labeled MW-1, MW-2 and MW-3 and not KMW-1, KMW-2, and KMW-3 on some of the pages.

- Figure 3 of the RI shows the direction of ground water flow, however, no ground water elevations are included. Ground water flow direction should be measured during several rounds of well gauging and shown in figures, a table of ground water elevation data, and a Rose diagram, if possible.
- Figure 3 of the RI illustrates several sampling locations without contamination exceeding the MTCA Method A Cleanup Level (729-04, 808-02, 729-02, 812-01, and 812-02), however, the results for these samples are not included in any of the tables.
- As of June 1, 2016 independent remedial action plans and reports submitted for Ecology review under the Voluntary Cleanup Program (VCP) need to include the information specified in the applicable checklist found at <http://www.ecy.wa.gov/programs/tcp/policies/checklists.html>. Due to overwhelming demand for staff services under the VCP, Ecology will not accept a plan or report for review until it is complete.
- Electronic submittal of all sampling data into Ecology's Electronic Environmental Information Management (EIM) database is a requirement in order to receive a final Ecology opinion for this Site. Jenna Durkee (email [jedu461@ecy.wa.gov](mailto:jedu461@ecy.wa.gov)), or via telephone at 509-454-7865) is Ecology's contact and resource on entering data into EIM.

**This opinion does not represent a determination by Ecology that a proposed remedial action will be sufficient to characterize and address the specified contamination at the Site or that no further remedial action will be required at the Site upon completion of the proposed remedial action.** To obtain either of these opinions, you must submit appropriate documentation to Ecology and request such an opinion under the VCP. **This letter also does not provide an opinion regarding the sufficiency of any other remedial action proposed for or conducted at the Site.**

Please note that this opinion is based solely on the information contained in the documents listed above. Therefore, if any of the information contained in those documents is materially false or misleading, then this opinion will automatically be rendered null and void.

The state, Ecology, and its officers and employees make no guarantees or assurances by providing this opinion, and no cause of action against the state, Ecology, its officers or employees may arise from any act or omission in providing this opinion.

Again, Ecology appreciates your initiative in conducting independent remedial action and requesting technical consultation under the VCP. As the cleanup of the Site progresses, you may request additional consultative services under the VCP, including assistance in identifying applicable regulatory requirements and opinions regarding whether remedial actions proposed



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for or conducted at the Site meet those requirements.

If you have any questions regarding this opinion, please contact me at 425-649-7058 or email at [taca461@ecy.wa.gov](mailto:taca461@ecy.wa.gov).

Sincerely,



Tamara Cardona, PhD  
NWRO Toxics Cleanup Program

TC:mc

Enclosures: Site Description and Diagrams

cc: David Rankin, Kane Environmental, Inc.  
Sonia Fernandez, VCP Coordinator, Ecology

## **Site Description and Diagrams**

## Site Description

*This section provides Ecology's understanding and interpretation of Site conditions, and is the basis for the opinions expressed in the body of the letter.*

**Site:** The Site is defined as total gasoline range petroleum hydrocarbons (TPH-G) and benzene in soil located at 15820 Main Street Northeast in Duvall, Washington (Property). The Property, which corresponds to King County tax parcel numbers 2130700470, 2130700460, and 2130700445, is a total of 0.5 acres in size.

**Area and Property Description:** The Property is the current location of a convenience store and strip mall. The strip mall consists of a single split-level 6,744-square foot building constructed in 1974 on the north half of the Property in a mixed land use zone. The Property is bounded by NE Virginia Street to the north; Main Street to the west; an alley to the east, and NE Stewart Street to the south. Businesses nearby include an antique mall to the north, a closed drive-through car wash to the northeast, a tavern to the west, and a Shell-branded convenience store/gasoline station to the southwest. There is also vacant land to the northwest and a single family residence to the west.

**Property History and Current Use:** It is unclear when the Property was initially developed. RI report states that evidence of fueling activities in the southwest corner of the Property appeared in 1930. In 1970 the Property appeared to be vacant. The current retail structure was constructed in 1974.

**Sources of Contamination:** The source of contamination on the Property is two former gasoline underground storage tanks (USTs) that reportedly last operated in 1976. The USTs had storage capacities of approximately 675 and 4,000 gallons. They were both decommissioned in 2002. Soil samples collected at the time of the UST removal contained TPH-G and benzene at concentrations exceeding Method A cleanup levels.

**Physiographic Setting:** The Site is located at an elevation of approximately 70 to 75 feet above mean sea level. It is located in the Puget Sound Basin, east of the Puget Sound Lowland Physiographic Province and in the Cascade Mountain foothills. The Site is underlain by alluvium.

**Surface/Storm Water System:** The surface water body closest to the Site is the Snoqualmie River approximately 500 feet to the west. Surface water runoff in the area is captured in municipal storm drains and transported to the nearest surface water drainage.

**Ecological Setting:** The surface of the Property is covered by pavement and a building. Small landscaped or green areas are present on the Property and on nearby commercial and residential Properties. It is possible that the area adjacent to the Snoqualmie River that includes the Snoqualmie Valley Trail and is owned by King County Parks located approximately 500 feet to the west of the Property may attract wildlife.

**Geology:** The Site is underlain by silty sand with gravel to depths of up to 60 feet below ground surface (bgs), the maximum depth explored.

**Ground Water:** Ground water was encountered during the most recent Site investigation, which reported artesian conditions at depths between 45 and 55 feet bgs. However, well logs do not show



these conditions adequately. A perched ground water zone was also encountered during drilling of well KMW-1, however this is also not clearly shown in the well log. Ground water is assumed to flow to the west-southwest towards the Snoqualmie River, no ground water elevations were provided in the RI report.

**Water Supply:** Drinking water is supplied to the Property by the City of Duvall which purchases water from Seattle Public Utilities. Seattle Public Utilities obtains water from the Cedar and Tolt River watersheds. According to Ecology's well log database, several water supply wells are within a mile radius of the Site. All are screened at depths below 100 feet bgs.

**Release and Extent of Soil Contamination:** Soil contamination was the result of a release from two gasoline USTs installed on the Property prior to the 1970's. Contamination was encountered in 2002 at the time the tanks were removed at concentrations above MTCA Method A cleanup levels. A soil sample at a depth of 5 feet bgs near the southern edge of the Property and south of the former UST location had concentrations as high as 1,700 milligrams per kilogram (mg/kg) of TPH-G, 2.4 mg/kg of benzene, 12 mg/kg of toluene, 9 mg/kg of ethylbenzene and 31 mg/kg of xylenes. Following removal of the USTs, an estimated 236 tons of soil were removed and disposed off-Site. However, after the soil confirmation samples were analyzed, it was determined that contamination remained in the southwest corner of the excavation at a depth of 3 feet bgs (sampling location 808-03) at concentrations of 400 mg/kg for TPH-G and 0.08 mg/kg for benzene, both above their respective MTCA Method A cleanup levels.

In preparation for reconstruction on Main Street in 2008, the City of Duvall conducted a geotechnical design study for the new pavement and utilities. Test pits are reported to have been excavated to depths of 4 feet in the utility alignment and soil samples collected at depths of 2 and 4 feet bgs in each of the test pits. The samples appear to have been analyzed for petroleum contaminants. No contamination above the MTCA cleanup levels was reported in the test pits closest to the former excavation area, which were at least 20 feet from the southern and western boundaries of the former excavation; however, the complete report was not submitted to Ecology.

In 2015, a Limited Phase II Environmental Site Assessment was completed. Three soil borings were installed within the City of Duvall right-of-way adjacent to the Property. Borings were advanced using hollow stem augers, one south and two west of the former excavation area. The borings were completed to maximum depths of 14 to 16.5 feet bgs or until drill rig refusal occurred in boulders or dense glacial till. No indicators of gasoline contamination were observed and no ground water was encountered. However, results from the boring closest to the western edge of the excavation (B-1) indicated that gasoline contamination in soil above the MTCA Method A cleanup level remains on the Site at depths of 4 and 6 feet bgs.

In 2016 three additional soil borings completed as monitoring wells were installed on the southwest corner of the Property to depths of 50 to 60 feet bgs. The three borings were completed as monitoring wells KMW-1, KMW-2, and KMW-3. Soil contamination with TPH-G exceeding the MTCA Method A cleanup level but below the Method B direct contact soil cleanup level was present in KMW-1 at depths of 6 and 7.5 feet bgs. Samples from KMW-2 were collected at a depth of 21 and 50.5 feet bgs and indicated no soil contamination present. KMW-3 was sampled at depths of 8, 12.5 and 40.25 feet bgs. No soil contamination was found in this third well. The report states that artesian ground water conditions were present in all

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three wells at depths between 45 and 55 feet bgs, however, well logs show no evidence of this finding. Ground water was sampled in all three wells and no contamination with TPH-G or BTEX was encountered.

## **Diagrams of the Site**













**LEGEND**

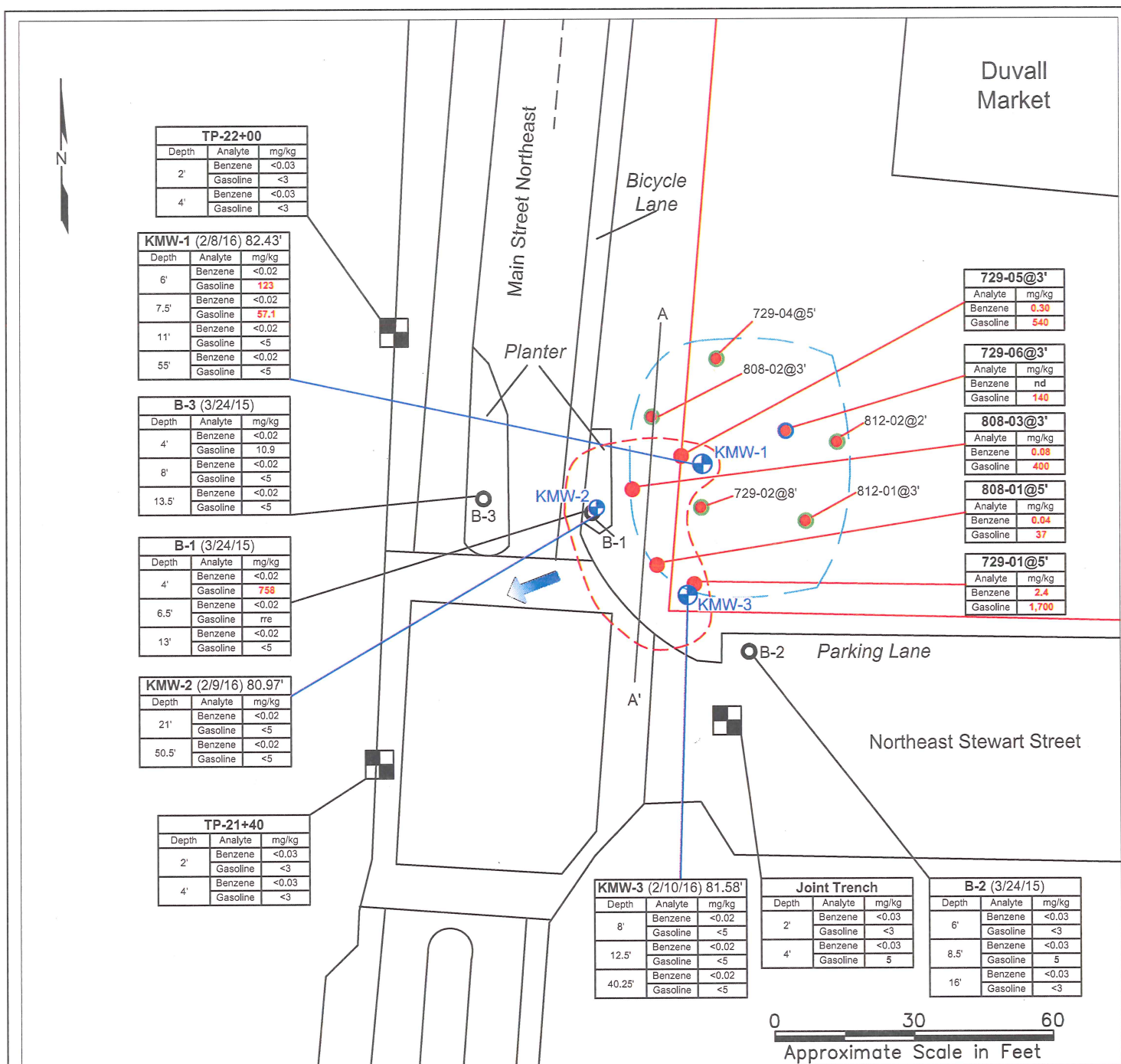
- Approximate location of property line
- - - Approximate Extent of Remedial Excavation (WT Services, 2002)

0 50 100  
Approximate Scale in Feet









## LEGEND

— Approximate Location of Property Line

○ Approximate Locations of 2015 Hollow Stem Auger Borings

⊕ Approximate Locations of 2016 Groundwater Monitoring Well Installations

● Approximate Locations of 2002 WT Services Sample Collection with Soil with MTCA Method A Exceedances Left In Place

● Green Indicates no MTCA Exceedances

● Blue Indicates Subsequent Over-excavation of Contaminated Soil

■ Approximate Locations of 2008 HWA Soil Sample Collection

--- Approximate Boundary of 2002 WT Services Excavation

--- Approximate Boundary of Zone of Contaminated Soil

➡ Direction of Calculated Groundwater Gradient (2/29/16)

A—A' Path of Cross Section Displayed in Figure 4

Soil Data Appearing in Red Exceed the MTCA Method A Soil Cleanup Level for Unrestricted Land Uses