STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
Northwest Regional Office • 3190 160th Ave SE • Bellevue, WA 98008-5452 • 425-649-7000
711 for Washington Relay Service • Persons with a speech disability can call 877-833-6341

June 3, 2013

Mr. Paul Grabau
Farallon Consulting, LLC
1201 Cornwall Avenue, Suite 105
Bellingham, WA 98225

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

- **Name:** Whidbey Marine & Auto Supply
- **Address:** 1689 Main St., Freeland, WA 98249
- **Facility/Site No.:** 17222251
- **VCP No.:** NW 1529
- **Cleanup Site ID No.:** 5610

Dear Mr. Grabau:

Thank you for submitting documents regarding your proposed remedial action for the Whidbey Marine & Auto Supply 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 release(s) at the Site:

- TPH-G (Gasoline-Range Total Petroleum Hydrocarbons) and associated compounds of benzene, toluene, ethylbenzene and xylenes (BTEX) into the Soil and Ground Water.
- TPH-D (Diesel-Range Total Petroleum Hydrocarbons) into the 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 proposed remedial action(s):

1. Farallon Consulting, L.L.C., *Technical Memorandum Re: November 2012 Progress Report, Whidbey Marine & Auto Supply Site, Freeland, Washington, Farallon P-N: 454-00,* dated December 17, 2012.

2. Farallon Consulting, L.L.C., *Technical Memorandum Re: April 13, 2012, April 2012 Progress Report, Whidbey Marine & Auto Supply Site, Freeland, Washington, Farallon P-N: 454-001,* dated April 13, 2012.

3. Farallon Consulting, L.L.C., *Technical Memorandum Re: June 2011 Progress Report, Whidbey Marine & Auto Supply Site, Freeland, Washington, Farallon P-N: 454-001,* dated September 13, 2011.

4. Farallon Consulting, L.L.C., *Letter Report Re: Underground Storage Tank Closure Report, Scotty's Towing, Freeland, Washington, Farallon PN: 1037-001,* dated May 4, 2011.

5. Farallon Consulting, L.L.C., *Technical Memorandum Re: October 2010 Progress Report, Whidbey Marine & Auto Supply Site, Freeland, Washington, Farallon PN: 454-001,* dated December 15, 2010.

6. Farallon Consulting, L.L.C., *Technical Memorandum Re: Groundwater User Survey Update, Whidbey Marine & Auto Supply Site, Freeland, Washington, Farallon P-N: 454-001,* dated July 8, 2010.

7. Farallon Consulting, L.L.C., *Site Characterization Report, Whidbey Marine & Auto Supply, 1689 Main Street, Freeland, Washington,* dated February 10, 2006.

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 425.649.7235 or sending an e-mail to nwro_public_request@ecy.wa.gov.

The Site is defined by the extent of contamination caused by the following release(s):

- TPH-G (Gasoline-Range Total Petroleum Hydrocarbons) and associated compounds of benzene, toluene, ethylbenzene and xylenes (BTEX) into the Soil and Ground Water.
- TPH-D (Diesel-Range Total Petroleum Hydrocarbons) into the Soil.

The Site is more particularly described in Enclosure A to this letter, which includes a detailed Site diagram. The description of the Site is based solely on the information contained in the

documents listed above.

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:**

- The source of contamination at this Site is identified as a 10,000-gallon former underground storage tank (UST) which was operated at a gasoline service station. A gasoline leak is reported to have occurred from the UST at a 2-inch diameter hole in the tank. No leaks were identified from the other tanks. TPH-D impacted soil was also discovered directly beneath former dispenser island pump 2 during removal of the USTs, associated piping and pumps. The vertical extent in soil and potential groundwater impact of TPH-D has not been determined. Sampling and analysis for TPH-D in groundwater has not been conducted and is necessary in both the perched aquifer and the Sea Level Aquifer.
- The installation of additional Sea Level Aquifer monitoring wells is recommended to delineate the extent of LNAPL and dissolved petroleum contamination and to further characterize conditions in the Sea Level Aquifer.
- An LNAPL thickness of 0.98 feet was first measured in monitoring well MW-9 (Sea Level Aquifer) in September 2012. Approximately one liter of LNAPL was removed from MW-9 and a hydrophobic oil sorbent sock was left in the well. Groundwater elevation and LNAPL measurements are being conducted monthly, absorbent socks replaced and LNAPL bailed if present. Additional LNAPL recovery and further characterization of extent of LNAPL in groundwater throughout the Sea Level Aquifer needs to be determined. Due to the Sea Level Aquifer's use as Whidbey Island's primary drinking water source, priority must be given to characterize and aggressively remediate LNAPL and dissolved petroleum contamination.
- Groundwater monitoring data should include a depth to LNAPL and product thickness column, either added to the Groundwater Elevation Data table or field sheets can be included with future monitoring reports. Documentation that all wells are being monitored for LNAPL is necessary at this time.
- Isoconcentration maps for both the perched aquifer and Sea Level aquifer plumes should be submitted with the next progress report.
- Cross sections showing soil contamination with depths and groundwater contamination (including extent of LNAPL plume) should be submitted.
- A table which includes all historical soil analytical data and all historical boring logs should be submitted with the additional well installation report.
- A terrestrial ecological evaluation (TEE) should be conducted before it can be determined that the appropriate cleanup levels are being applied, unless the Site qualifies for a TEE exclusion (WAC 173-340-7491).

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 for or conducted at the Site meet those requirements.

If you have any questions regarding this opinion, please contact me at 425.649.7097 or e-mail at desc461@ecy.gov.

Sincerely,

Diane Escobedo
Site Manager
NWRO Toxics Cleanup Program

DE/SA
Enclosure: A – Description and Diagrams of the Site

Enclosure A

Description and Diagrams of the Site

Site Description

Site Definition: The Site is defined as an area of petroleum-contaminated soil and groundwater associated with 1689 Main Street in Freeland, Washington (Property). The Property is the location of the former Whidbey Marine and Auto Supply which operated as a service station until 2008. Gasoline and diesel range petroleum hydrocarbons, benzene, toluene, ethylbenzene and xylenes were released to the soil and groundwater as a result of leaks in a former gasoline underground storage tank (UST) and a diesel fuel pump.

Area/Property Description: The Property is located on Whidbey Island, and is situated within the central business area of Freeland. Other commercial and retail businesses are located along Main Street and are backed up by a mix of open space and homes.

Property History and Current Use: Whidbey Marine and Auto Supply operated as a retail fuel dispensing facility, auto and boat supply store and auto repair facility from 1967 to 2008. One 3,000 gallon diesel fuel UST and three gasoline USTs (two 10,000 and one 8,000 gallon) and associated piping and pumps were decommissioned and excavated in January 2011. The property and adjacent properties are currently occupied by commercial businesses.

Contaminant Source and History: Contaminant sources for this Site include leakage from the 10,000-gallon gasoline UST (UST 2) and diesel dispenser island pump (pump 2). A fuel inventory reconciliation problem reported in 2005 indicated a 7,000 gallon release of gasoline from UST 2. Subsequently, a two-inch diameter hole was discovered in UST 2 during system closure and excavation (January 2010) on the bottom of the tank at the southern end directly beneath the fuel level check port. TPH-D was detected above MTCA Method A cleanup level at a concentration of 31,000 milligrams/kilograms (mg/kg) in the soil sample collected from beneath pump 2 during UST system decommissioning. The four fuel pumps were reportedly removed by the owner previous to UST and piping removal. ORO, GRO and BTEX concentrations in soil samples collected from the UST excavation (sidewall and bottom), piping and below former fuel dispensers were not detected above MTCA Method A cleanup levels. All soil removed during the UST excavation was immediately backfilled into the excavated area.

Physiographic Setting: The Site is located on Whidbey Island, the largest island in the Puget Sound. Extending 40 miles long and approximately 1 to 10 miles wide Whidbey Island forms the northern boundary of Puget Sound. Camano Island lies to the east and is about a fifth of the size of Whidbey Island. Three small islands – Ben Ure, Strawberry and Smith islands – lie to the west in the Strait of Juan de Fuca. Whidbey Island is located in the Puget Trough section, Pacific Border province of the Pacific Mountain division. Soils are predominantly glacial drift deposits consisting of sand, gravel and minor amounts of clay. The topography is characterized by rolling uplands 100 to 300 feet above sea level, with some areas exceeding 500 feet. A ridge extends the length of Whidbey Island, with the steepest slopes occurring in the southern end. The Site and surrounding area are located on the southwestern edge of a drumlinoid hill and the eastern edge of a broad valley that slopes

downward from the central portion of Whidbey Island to the marine waters of Holmes Harbor. The valley is drained by an intermittent seasonal stream. The edge of the valley begins within about 100 feet of the Site. The land surface at the Site is about 115 feet elevation, and is nearly flat.

Ecological Setting: Two parcels of land nearby appear to be undeveloped. There may be significant habitat associated with Holmes Harbor located about ½ mile from the site and an intermittent stream located about ¼ mile away.

Geology: Surface conditions in the Freeland area are dominated by Everson Glaciomarine Drift, which consist of clayey to silty diamicton. Geologic conditions beneath the Site consist of 1 to 2 feet of sand and gravel fill and about 60 feet of glacial poorly sorted sand overlying a 6 to 8 foot thick silt and sandy silt layer. Additional sand deposits occur beneath the silt, extending to the total explored depth of about 125 feet.

Groundwater: Perched groundwater occurs on top of the silt layer (perched zone). The groundwater flow direction in the perched zone is to the west, with a hydraulic gradient of approximately 0.02 foot per foot (dimensionless) in the eastern portion of the Site and a considerably steeper gradient of approximately 0.10 to the west. Groundwater depths at the Site in the perched zone range from 49 to 60 feet below ground surface. Interbedded silt layers beneath the saturated zone have not impeded contamination to the extent originally proposed. The perched zone thins and/or pinches out to the west and south of the Property boundary, potentially allowing for downward vertical migration of contaminated groundwater into the underlying sand. Groundwater occurs in the deeper sand under water table conditions (the regional aquifer). Depth to groundwater ranges from 100 to 104 feet below ground surface and groundwater elevations are approximately 12 feet above mean sea level. Referred to as the Sea Level Aquifer, flow in the vicinity of the Site is typically to the south/southeast with a gradient ranging from 0.001 to 0.02. The majority of local drinking water wells are installed in this aquifer. The nearest drinking water well down-gradient from the Site is located approximately 1,900 feet south and is used by the Freeland Water District, the primary water source for the city of Freeland.

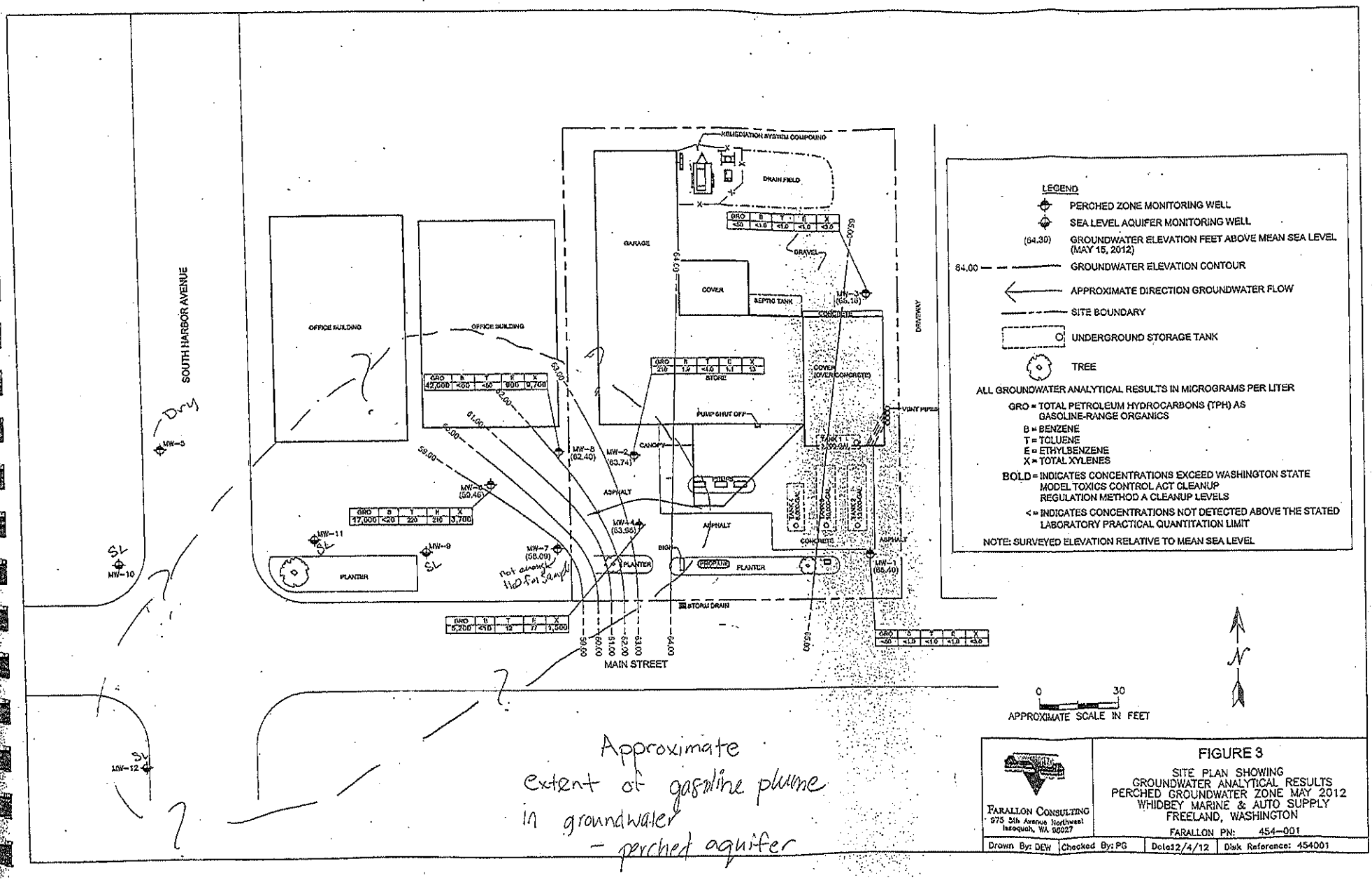
Surface Water: An intermittent stream is located about ¼ mile from the Sitet point. Holmes Harbor is approximately ½ to the north.

Water Use/Water Supply: Water service in the area is currently provided by the Freeland Water and Sewer District. Farallon and the Island County Health Department have conducted two surveys of land owners to identify whether any private groundwater wells are present near the Site and whether groundwater is currently being used as a source of water. The most recent groundwater user survey update was received by Ecology on January 19, 2010. Five parcels of land located in the apparent downgradient direction for the Sea Level

Aquifer did not respond to the survey regarding the presence of groundwater wells. Of these five parcels, two of the parcels appear to be undeveloped, two of the parcel owners are completely unresponsive and one did not respond to the survey but is aware of cleanup activities and has granted access for monitoring well installation and sampling. According to the Island County Health Department the nearest downgradient wells are 1,900 feet south of the Site and are used by the Freeland Water District.

Release and Extent of Contamination – Soil: Petroleum hydrocarbons in the form of TPH-G, TPH-D and associated BTEX are known contaminants present in the soil at the Site. A reported gasoline petroleum hydrocarbon release occurred in 2005, associated with a former service station located on the Property. TPH-D contaminated soil was discovered beneath dispenser island pump 2 at the time of UST system closure and excavation in 2011. Soil beneath the site continues to be impacted. TPH-G and BTEX contamination is known to have migrated below the perched zone to a depth of 99 feet below ground surface (bgs). TPH-G (2,800 mg/kg), benzene (0.6 mg/kg), ethylbenzene (22 mg/kg) and xylenes (150 mg/kg) were detected above MTCA Method A cleanup levels in a soil sample collected at 99 feet bgs from the soil/water interface during the installation of monitoring well MW-12.

Extent of Contamination – Groundwater: Groundwater in the perched zone is contaminated with TPH-G and associated BTEX however no ground water samples have been analyzed for TPH-D. TPH-G in the perched zone ranges from 210 to 42,000 miligrams per liter (mg/l) in the westernmost monitoring wells MW-2, MW-4, MW-6 and MW-8. TPH-G and BTEX concentrations in groundwater collected from upgradient wells MW-1 and MW-3 have been below MTCA Method A cleanup levels since 2007 and 2005 respectively. The contaminated water in the perched zone has moved westward, beyond where the confining silt layer pinches out, migrating vertically downward through the underlying sand and into the Sea Level Aquifer. TPH-G in the Sea Level Aquifer ranges from 19,000 to 280,000 mg/l in samples collected from monitoring wells MW-9, MW-11 and MW-12. Monitoring well MW-10 is the only Sea Level Aquifer in which TPH-G has not been detected since installation in 2009. TPH-G concentrations in the perched aquifer wells are showing a decreasing trend, however, Sea Level Aquifer contamination has generally increased since well installation in 2009, particularly in monitoring well MW-9. An LNAPL thickness of 0.98 feet was measured in monitoring well MW-9 in September 2012. The horizontal extent of the LNAPL is unknown at this time.



Approximate extent of gasoline plume in groundwater - perched aquifer

FARALLON CONSULTING
975 5th Avenue Northwest
Issaquah, WA 98027

FIGURE 3
SITE PLAN SHOWING
GROUNDWATER ANALYTICAL RESULTS
PERCHED GROUNDWATER ZONE MAY 2012
WHIDBEY MARINE & AUTO SUPPLY
FREELAND, WASHINGTON
FARALLON PN: 454-001

Drawn By: DEW | Checked By: PG | Date: 12/4/12 | Disk Reference: 454001

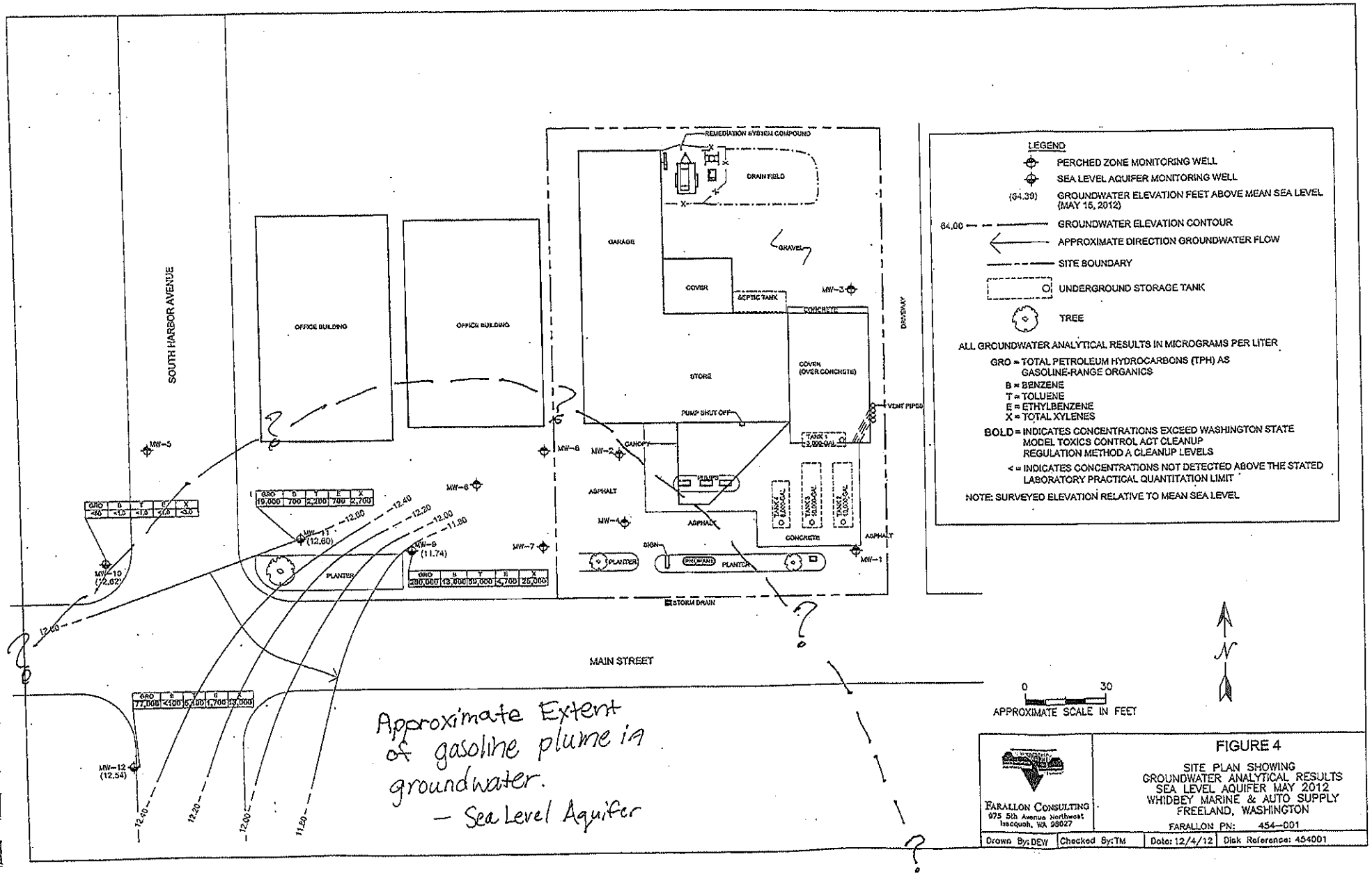


FIGURE 4

SITE PLAN SHOWING
GROUNDWATER ANALYTICAL RESULTS
SEA LEVEL AQUIFER MAY 2012
WHIDBEY MARINE & AUTO SUPPLY
FREELAND, WASHINGTON

FARALLON PN: 454-001

FARALLON CONSULTING
975 5th Avenue Northwest
Issaquah, WA 98027

Drawn By: DEW | Checked By: TM | Date: 12/4/12 | Disk Reference: 454001