PREREMOVAL SITE ASSESSMENT

Weis Oil Company

600 East Lincoln

Fairfax, Minnesota 55332

WCEC Project No. 98-1993-30

1.0 INTRODUCTION

1.1 Purpose

West Central Environmental Consultants, Inc. (WCEC) was retained by Jeff Weis of Weis Oil Company in Fairfax, Minnesota to conduct a Preremoval Site Assessment (PRSA) at a site located at 600 East Lincoln. The purpose of the PRSA was to determine the current environmental status of the site due to the presence of a 11,000-gallon and a 1,000-gallon capacity underground storage tanks (USTs) that contain diesel fuels. These USTs are scheduled to be closed and removed from the site in April 1998.

This report summarizes the results of the PRSA and it also includes WCEC's recommendations for future actions at the site. The PRSA was completed according to the requirements of the Minnesota Pollution Control Agency (MPCA) document "*Site Assessments Prior to Tank Excavations*" Fact Sheet # 3.50.

1.2 Scope of Work

The following work has been performed at the site by WCEC:

- Completed five test holes on the site - March 26, 1998
- Performed field screening of soil samples collected from the borings with a photoionization detector (PID) to determine the relative concentrations of total organic soil gas vapors - March 26, 1998
- Submitted five soil samples for analytical characterization - March 26, 1998
- Submitted final version of project report to the Client - April 1998

This report summarizes the information collected during March 26, 1998, concerning the site.

2.0 SITE DESCRIPTION

2.1 Site Location

The site is located in a portion of the NE/4, Sec. 8, T112N, R32W, Renville County, Minnesota. The property is situated at the eastern edge of Fairfax, MN.

2.2 Site Operations

The site is a gasoline service station consisting of four pump islands, USTs, AST's, an asphalt parking lot, and one building which functions as a gasoline service station, retail sales, café, office, and storage, and a storage garage.

3.0 PREREMOVAL SITE ASSESSMENT

3.1 Introduction

A PRSA, which consisted of the completion of five test holes, was conducted on March 26, 1998.

3.2 Site History

The site was formerly known a Dittmer Oil Company. A UST leak was reported at the Dittmer Oil Company in October 1989, when approximately 2,300 gallons of leaded gasoline were discharged into the subsurface from a loose fitting on a product pipe connected to the 12,000 gallon gasoline UST. Free product was recovered and contaminated soil disposed of at that time. The impacts from that release were deemed to be remediated and the release "closed" by the MPCA.

While remediating the gasoline release, it was determined that there were other previous releases associated with gasoline UST installations. This was reported to the MPCA on October 27, 1989, and leak # 1940 was assigned. For example, the 12,000 gallon gasoline UST replaced another UST which had been leaking. Further, the 8,000 gallon gasoline UST had been leaking aned was patched with fiberglass in approximately 1985. Also, an apparent spill or overfill near the fill pipe of the 4,000 gallon unleaded gasoline UST was identified.

A remedial investigation was subsequently performed and completed on leak #1940 by GME Consultants, Inc. The MPCA "closed" this leak site on October 28, 1997.

This preremoval site assessment concerned the removal of the 11,000 gallon and 1,000 gallon diesel USTs located at the northwest corner of the property.

3.3 Subsurface Investigation

3.3.1 Site Soils. Site soils were characterized during the investigation by advancing five test holes and collecting and describing 55 soil samples. The USTs were buried under a grassy area.

Test hole #1 was completed just northwest of the 11,000 gallon UST. Soil in the test hole consisted of approximately two feet of black topsoil overlying silty clay till to the termination of the boring at 15.5 feet bgs. A sand layer was present from at approximately 7 to 12.5 feet below ground surface (bgs). Evidence of groundwater was noted at approximately 4 feet bgs.

Test hole #2 was completed to the northeast of the diesel tanks. Soils in the test hole consisted of approximately two feet of black topsoil overlying silty clay till to the termination of the boring at 15.5 bgs. A sand lense approximately 1" thick was present from at approximately 2 feet bgs. Groundwater was noted at approximately 8.8 feet bgs.

Test hole #3 was completed to the southwest of the 1,000 gallon diesel UST. Soils in the test hole consisted of approximately two feet of black topsoil overlying silty clay till to the termination of the boring at 19.5 feet bgs. Sand lenses approximately 2" thick were present at approximately 9 feet bgs and 15 feet bgs. Groundwater was not noted.

Test hole #4 was completed to the east of the diesel tanks. Soils below the asphalt in the test hole consisted of approximately two feet of black soil overlying silty clay till to the termination of the boring at 19.5 bgs. A sand lense approximately 3" thick was present from at approximately 13.5 feet bgs. Groundwater was noted at approximately 6.8 feet bgs.

Test hole #5 was completed to the east of test hole #4 and the diesel tanks, near a pump island. Soils below the asphalt in the test hole consisted of approximately two feet of black soil overlying silty clay till to the termination of the boring at 19.5 bgs. Groundwater was not noted.

3.3.2 Field Screening Results. Continuous soil samples were collected . Upon sample retrieval, the samples were logged and placed into plastic ziplock bags and sealed. Approximately 10 - 15 minutes after sample collection, the samples were screened with a PID equipped with a 10.2 electron volt (eV) lamp calibrated to a benzene equivalent to determine the relative concentrations of total organic soil gas vapors.

None of the samples collected from test hole #1 appeared to be above background levels. In test hole #2, the highest readings registered on the PID were116 ppm at approximately 7 feet bgs, and 24.8 ppm at approximately 10 feet bgs, while the other samples appeared to be at background levels. In test hole #3, the highest readings registered was 40.8 ppm at approximately 7 feet bgs, 37.2 ppm at 10 feet bgs, and 33.9 ppm at 11 feet bgs, while the other samples appeared to be at background levels. In test hole #4, organic soil gas vapors above background levels were detected from the surface to approximately 14 feet bgs. The highest concentration was found approximately 7 feet bgs and was 592.6 ppm. In test hole #5, organic soil gas vapors above background levels were found from the surface to approximately 18 feet bgs. The highest concentrations were found at 1 foot bgs and 6 feet bgs and were 1548 ppm and 1533 ppm, respectively.

3.3.3 Analytical Samples. One soil sample from each of the five test holes was submitted to Midwest Analytical Services (MAS) to be analyzed for benzene, toluene, ethyl-benzene, and xylene (BTEX), gasoline range organics (GRO), and diesel range organics (DRO).

Sample collection for laboratory analyses was based on the relative position of the sampled interval in relation to the apparent groundwater surface or apparent highest contaminant levels. The sampled intervals submitted for analysis were collected from 7 feet bgs, except TH #1, which was collected approximately 9.5 feet bgs. A copy of the laboratory analysis report is attached.

3.3.4 Analytical Results. The soil sample submitted from test hole #1 indicated no contamination above detection limits for GRO, DRO or BTEX. The sample from test hole #2 indicated no detect of benzene, 0.176 ppm toluene, 1.65 ppm ethylbenzene, 2.49 ppm xylenes, 229

ppm GRO, and 523 ppm DRO. The sample collected from test hole #3 exhibited no detection of benzene, no detection of toluene, .327 ppm ethylbenzene, .710 ppm xylenes, 79.3 ppm GRO and 341 ppm DRO. The sample collected from test hole #4 indicated <0.25 ppm benzene, no detection of toluene, 8.82 ppm ethylbenzene, 16.9 ppm xylenes, 1150 ppm GRO, and 3970 ppm DRO. In test hole #5, 28.7 ppm benzene was detected, 15.4 ppm toluene, 28.9 ppm ethylbenzene, 36.6 ppm xylenes, 2130 ppm GRO, and 286 ppm DRO.

4.0 DISCUSSION

Based on information from field and laboratory analysis of soils retrieved from the five test holes and background information from the previous releases at this site, it appears that there is some diesel contamination that has a source at, or near, the diesel tanks. It is also WCEC's opinion that some of the contamination discovered in the test holes is remnant of the previous releases at this site, as evidenced by the GRO and BTEX compounds present.

The highest levels of contamination appear to be nearer to the pump islands and decreases to the north and south. Groundwater appears to be approximately 4 to 10 feet bgs and is in contact with the contaminated soil. The groundwater is expected to be contaminated with both DRO and GRO compounds.

5.0 SUMMARY AND RECOMMENDATIONS

The purpose of this PRSA was to determine if petroleum hydrocarbon contamination is present at the Weis Oil Company site. The PRSA process included an on-site inspection and the completion of test holes, soil sample screening with a PID, and the analytical characterization of selected soil samples.

The State Duty Officer was notified upon discovery of the contamination during the PRSA on March 26, 1998, at 3:10 p.m. However, after conferring with the State Duty officer and Mr. Mark Koplitz, MPCA Project Manager for Leak #1940, assignment of a new leak # will be pending upon results from the excavation.

The results of this PRSA indicate both gasoline and diesel hydrocarbon contamination present immediately surrounding the tank basin and piping. The tank removal plan should assume that all soils removed from the tank basin will require treatment by composting, land farming, or incineration.

As required by the MPCA, one soil sample will need to be collected from beneath the 1,000 gallon diesel UST and 2 soil samples from below the 11,000 gallon UST and analyzed for DRO. Sidewall samples must be taken, as well as samples from any stockpiled contaminated soils, and submitted for laboratory analysis.

The amount of contaminated soil expected to be removed is shown below, and is taken from the MPCA guidance document #3.6, Tables 13.2A and 13.2B:

New Tank Size (gal)	Add (yd^3)	Old tank Size (gal)	Subtract
12,000	240 yd^3	11,000	50 yd^3
4,000	110 yd^3	1,000	40 yd^3

Also, for each new linear foot of piping trench, add 0.33 yd^3.

Using the above formula, the expected amount of soil to be encountered would be:

$(240 - 50) + (110 - 40) = 260$ yd^3 of contaminated soil + any piping

*Note, for the new 2,000 gallon gasoline tank to be installed at the east side of the property, based on the same table, 70 yd^3 of contaminated soil would be expected to be removed to install this tank.

It is WCEC's opinion that it is unlikely that active remediation will be required by the MPCA at this site. However, it may be necessary to complete a limited site investigation in the future to document the extent of contamination from the release from the diesel tank system.

6.0 REMARKS

The recommendations contained in this report represent our professional opinions. These opinions are based on currently available information and are arrived at in accordance with currently accepted hydrogeologic and engineering practices at this location. Other than this, no warranty is implied or intended.

This report was prepared by **West Central Environmental Consultants, Inc.**

Date: 10/23/98

Matthew Johnson
Project Manager

Note: original was signed/delivered previously