STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
PO Box 47775 • Olympia, Washington 98504-7775 • (360) 407-6300
711 for Washington Relay Service • Persons with a speech disability can call 877-833-6341

April 10, 2017

Mr. Michael Noll
Terracon Consultants, Inc.
21905 64th Avenue West, Suite 100
Mountlake Terrace, WA 98043

Re: No Further Action at the following Site:

- **Site Name:** Jim's BP
- **Site Address:** 13 E Main St, Battle Ground, Clark County, WA 98604
- **Cleanup Site No.:** 4980
- **Facility/Site No.:** 1051
- **VCP Project No.:** SW1423

Dear Mr. Noll:

The Washington State Department of Ecology (Ecology) received your request for an opinion on your independent cleanup of the Jim's BP 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?

NO. Ecology has determined that no 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 known or suspected releases:

- Total Petroleum Hydrocarbons in the gasoline (TPH-G), diesel (TPH-D), and heavy oil (TPH-O) ranges into the soil and groundwater;
- Benzene, toluene, ethylbenzene, and xylenes (BTEX), dibromoethane, 1-2 (EDB), dichloroethane, 1-2 (EDC), and methyl tertiary butyl ether (MTBE) into the soil and groundwater; and
- Lead into the soil and groundwater.

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. Terracon Consultants, Inc., *Groundwater Monitoring Report: January 2017*, dated February 2, 2017
2. Terracon Consultants, Inc., *Groundwater Monitoring Report: October 2016*, dated November 23, 2016
3. Terracon Consultants, Inc., *Groundwater Monitoring Report: July 2016*, dated August 9, 2016
4. Washington State Department of Ecology, *Further Action Opinion Letter*, dated July 15, 2016
5. Terracon Consultants, Inc., *Groundwater Monitoring Report: April 2016*, dated April 22, 2016
6. Terracon Consultants, Inc., *Groundwater Monitoring Report: February 2016*, dated March 9, 2016
7. Terracon Consultants, Inc., *Groundwater Monitoring Report: December 2015*, dated January 4, 2016
8. Terracon Consultants, Inc., *Remedial Treatment and Groundwater Monitoring Report: September 2015*, dated October 21, 2015
9. Terracon Consultants, Inc., *Work Plan for Soil and Groundwater Remedial Treatment*, dated July 28, 2015
10. Miller Nash Graham & Dunn, *Letter Re: Former Jim's BP Site*, dated January 29, 2015

11. Terracon Consultants, Inc., *Supplemental Limited Site Investigation Report*, dated January 14, 2015
12. Terracon Consultants, Inc., *UST Decommissioning Report*, dated July 9, 2014
13. Terracon Consultants, Inc., *Limited Site Investigation Report*, dated October 4, 2011
14. Washington State Department of Ecology, *Feasibility Study and Remedial Activities Conducted at Jim's BP*, dated June 30, 2000
15. State of Washington-Department of Ecology v. Jim Torres, *Consent Decree No. DE 91TC-S266*, dated November 1, 1991

Those documents are kept in the Central Files of the SWRO Regional Office of Ecology (SWRO) for review by appointment only. You can make an appointment by calling the SWRO resource contact at (360) 407-6365.

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 **no 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 sufficient to establish cleanup standards and select a cleanup action. The Site is described in **Enclosure A.**

Ecology's comments regarding the site characterization are provided below:

The horizontal and vertical extent of petroleum-related contamination at the Site has been adequately characterized through multiple recent subsurface investigations in 2011, 2014, and 2015. Contamination was first discovered in 1991 during the installation of an 8,000 gallon UST. Ecology performed remedial action through the 1990s and eventually issued a No Further Action determination in 2000. Further investigation was conducted in 2011 due to a property transfer through foreclosure. This investigation confirmed TPH-G contaminated soil (200 mg/kg) and groundwater (2,900 ug/L) was detected at concentrations greater than MTCA Method A unrestricted cleanup levels in the subsurface directly north of the UST tank farm at soil boring B-3 (Figure 1). The MTCA Method A cleanup levels (CULs) for unrestricted land use for TPH-G in soil and groundwater are 30 mg/kg and 800 ug/L, respectively.

In 2014, five soil borings were advanced near soil boring B-3 to further investigate the impacts. One of the borings was completed as groundwater monitoring well MW-7. Benzene (0.15 mg/kg) and TPH-G (69 mg/kg) were detected above MTCA Method A unrestricted soil cleanup levels at approximately 7.5 feet below ground surface (below the groundwater table of 5 feet below ground surface). Groundwater samples were collected from both monitoring wells MW-5 and MW-7 and concentrations of TPH-G and TPH-D were greater than MTCA Method A groundwater CULs.

Terracon completed injections of in-situ chemical oxidation (ISCO) compounds in August 2015. Following the injections, quarterly groundwater monitoring was conducted. Concentrations of TPH-G and TPH-D in groundwater primarily remained above MTCA Method A groundwater CULs until the 2nd quarter 2016 groundwater sampling event. During and following this sampling event, concentrations of TPH-G and TPH-D were typically at detectable concentrations below MTCA Method A groundwater CULs for four consecutive quarters.

Four quarters of groundwater sampling indicate that concentrations of petroleum products in groundwater are below MTCA Method A groundwater CULs. Soil concentrations greater than MTCA Method A soil CULs for unrestricted land use were previously identified at monitoring well MW-7 and soil boring B-3. Both of these locations are in an area of ample soil boring density indicating the soil impacts were adequately characterized.

2. Establishment of cleanup standards.

Ecology has determined the cleanup levels and points of compliance you established for the Site meet the substantive requirements of MTCA.

MTCA Method A CULs were proposed for unrestricted land use and standard points of compliance. Applicable CULs are provided in WAC 173-340-900 Tables 720-1 and 740-1.

Ecology has determined the following standard points of compliance apply to the Site:

- Soil-Direct Contact: For soil cleanup levels based on human exposure via direct contact: "...throughout the Site from ground surface to 15 feet below the ground surface" (WAC 173-340-740(6)).

- Soil-Leaching: For soil cleanup levels based on the protection of groundwater: "...soils throughout the Site" (WAC 173-340-760(6)).

- Groundwater: For groundwater cleanup levels: "...throughout the Site from the uppermost level of the saturated zone extending vertically to the lowest most depth which could potentially be affected by the site" (WAC 173-340-720(8)).

3. Selection of cleanup action.

Ecology has determined the cleanup action you selected for the Site meets the substantive requirements of MTCA.

The cleanup selected consisted of decommissioning the three existing USTs and conducting in-situ chemical oxidation (ISCO) utilizing ORC-A and RegenOx® Part A as the injection compounds. UST decommissioning was conducted as the property was no longer being utilized as a gas station. While the USTs did not appear to be an ongoing release source, this decommissioning process provides added confidence in the absence of a contamination source.

ISCO was completed to chemically oxidize the contaminants and increase oxygen in the subsurface to promote aerobic biodegradation of organic compounds (i.e. TPH) into non-hazardous substances like carbon dioxide and water. Since the injection took place in August 2015, concentrations of the contaminants of concern in groundwater have generally decreased. For four consecutive quarters, concentrations have been below applicable cleanup levels.

The cleanup action meets the applicable minimum requirements in WAC 173-340-360(2) as cleanup standards have been met at the Site.

4. Cleanup.

Ecology has determined the cleanup you performed meets the cleanup standards established for the Site.

The cleanup selected consisted of decommissioning the three existing USTs and conducting ISCO utilizing ORC-A and RegenOx® Part A as the injection compounds. The ISCO consisted of a slurry injection of approximately 480 lbs of ORC-A and 25 lbs of RegenOx® Part A.

To determine compliance with Site cleanup standards, confirmational soil and groundwater sampling was conducted after UST decommissioning.

This sampling indicated groundwater and soil at the Site has met cleanup standards, except for two locations where TPH-G and benzene in soil were slightly greater than applicable cleanup levels. ISCO injections were later conducted in close proximity to the two sampling locations to address the remaining soil and groundwater impacts. Confirmational quarterly groundwater samples indicate cleanup standards have been met for the protection of groundwater in this vicinity. Both MTCA Method A soil CULs for unrestricted land use for benzene and TPH-G are based on protection of ground water for drinking water use. In addition, the exceeding soil sample locations are at a depth that is near or deeper than the groundwater table. Therefore, the quarterly conformational groundwater monitoring samples will be sufficient to demonstrate compliance with soil cleanup standards for the two soil sample locations mentioned.

The cleanup performed has achieved Site cleanup standards as contaminated soil and groundwater are below applicable CULs within the points of compliance. The cleanup standards are anticipated to be sustained because there is no on-going source of contamination present.

Listing of the Site

Based on this opinion, Ecology will initiate the process of removing the Site from our lists of hazardous waste sites, including:

- Hazardous Sites List.
- Confirmed and Suspected Contaminated Sites List.
- Leaking Underground Storage Tank List.

That process includes public notice and opportunity to comment. Based on the comments received, Ecology will either remove the Site from the applicable lists or withdraw this opinion.

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).

Termination of Agreement
Thank you for cleaning up the Site under the Voluntary Cleanup Program (VCP). This opinion terminates the VCP Agreement governing this project (#SW1423).

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 or the termination of the Agreement, please contact me by phone at (360) 407-7529 or e-mail at Matthew.Morris@ecy.wa.gov.

Sincerely,

Matthew Morris, P.E.
SWRO Toxics Cleanup Program

MM: kb

Enclosures (1): A – Description and Diagrams of the Site
Figure 1 – Site Diagram
Figure 2 – Geologic Cross Sections
Figure 3 – 1990s Estimated Contamination Extent

By Certified Mail: [91 7199 9991 7037 0279 7628]

cc: Todd Cansler, CLMG Corporation
Douglas Steding, Miller Nash Graham & Dunn
Nick Acklam, Ecology
Aaren Fiedler, Ecology
Matthew Alexander, Ecology
Stacy Galleher, Ecology

Enclosure A

Description and Diagrams of the Site

Site Description

Site: The Site is an approximate 0.23 acre parcel of land located at 13 East Main Street in Battle Ground, WA. The property corresponds to tax parcel 91101110.

Area and Property Description: The major Site structures include a convenience store building, three closed USTs, and a sign for the current occupant. The Site is bounded by E Main Street to the north, a commercial building to the East, a commercial building and residential property to the South, and S Parkway Avenue to the West. The elevation of the property is approximately 290 feet above mean sea level.

Property History and Current Use: The property was developed as a gasoline station in the early 1980s.

During UST upgrade activities in 1991, a release of petroleum was discovered. Much of the impacted soil was excavated and hauled to a separate location for treatment. In late 1991, Ecology entered into Consent Decree No. DE 91TC-S266, resulting in Ecology becoming the lead party for the cleanup process. Ecology proceeded with cleanup actions at the Site for much of the 1990s. The investigation indicated contamination had migrated off-property and was confined to the northeast corner of the gas station and the northwest corner of the adjacent property (15 East Main Street). After monitoring the contamination for several years, Ecology performed additional remedial action. The action included pumping out 300 gallons of groundwater from existing monitoring wells and injecting an oxygen-releasing compound into the soil to enhance biodegradation of the remaining soil contamination. Groundwater samples indicated contaminant concentrations had decreased, though, some locations remained above MTCA Method A groundwater CULs. Despite this, Ecology suggested no further action (NFA) was needed at the Site in April 2000 and the Site was delisted from the Hazardous Sites List shortly thereafter.

The station most recently operated as a Union 76-branded gasoline station/convenience store. In June 2014, the former gasoline station infrastructure (fueling island and dispenser canopy) was removed, and three USTs were closed in place. The closed USTs include: a single wall steel 6,000 gallon gasoline tank, a single wall steel 4,000 gallon diesel tank, and a double wall fiberglass reinforced plastic 8,000 gallon gasoline. The convenience store that remains on the property is currently occupied by a retail liquor store tenant.

Sources of Contamination: A UST was removed from the property in 1991, during UST decommission activities a release was discovered. The suspected cause for this release was malfunctioning pipe fittings. A no further action letter was issued for the Site in April 2000 related to this contamination. The letter noted that impacts remain, but are not a concern for human-health or the environment.

The property owner who entered into a consent decree with Ecology in the 1990s filed for bankruptcy in the early 2000s. In 2009, LNV Corporation, a subsidiary of Beal Bank USA, acquired a loan secured by the property from the Federal Deposit Insurance Corporation (FDIC), as received for Silver State Bank. LNV assigned the loan to CXA, which foreclosed on the loan on September 23, 2011. As part of the foreclosure process, CXA had Terracon perform a remedial investigation for the Property. Terracon concluded the following from the investigation: TPH related constituents were present in concentrations similar to those observed by Ecology in 1999, BTEX compounds were not present, and the TPH chromatograms indicated a weathered nature of the petroleum impacts. Terracon hypothesized that the contamination was due to the UST release identified in 1991, rather than a new release associated with the USTs that were remaining on the Site after Ecology completed the cleanup.

Surface/Storm Water System: The Site is approximately a quarter of a mile west of Weaver Creek. Private utilities servicing the convenience store building include: a water line to the north, a sewer line to the southeast and a gas line to the west (Figure 1). A figure depicting the storm water conveyance system has not been submitted to Ecology at this time.

Ecological Settings: The site is located in an active business district in the City of Battle Ground. A terrestrial ecological evaluation was submitted to Ecology on June 10, 2016 which indicates the Site is excluded from further evaluation based on the "undeveloped land" exclusion (WAC 173-340-7491(1)(c)).

Geology: The Site is underlain by pebbly, silty, sandy clay. The compaction of the material appears to increase with depth. Figure 2 displays conceptual geologic cross sections depicted in Ecology's *Feasibility Studies and Remedial Activities Conducted at Jim's BP* report. The cross sections were constructed from well logs associated with the Site monitoring wells.

Groundwater: The depth to groundwater at Site monitoring wells varied from 3.34 to 20.61 feet below the top-of-casing during the 1st quarter 2017 groundwater monitoring event. This shallow groundwater appears to be perched on and within a low conductivity clay deposit.

Water Supply: The City of Battle Ground draws water for a public drinking system from five municipal wells screened at depths of approximately 110 feet below ground surface or greater. These wells are located within one mile from the Site. Domestic wells in the area have typical completion depths of at least 40 feet below ground surface.

Contamination Extent: In 1991, soil and groundwater contamination was discovered during tank decommissioning and tank upgrade activities. Results of remedial investigation activities indicated petroleum contamination had migrated off the property and had impacted the adjacent property to the East. Figure 3 displays the approximate area of contamination after Ecology's initial investigations. Ecology implemented oxygen-releasing compound (ORC) injections in 1999 to remediate the soil and groundwater at this location. Groundwater samples collected approximately 8 months later indicated concentrations of benzene, ethylbenzene, xylenes, and TPH-G decreased significantly, but were still above MTCA Method A groundwater CULs.

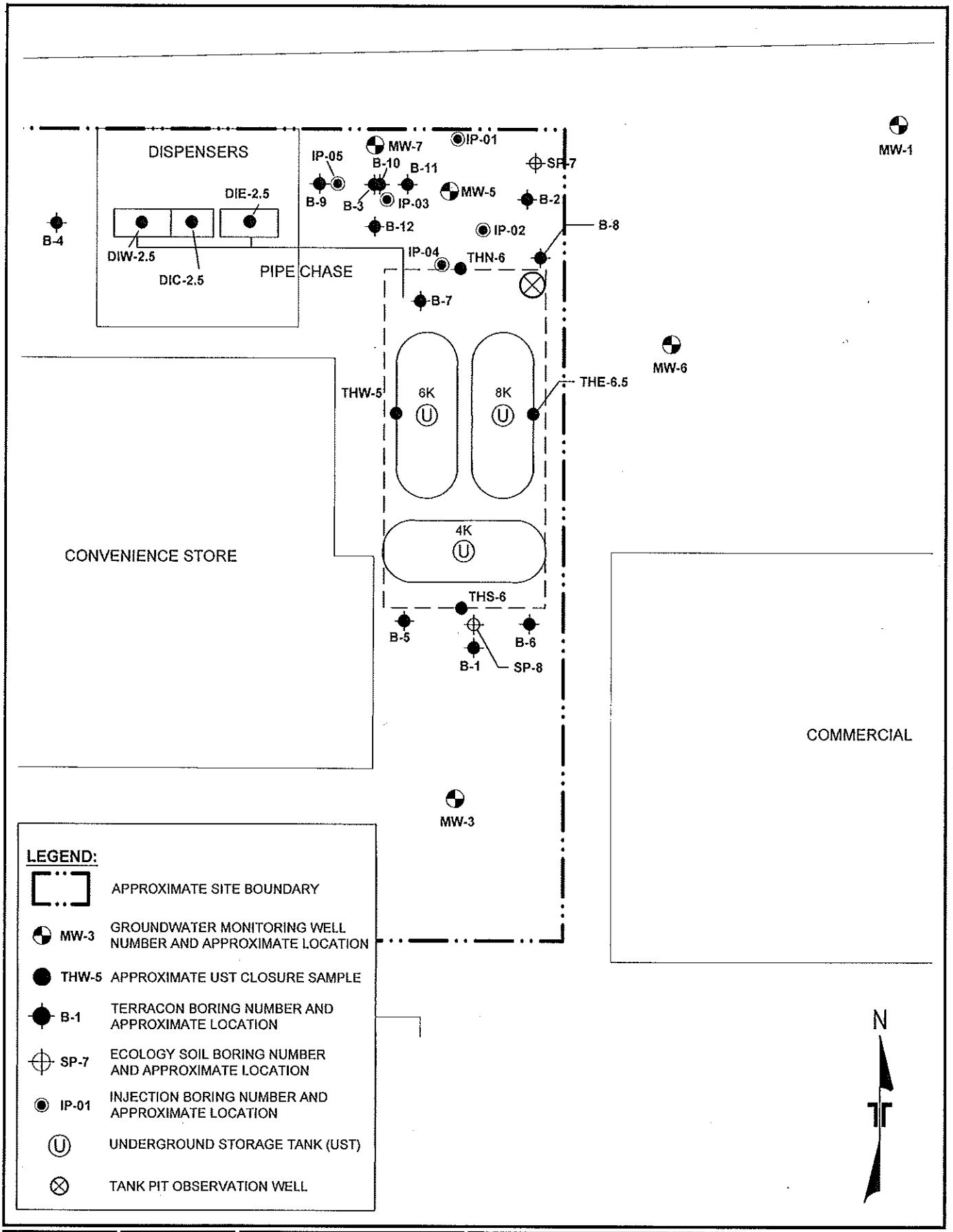
In 2000, Ecology determined the remaining groundwater impacts did not pose a threat to human health or the environment and recommended that no further remedial actions were necessary.

In 2010, additional investigation was conducted due to a property transaction via foreclosure. The investigation indicated concentrations of TPH-G in the soil and groundwater were still present above MTCA Method A CULs at one location (soil boring B-3).

In April 2014, the USTs were closed in place as the property was no longer being utilized as a gasoline station. Several samples were collected along the perimeter of the UST complex that indicated no contamination was present at concentrations greater than MTCA Method A soil CULs for unrestricted land use. However, just north of the USTs, concentrations of TPH-G and benzene in soil were found greater than MTCA Method A soil CULs for unrestricted land use (soil boring MW-7). An additional ORC injection was conducted on August 13, 2015 in order to treat soil and groundwater impacts in the area of soil boring B-3 and monitoring well MW-7.

Recent groundwater monitoring indicates that cleanup standards have been met for four consecutive quarters (April 2016 through January 2017). Due to the relatively low concentrations of TPH-G and benzene in the soil identified at soil boring B-3 and MW-7 and their proximity to the ISCO injections, it is likely the contaminant concentrations have decreased below MTCA Method A soil CULs for unrestricted land use. In addition, MTCA Method A soil CULs for unrestricted land use for benzene and TPH-G are based on protection of groundwater for drinking water use. Groundwater samples in the area indicate groundwater is sufficiently protected for drinking water use.

Site Diagrams



Project Mngr:	MDN
Drawn By:	AWS
Checked By:	MDN
Approved By:	MYW
Project No.	81157108
Scale:	NOT TO SCALE
File No.	FIGURE 2
Date:	OCTOBER 2015

Terracon
Consulting Engineers and Scientists
21905 64th Avenue W., Ste 100 Mountlake Terrace, WA 98043
PH. (425) 771-3304 FAX. (425) 771-3549

SITE DIAGRAM

Union 76 Mini Mart
13 East Main Street
Battle Ground, Clark County, Washington

FIG. NO.
Figure 1

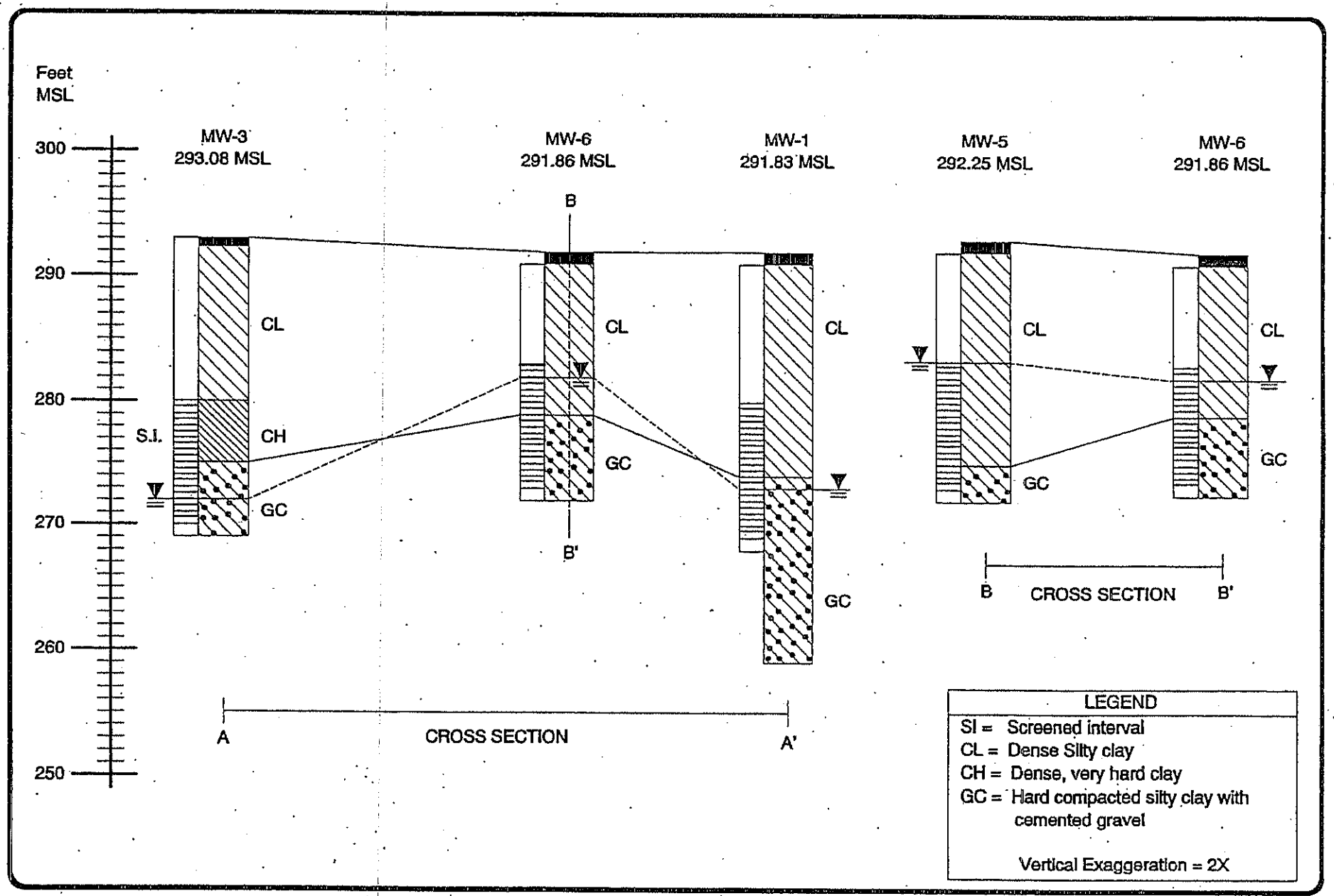


Figure 2 - Geologic Cross Sections

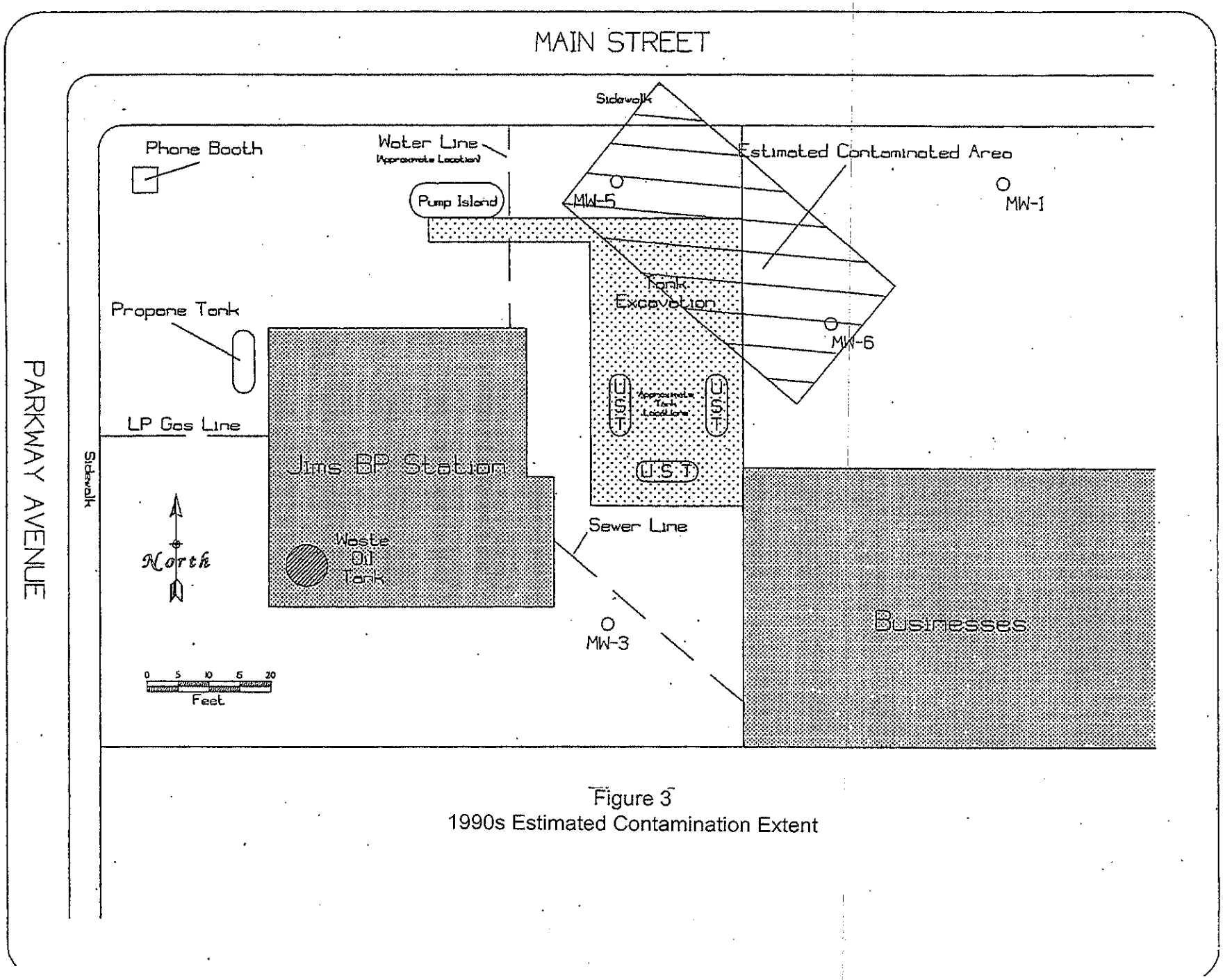


Figure 3
1990s Estimated Contamination Extent