

**REMEDIATION WORK PLAN**  
**for**  
**Sunny's Deli Mart**  
**&**  
**Texaco**  
**10545 SE Carr Road**  
**Renton, Washington 98055**  
**WDOE SITE ID # 6333**

**PREPARED BY**

**ROBERT M. RODMAN**  
**ENVIRONMENTAL CONSULTANT**  
*BSME, Licensed Site Supervisor, Certified Environmental Site Assessor*  
*Certified Regulatory Compliance Specialist*  
*15513 Cedar Grove Road NE, Poulsbo, Washington 98370*  
*Phone/Fax: (360) 779-6911*

**November 2007**

**Sunny's Deli Mart**

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**10545 SE Carr Road**  
**Renton, Washington 98055**  
**REMEDIATION WORK PLAN**

**PROJECT DESCRIPTION**

The objective of this project will be the cleanup of petroleum contaminated soil from the site of the Texaco gasoline service station doing business as Sunny's Deli Mart, located on the Northwest corner of SE Carr Road and 106<sup>th</sup> Place SE in Renton, Washington. The cleanup method to be employed will be Bio-remediation ( Microbes which feed on hydrocarbons will be introduced into the contaminated areas). This method is non-intrusive and will not interfere with the operation of the business.

**BACKGROUND**

In April of 1991, hydrocarbon contamination was discovered on this site and was reported to the Washington State Department of Ecology (WDOE). The WDOE assigned release identification number 1816, and site identification number 6333 to the site.

In October of 2007, a Phase II Environmental Site Assessment was performed, 4 boring's were advanced to depths from 11 to 12 feet. Two of the boring's, identified as S3 and S4, produced soil samples which exceeded WDOE cleanup levels for gasoline and the gasoline constitute Benzene. No groundwater samples were taken during this assessment.

In November of 2007, a site characterization was performed. Nine boring's were advanced to a depth of 10 to 12 feet and all encountered groundwater at 8 to 11 feet. Analytical results indicate that a release of gasoline and the gasoline constituents, Benzene, Toluene, Ethyl benzene and, Xylenes (BTEX) has occurred on the Northwest side of the property. Monitoring wells were installed in 2 of the boring's. A monitoring well was placed at the lowest point of the site and is identified as MW-1. The other monitoring well was installed in the area of the highest contamination levels and is identified as MW-2.

Two injection points (IP) were installed and will be utilized to inject enhanced microbes and surfactant's into the groundwater and soil. One IP was installed at the Northwest corner of the convenience store up gradient of the area of contamination is identified as IP-1. The second IP was installed Southeast and up gradient of the dispenser islands and area of contamination and will be identified as IP-2.

1 or 2 additional monitoring wells and or IP's will be installed during the course of this project as required. Locations of the existing boring's, monitoring wells, and IP's can be found on the **Remediation Site Plan**,

## WORK PLAN

**PHASE I:** The monitoring wells will be pumped out and the water properly disposed of by Marine Vacuum Services of Seattle. Recharge rates will be monitored and logged and whether or not the ground water on the site is perched (contained by hardpan or clay) should be able to be determined.

**PHASE II:** Utilizing the injection points, enhanced microbes and surfactant's purchased from Blue Stripe Distributing under the brand name "Superbugs" will be injected into the groundwater every two weeks for the first two months. Water samples will be taken from the monitoring well with the highest contamination level prior to each treatment and then once each month until cleanup levels are achieved. Any additional monitoring wells or injection points will be determined by the project hydro-geologist. Once analytical results from the monitoring wells are below Department of Ecology (WDOE) cleanup levels, Phase III will begin.

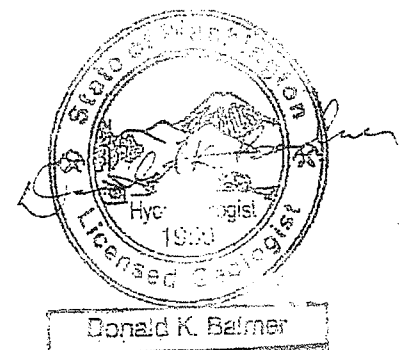
**PHASE III:** Water samples will be taken once every quarter from each monitoring well and analyzed by the project laboratory. When four consecutive quarters of analyses show no detection of hydrocarbons in the water, a no further action (NFA) status will be sought from WDOE.

Estimated time line till NFA is 18 months.

Estimated total cost of project is \$20,000 (Twenty Thousand Dollars)

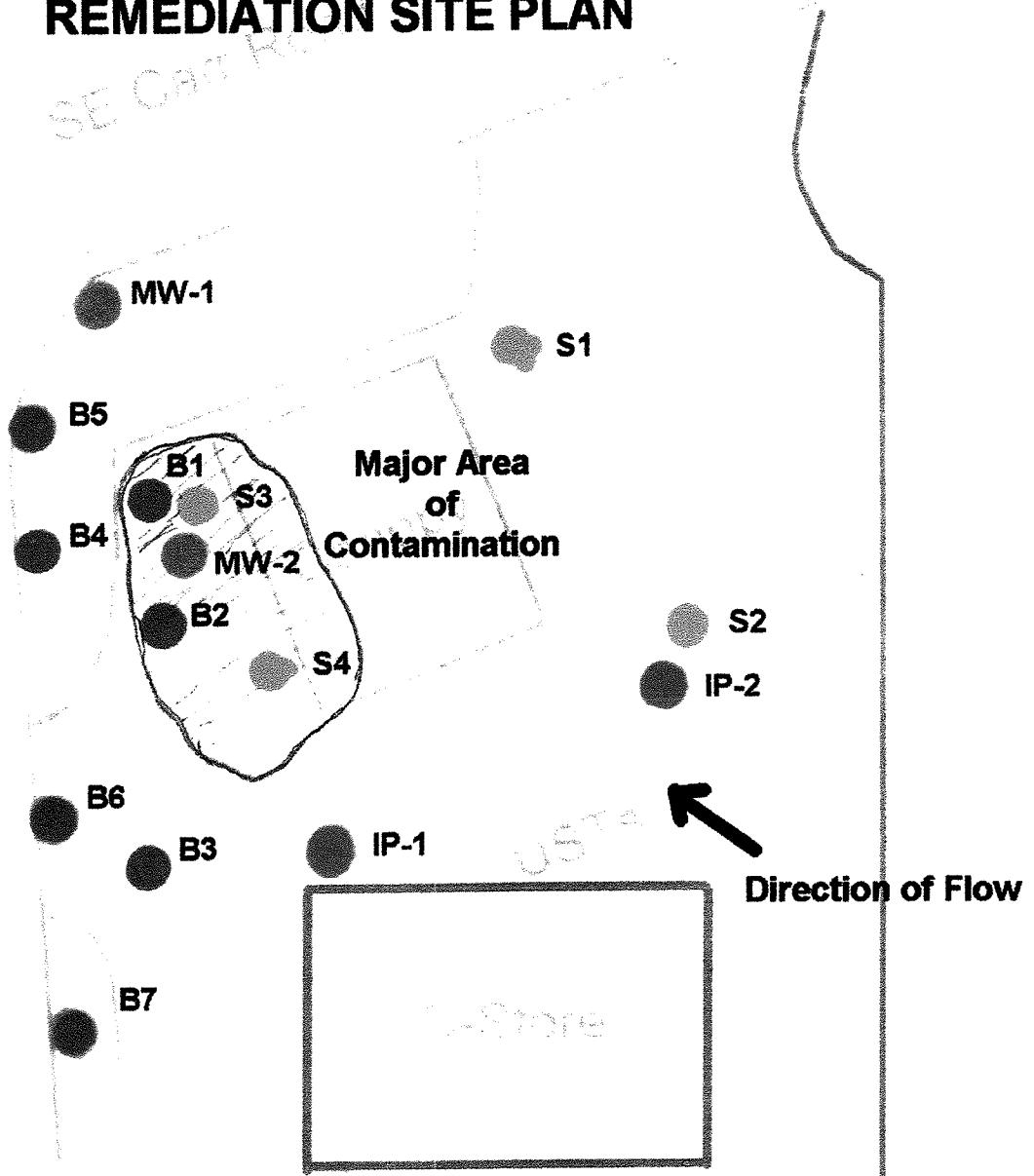
*Robert M. Rodman BSME*

*Donald Balmer RG*



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**REMEDIATION SITE PLAN**



- Monitoring Wells
- Boring's
- Injection Points
- Original Phase II Boring's