STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
Northwest Regional Office • 3190 160th Avenue SE • Bellevue, Washington 98008-5452 • (425) 649-7000

March 31, 2010

Ms. Carol Campagna
Shell Oil Products US
20945 S. Wilmington Ave
Carson, CA 9810

Re: Further Action at the following Site:

- **Site Name:** Shell Station 121771
- **Site Address:** 22026 Marine View Drive South, Des Moines
- **Facility/Site No.:** 88387929
- **VCP Project No.:** NW2081

Dear Ms. Campagna:

The Washington State Department of Ecology (Ecology) received your request for an opinion on your independent cleanup of the Shell Station 121771 facility (Site). This letter provides our opinion. We are providing this opinion under the authority of the Model Toxics Control Act (MTCA), Chapter 70.105D RCW.

Issue Presented and Opinion

Is further remedial action necessary to clean up contamination at the Site?

YES. Ecology has determined that further remedial action is necessary to clean up contamination at the Site.

This opinion is based on an analysis of whether the remedial action meets the substantive requirements of MTCA, Chapter 70.105D RCW, and its implementing regulations, Chapter 173-340 WAC (collectively "substantive requirements of MTCA"). The analysis is provided below.

Description of the Site

This opinion applies only to the Site described below. The Site is defined by the nature and extent of contamination associated with the following releases:

- Gasoline-range total petroleum hydrocarbon (TPHg) in Soil and Ground Water;
- Diesel-range total petroleum hydrocarbon (TPHd) in Soil and Ground Water;
- Benzene, Toluene, Ethylbenzene, and Xylene (BTEX) in Soil and Ground Water

Enclosure A includes a detailed description and diagram of the Site, as currently known to Ecology.

Please note a parcel of real property can be affected by multiple sites. At this time, we have no information that the parcel(s) associated with this Site are affected by other sites.

Basis for the Opinion

This opinion is based on the information contained in the following documents:

1. Secor. October 30, 1992. Site Assessment Report, Texaco Facility 63-232-1498, 22026 Marine View Drive, Des Moines, Washington.

2. Groundwater Technology. June 2, 1995. Compliance Sampling results – Stage II Vapor Recovery Installation, Texaco Facility 63-232-1498, 22026 Marine View Drive, Des Moines, Washington.

3. Conestoga-Rovers & Assoc. July 2008. Phase II Environmental Site Assessment, Current Shell Retail Facility, SAP #121771, Ecology Identification No. 88387929, 22026 Marine View Drive South, Des Moines, WA.

4. Ground Water Monitoring Reports – 21 Ground Water Monitoring Reports 1995 – 2009.

The reports listed above will be kept in the Central Files of the Northwest Regional Office of Ecology (NWRO) for review by appointment only. Appointments can be made by calling the NWRO resource contact at 425-649-7190.

This opinion is void if any of the information contained in those documents is materially false or misleading.

Analysis of the Cleanup

Ecology has concluded that **further remedial action** is necessary to clean up contamination at the Site. That conclusion is based on the following analysis:

1. Characterization of the Site.

Ecology has determined your characterization of the Site is not sufficient to establish cleanup standards and select a cleanup action. The Site is described above and in **Enclosure A.**

Investigations conducted at the Site indicate that monitoring wells AGW-1 through AGW-5 are appropriately placed to monitor ground water contamination associated with releases near the dispenser islands and tank nest area. The TPH ground water plume does not appear to be adequately characterized at the Site. Ground water samples collected in February, March, and April 2009 indicate that elevated levels of benzene were observed at monitoring wells AGW-2, AGW-3, and AGW-5 with observed levels of TPHg and benzene above MTCA Method A cleanup levels at AGW-3. The cause of these elevated levels needs to be identified to determine if it was due to a recent release, contaminated soil that remains in the vicinity of the dispenser islands, or contaminated soil that has not been identified.

The vertical and lateral extent of soil contamination near the dispenser islands needs to better characterized. Soil samples collected in 1995, did not identify the maximum depth of soil contamination in this area. Confirmation soil samples need to be collected in areas where previous soil samples showed TPHg, TPHd, and BTEX in soil exceeded MTCA Method A cleanup levels to determine if natural attenuation remediated the chemicals of concern in soils and contamination has not migrated in the soil column.

2. Establishment of cleanup standards.

Ecology has determined the cleanup levels and points of compliance you established for the Site do not meet the substantive requirements of MTCA.

a. Cleanup levels.

Soil

A terrestrial ecologic evaluation (TEE) has been completed and an exclusion identified. The exclusion identified (physical barrier) is not accepted because it would require an environmental covenant which is not being requested at this time. The TEE needs to be re-evaluated for the site to determine if cleanup levels protective of terrestrial species is required.

The Site does not meet the MTCA definition of an industrial property; therefore soil cleanup levels suitable for unrestricted land use are appropriate. For unrestricted land use, direct contact, either Method A or Method B cleanup levels can be used.

Ground water at this Site has been impacted by the identified releases, therefore soil cleanup levels based on leaching (protection of ground water) are appropriate. To establish soil concentrations protective of ground water, either MTCA Method

A cleanup levels (Table 740-1) or one or more of the methods described in WAC 173-340-747 may be used.

The more stringent of the two pathway cleanup levels (direct contact and leaching to ground water) is to be selected for this site.

Ground Water

Ground water at the Site has been impacted by releases; therefore, either MTCA Method A or Method B cleanup levels could be used.

b. Points of compliance.

Soil

The point of compliance based on the protection of ground water is Site wide throughout the soil profile and may extend below the water table. This is the appropriate point of compliance for the Site.

Ground Water

The standard point of compliance for ground water is throughout the site from the uppermost level of the saturated zone extending vertically to the lowest depth which could potentially be affected.

3. Selection of cleanup action.

Ecology has determined the cleanup action you selected for the Site does not meet the substantive requirements of MTCA.

A cleanup action for soil has not been selected for the Site and is necessary to address contaminated soil that remains in the vicinity of the dispenser islands.

Ground water monitoring data indicates that levels of contaminants in ground water at the Site are close to but above MTCA Method A cleanup levels. The Compliance Monitoring Plan submitted to Ecology for review in December 2009 recommended monitoring of monitoring wells AGW-2 and AGW-3 on a quarterly basis until Site specific cleanup levels have been achieved for at least one year. Because contaminated soil above MTCA Method A cleanup levels may remain in the vicinity of the dispenser islands, (confirmation samples have not been collected at these areas) ground water monitoring of all monitoring wells on the Site be monitored on a quarterly basis until Site specific cleanup levels have been achieved for three years.

At the completion of the confirmation monitoring plan (three years of quarterly ground water data is below MTCA Method A cleanup levels), Site conditions will be evaluated to determine compliance with MTCA.

Limitations of the Opinion

1. Opinion does not settle liability with the state.

Liable persons are strictly liable, jointly and severally, for all remedial action costs and for all natural resource damages resulting from the release or releases of hazardous substances at the Site. This opinion **does not**:

- Resolve or alter a person's liability to the state.
- Protect liable persons from contribution claims by third parties.

To settle liability with the state and obtain protection from contribution claims, a person must enter into a consent decree with Ecology under RCW 70.105D.040(4).

2. Opinion does not constitute a determination of substantial equivalence.

To recover remedial action costs from other liable persons under MTCA, one must demonstrate that the action is the substantial equivalent of an Ecology-conducted or Ecology-supervised action. This opinion does not determine whether the action you performed is substantially equivalent. Courts make that determination. *See* RCW 70.105D.080 and WAC 173-340-545.

3. State is immune from liability.

The state, Ecology, and its officers and employees are immune from all liability, and no cause of action of any nature may arise from any act or omission in providing this opinion. *See* RCW 70.105D.030(1)(i).

Contact Information

Thank you for choosing to clean up the Site under the Voluntary Cleanup Program (VCP). After you have addressed our concerns, you may request another review of your cleanup. Please do not hesitate to request additional services as your cleanup progresses. We look forward to working with you.

For more information about the VCP and the cleanup process, please visit our web site: www.ecy.wa.gov/programs/tcp/vcp/vcpmain.htm. If you have any questions about this opinion, please contact me by phone at 425-649-7242 or e-mail at ligo461@ecy.wa.gov.

Sincerely,

Libby S. Goldstein
NWRO Toxics Cleanup Program

lg/kp

Enclosures (1): A – Description and Diagrams of the Site

cc: Jeff Goold, Shell Oil Products US
Brian peters, CRA
Dolores Mitchell (without enclosures)

Enclosure A

Description and Diagrams of the Site

Site Description

Site Name: Shell Station 121771
Site Address: 22026 Marine View Drive South, Des Moines
Facility/Site No.: 88387929
VCP Project No.: NW2081
Parcel No.: 2009003915, King County

The Site consists of soil and ground water contamination associated with releases of petroleum hydrocarbon products at 22026 Marine View Drive (the Property). A Shell-branded service station operates on the Property. The Property is located in Des Moines at the northeast corner of Marine View Drive South and South 222nd Street. Key Bank is located at the northwest corner of the intersection, Des Moines Auto Service at the Southwest corner and a retail building at the southeast corner. An office building is located directly north of the Property and a residence is east of the property. Des Moines Elementary School is located approximately 1,300 feet east of the Property. The nearest surface waters include Des Moines Creek (1/4 mile northwest of the Property), Barnes Creek (1/2 mile southeast of the Property), and Puget Sound (1/4 mile west of the Property).

The current service station building was constructed in 1966 and is assumed to be the first major development of the Property. Two 10,000 gallon underground storage tanks (USTs) were installed in 1966 and removed in 1986 when they were replaced with four USTs ranging in size from 8,000 to 12,000 gallons. In addition to these USTs a 1,000 gallon heating oil UST and a 550 gallon waste oil UST are located on the Property. There are no records available that document the condition of the USTs that were removed in 1986.

Surface cover at the property is primarily asphalt and concrete pavement. Catch basins connected to the city storm water system are located along the western and southwestern Property boundaries. Surface water on the Property appears to flow to the southwest.

The Site is located at approximately 90 feet above mean sea level. The topography is relatively flat, sloping to the southwest towards Puget Sound. The Site is located in the Puget Lowland Physiographic province of Washington and is underlain by alluvial deposits consisting of primarily well to poorly graded sands and gravelly sand with some areas of silt and silty sand from the ground surface to approximately 21 feet below ground surface (bgs), the maximum depth excavated.

The water table has been observed from 0.4 to 6.6 feet bgs with an average depth to ground water of 3.5 feet bgs. Ground water flows to the south-southwest direction with a gradient of 0.03 to 0.04 and follows the topography.

The first environmental investigation at the Property was conducted in October 1992. During this investigation, 5 monitoring wells were installed with soil samples collected and analyzed. Soil and ground water analytical results were below MTCA cleanup levels that were in place at

that time. In July 1992, Texaco reported a leak of unleaded gasoline under dispenser numbers 8 and 9.

Gasoline-range hydrocarbons (TPHg), diesel-range hydrocarbons (TPHd) and benzene, toluene, ethylbenzene, and xylene (BTEX) contamination in soils were encountered near the dispenser island when stage II vapor recovery system was installed. The lateral and vertical extent of soil contamination in the vicinity of the dispenser islands was not defined during this investigation.

Ground water sampled from multiple wells in 1995 showed TPHg, benzene and toluene above MTCA cleanup levels. Similar elevated readings at more than one monitoring well were observed in 1997 and 2009. These observations may indicate that a source of TPHg may remain at the Site.

In 2007, the hoist was removed and soil samples collected from the excavation area did not identify petroleum hydrocarbons above MTCA Method A cleanup levels in soil. Additional soil samples collected in 2008 around the tank nest area and north of the dispenser islands did not find levels of petroleum hydrocarbons above MTCA Method A cleanup levels.

Ground water monitoring data indicates that levels of contaminants in ground water at the Site are close to but above MTCA Method A cleanup levels. The Compliance Monitoring Plan submitted to Ecology for review in December 2009 recommended monitoring of monitoring wells AGW-2 and AGW-3 on a quarterly basis until Site specific cleanup levels have been achieved for at least one year. Because contaminated soil above MTCA Method A cleanup levels may remain in the vicinity of the dispenser islands, (vertical extent of contamination was not defined and confirmation samples have not been collected at these areas) ground water monitoring of all monitoring wells on the Site should be monitored on a quarterly basis until Site specific cleanup levels have been achieved for three years. Site conditions will then be evaluated to determine compliance with MTCA.

Approximate Boundary of Site

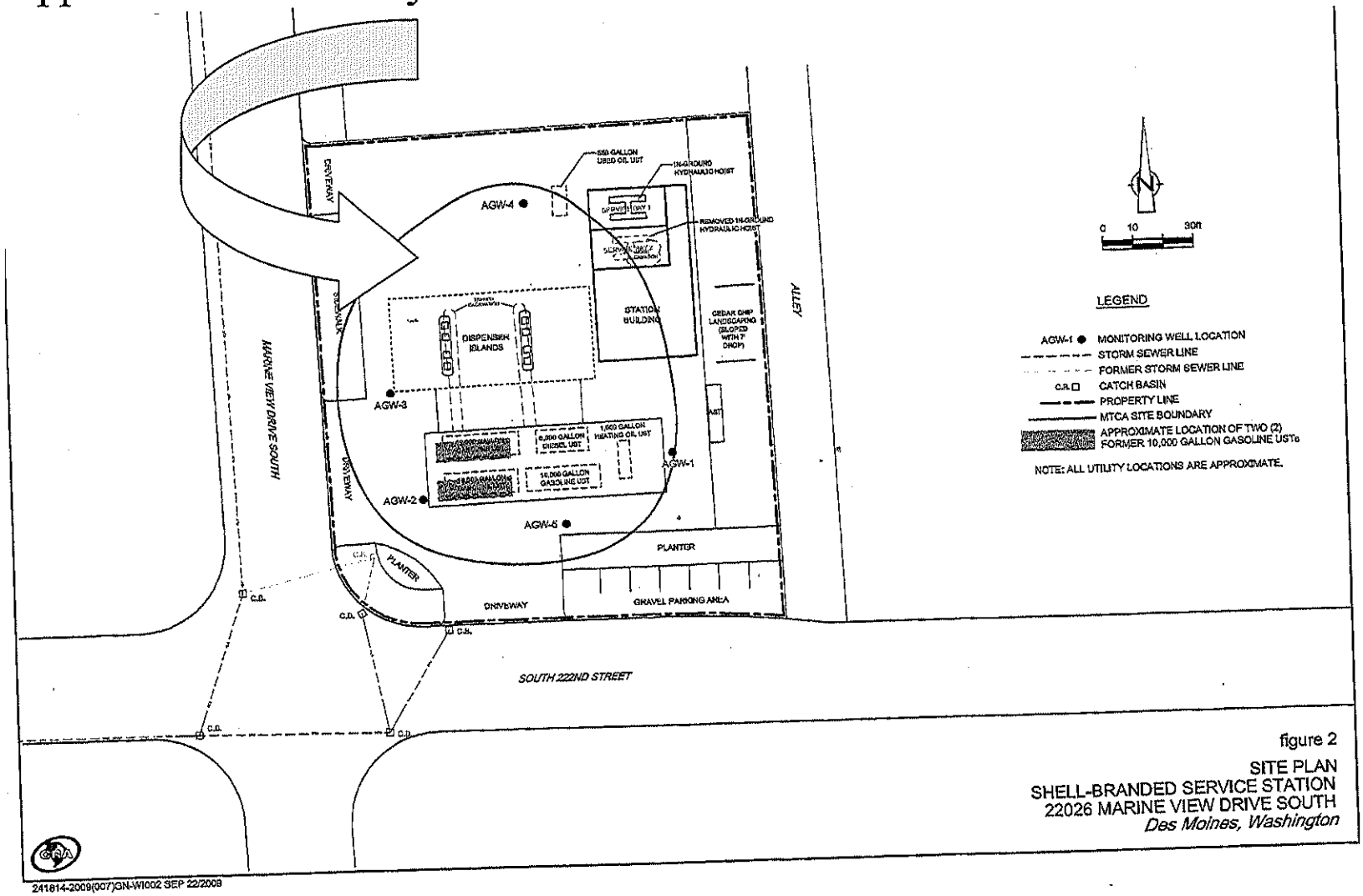

figure 2

SITE PLAN
SHELL-BRANDED SERVICE STATION
22026 MARINE VIEW DRIVE SOUTH
Des Moines, Washington

241814-2009(007)GN-WI002 SEP 22/2009