PHASE II½ ENVIRONMENTAL ASSESSMENT

FOR

THOMAS ABANDONED SERVICE STATION

Prepared for:

Wisconsin Department of Transportation

September 22, 1995

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Section One EXECUTIVE SUMMARY

1.1 Results and Conclusions

Enviroscience Inc. has completed a Phase II Environmental Assessment of the Thomas Abandoned Service Station site located in the City of Montreal, WI. The Phase II Environmental Assessment was conducted on May 23-26 for the Wisconsin Department of Transportation (WDOT) State Trunk Highway (STH) 77, Montreal to Hurley, Project I.D.# 9250-09-00.

The proposed project is located on State Trunk Highway 77 in Iron County. It begins west of the City of Montreal's corporate limits, at Elm Street, and extends easterly approximately 4.0 miles through the City of Montreal, into the City of Hurley to 6th Avenue. The existing roadway consists of both rural and urban sections.

The urban portion of the project would involve reconstructing the section in the City of Montreal from Bessemer Street approximately 2.0 miles into the City of Hurley to 5th Street. The urban section will be constructed as a 36-foot wide face to face curb and gutter section, with a storm sewer system.

The results of the assessment are as follows:

* The site ceased operations in 1989. Prior to 1989 the site operated as a gasoline service station. The investigator was unable to determine the date that the station began operations.

* The properties to the east and west sides of the Thomas site are undeveloped woods. State Trunk Highway 77 runs along the north side

of the property while the Montreal River runs parallel to the south side of the property.

* There was no surface evidence of spills but, common to all gasoline sites, there is the possibility that overfills have occurred.

* Two soil borings (SB-5 and SB-6) were drilled to depth of 7.0 and 12.0 feet below grade (bg) respectively. Both borings were located within the existing STH 77 right-of-way.

* Ground water was encountered at approximately the 2.5 to 4.5-foot level in both soil borings. Bedrock was encountered in both borings.

* Photoionization detector (PID) field screening of soil samples did not indicate the presence of petroleum constituents. Also, visual and olfactory inspection gave no evidence that contamination was present.

* One soil sample from SB-5 and two samples from SB-6 were analyzed for Gasoline Range Organics (GRO) and Diesel Range Organics (DRO). The second sample was taken from SB-6 for use as a duplicate (a quality assurance measure). The SB-5 sample contained DRO at a concentration of 100 ppm which is well above the WDNR remedial action guideline of 10 ppm. DRO in samples SB-6 and SB-6 (dupl.) and GRO in SB-5, SB-6 and SB-6 (dupl.) were below the DNR guideline of 10 ppm.

* SB6 was developed into a temporary ground water monitoring point by placing a screened well casing within the boring. A water sample tested for Petroleum Organic Compounds (PVOC) with no detection.

1.2 Recommendations

Based on the results of this investigation, Enviroscience recommends additional investigation of soil contamination in the anticipated construction zone (surface to five feet) within the Wisconsin Department of Transportation (WDOT) right-of-way at this site. It should be noted that a 100 ppm level of Diesel Range Organics was identified in the 2.5 to 4.5-foot zone of SB-5. The Wisconsin Department of Natural Resources (WDNR) remedial action guideline for Diesel Range Organics (DRO) and Gasoline Range Organics (GRO) soil contamination is 10 ppm. Also a low level of Gasoline Range Organics, 1.7 ppm, were identified in SB-5 in the 2.5 to 4.5-foot zone. Diesel Range Organics (DRO) were also detected (9.7 ppm) in the 5.0 to 7.0-foot zone of SB-6. It is possible that higher concentrations of petroleum contamination exist on the site in areas that were not investigated.

The potential exists to encounter soil contamination during construction. The extent and degree of soil contamination within the right-of-way needs to be defined in order to determine the best method of soil handling and remediation.

Sampled ground water did not contain Petroleum Volatile Organic Compounds (PVOC's), but because the ground water is so close to the surface (within 2.5 to 4.5 feet in both soil borings) impacts to the ground water may exist elsewhere on the site. Current construction plans involve excavation for new storm sewers to a

depth of five feet so dewatering may be required. The potential exists to encounter Volatile Organic Compound (VOC) contaminated ground water during this excavation. Crews responsible for dewatering should be prepared to handle Volatile Organic Compounds (VOC) impacted ground water if necessary. At a minimum, if any indication of soil contamination (e.g., petroleum odor) is discovered during construction, a Wisconsin Department of Transportation (WDOT) environmental consultant should be on-site to monitor the excavation and disposal or treatment of the impacted soil.

Section Two SITE INVESTIGATION

2.1 Purpose and Scope

The Phase II Site Assessment was performed to determine if soil and/or groundwater in the State Trunk Highway (STH) 77 right-of-way has been impacted by the possible release of petroleum products from past operations on the Thomas Abandoned Service Station site. Highway construction is currently being proposed for STH 77 through the City of Montreal, to Hurley, WI. The Thomas Abandoned Service Station Site is located within the right-of-way of the proposed construction (see Figure 2-1). Current construction plans include increasing the width of the urban section of STH 77 from 22 to 36 feet, resurfacing the roadway and installing storm sewers. This assessment was conducted for Level One, Inc. on May 24-26 as part of WDOT Project I.D. # 9250-09-00.

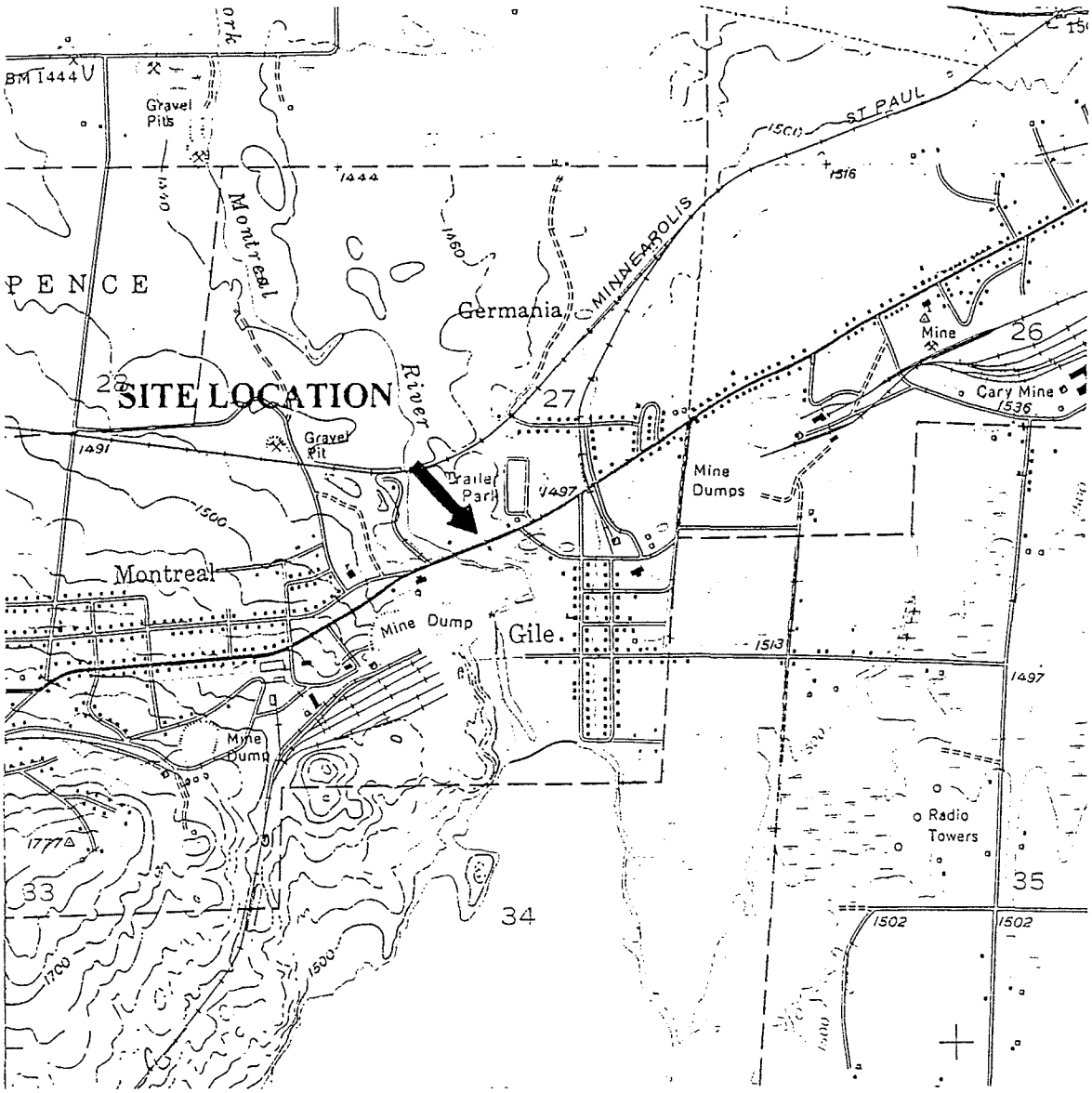
The assessment for this site consisted of the following:

* a review of the site history,
* a review of topographic maps, United States Geological Survey (USGS) Water Resources Maps, soils and bedrock identification maps,
* interviews of people familiar with the site,
* a review of regulatory lists,
* a reconnaissance inspection of the site and surrounding area to identify potential contamination sources,
* the advancement of two soil borings, SB-5 to 7 feet below grade (bg) and SB-6 to 12 feet below grade (bg),

* field screening of subsurface soil samples every 2.5 feet in depth for the presence of Petroleum Organic vapors and for visual evidence of petroleum contamination,

* collection and lab analysis for GRO and DRO of one subsurface soil sample from each boring, plus one duplicate sample,

* collection of lab analysis for PVOC of one groundwater sample, plus one duplicate sample.



SITE LOCATION

Thomas Abandoned Service Station Site

FIGURE 2-1

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2.2 Site Description and History

The Thomas site is located approximately 2 tenths of one mile north of the Montreal City Hall on STH 77 in the NW 1/4 SW1/4, Sec. 27, T 46N R2E, City of Montreal, Iron County, Wisconsin . The site is owned by Mr. Bill Thomas of 24 Nimikon, Gile, WI, (715) 561-5314. The site consists of one building, a single story service station with two service bays. The sites is not presently being use. The north side of the site is bounded by STH 77 and the adjacent properties to the east and west are undeveloped woods. The Montreal River runs along the south side of the property. The site is illustrated in Figure 2-2.

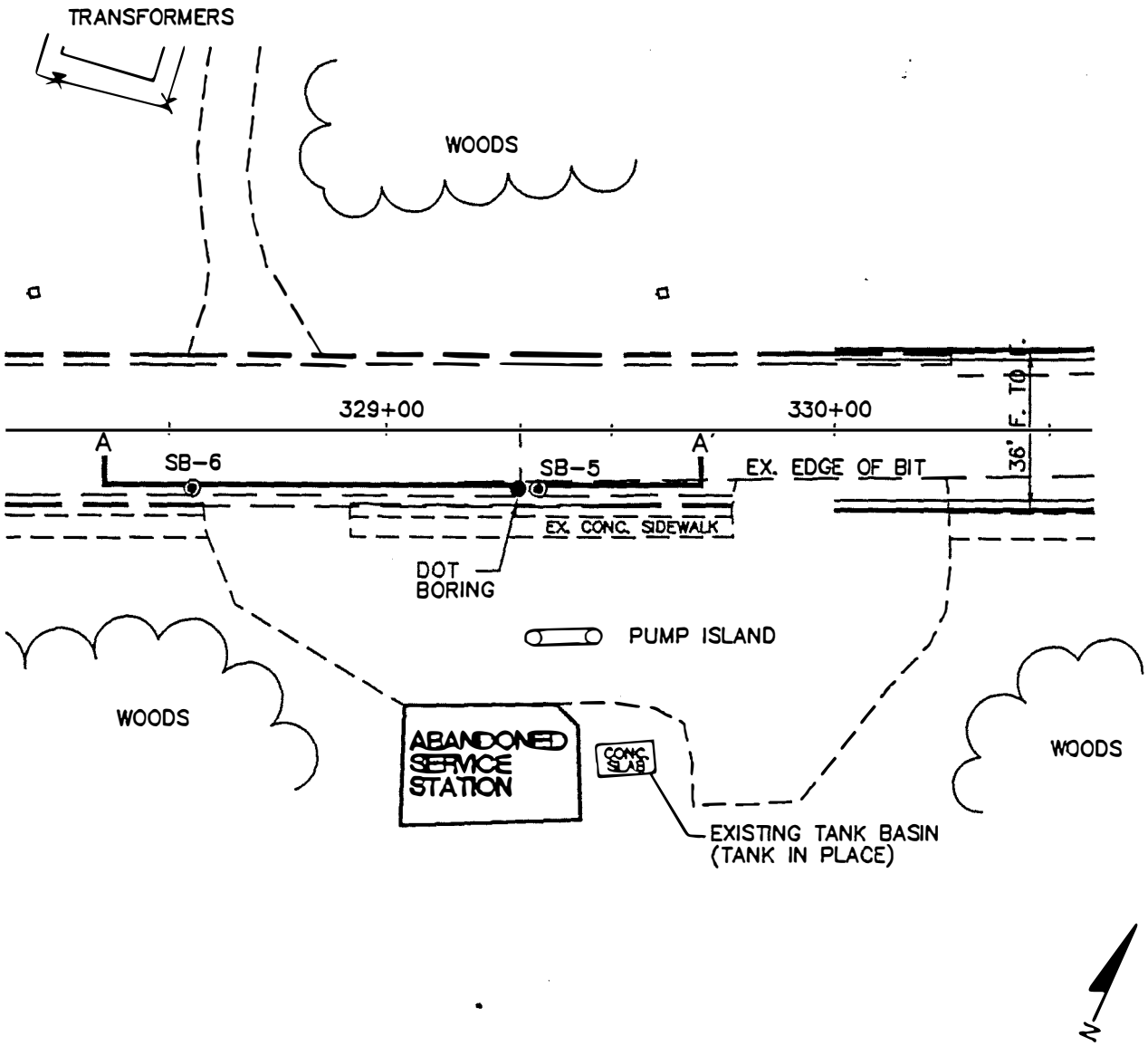
From an interview with the site owner, Bill Thomas, Mr. Steven Palzkill of Enviroscience, Inc., determined that:

* the site has been inactive since 1989,
* previous to 1989 the site operated as Sarri Brothers Service Station, but the investigator was unable to determine the date the station began operations,
* Two 1000 gallon gasoline storage tanks are still in place at the site.

2.3 Geologic/Hydrogeologic Setting

The City of Montreal is in the northern part of Iron County in the Lake Superior Basin. The subsurface geology in this area is composed of Precambrian crystalline rocks (undifferentiated igneous and metamorphic rocks to the south of Montreal and basaltic lava flows to the north). The soils are Quaternary ground moraine (glaciolacusterine unstratified clay, silt, sand, gravel, and cobbles). Bedrock is

encountered at an average depth of 10 feet. The topography is deeply dissected lake plane. Ground water in the area of the site generally flows toward the Montreal River.



LEGEND

◉ SOIL BORING

● DOT BORING

APPROXIMATE SCALE: 1" = 40'

JUNE 21, 1994

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THOMAS ABANDONED
SERVICE STATION
MONTREAL

FIGURE 2

2.4 Regulatory Review

A record search was performed to uncover any previous spills or other enforcement actions that may have been reported on or around the Thomas Site. The search referenced the Wisconsin Department of Industry, Labor and Human Relations (WDILHR) Computer Inventory of Underground Petroleum Storage Tanks. The Thomas UST's were not, but should have been, listed on this inventory.

The Wisconsin Department of Natural Resources (WDNR) Leaking Underground Storage Tank (LUST) List and the WDNR Statewide Spills and Hazardous Incident Report were reviewed. One active LUST site was identified within the area at the Montreal City Hall. The Montreal River separates the two sites so any ground water or soil impact on the Thomas Site from the City Hall site is not anticipated.

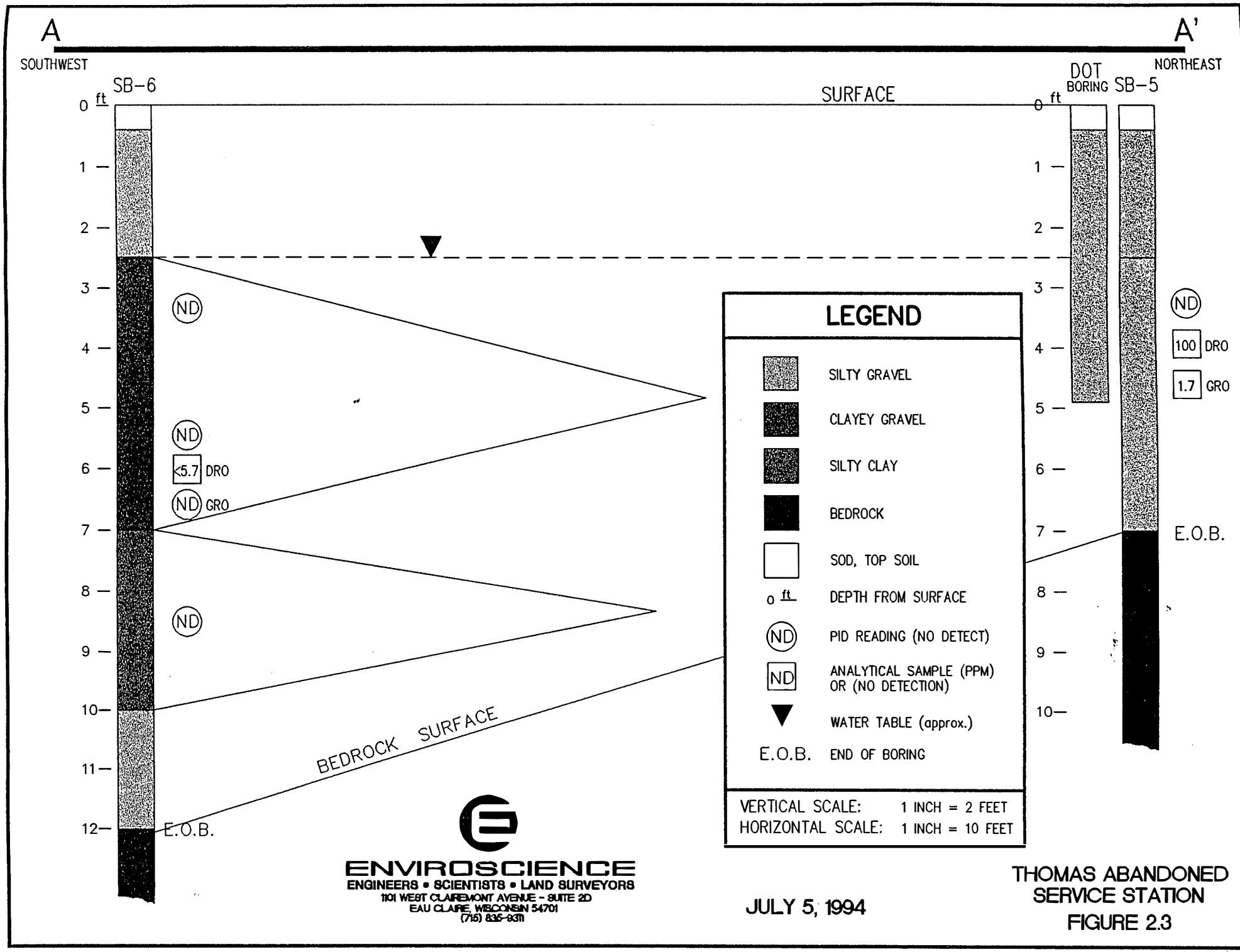
2.5 Sampling Procedures and Locations

Two soil borings (SB-5 and SB-6) were advanced using a hollow stem auger drill rig and one sample from each boring was collected using split-spoon samplers and one duplicate sample was also taken (See Appendix D). Boring locations are illustrated in Figure 2-2.

Ground water was encountered at approximately the 2.5 to 4.5-foot (bd) in both soil borings. A screened well casing was placed within SB-6 for use as a temporary monitoring well. Two ground water samples were collected from SB-6 using a disposable bailer. The second sample was taken as a duplicate. The ground water samples were tested for the presence of PVOC's. No PVOC's were detected in the SB-6 ground water samples.

A photoionization detector (PID) was used to field test for presence of organic vapors. The results of the field screening are illustrated in Table 2-1.

The technical procedures followed for collecting soil, field screening of samples, laboratory testing of samples, maintaining security and integrity of the samples, and procedures used for sample identification and chain of custody are included in the Appendices.



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JULY 5, 1994

THOMAS ABANDONED SERVICE STATION
FIGURE 2.3

2.6 Analytical Results

2.6.1 Field Screening

Subsurface soil samples were screened for presence of organic vapors using a calibrated PID following the methodology in Appendix D. A summary of field screening results are illustrated in Table 2-1.

TABLE 2-1

SOIL GAS FIELD SCREENING

BORING NUMBER	DEPTH (ft)	PID RESPONSE (ppm)	MOISTURE	PETROLEUM ODOR
SB-5	2.5-4.5	ND	WET	NONE
SB-6	2.5-4.5 5.0-7.0 7.5-9.5	ND ND ND	WET WET WET	NONE NONE NONE

2.6.2 Results of Laboratory Chemical Analysis of Samples

The laboratory analysis of soil sample SB-5 indicated a concentration of DRO at 100 ppm (the WDNR remedial action limit is 10 ppm). Both samples analyzed from SB-6 yielded concentrations of DRO below the laboratory detection limit. GRO in all three samples were not detected. The results of the laboratory analysis of the soil samples are illustrated in Table 2-2 below.

TABLE 2-2

SOIL SAMPLE CHEMICAL ANALYSIS.

SAMPLE NUMBER	SAMPLE DEPTH (ft)	COLLECTION DATE	DRO ppm	GRO ppm	SOLIDS (%)
SB-5	2.5 - 4.5	5-24-94	100	1.7	87.5
SB-6	5.0 - 7.0	5-24-94	<5.7	<1.1	87.1
SB-6 (dupl.)	5.0 - 7.0	5-24-94	9.4	<1.1	87.1

PVOC's were not detected in ground water sample SB-6 above laboratory detection limits. The results of laboratory analysis of ground water samples are illustrated below in Table 2-3.

TABLE 2-3

GROUND WATER SAMPLE ANALYSIS

SAMPLE NUMBER	COLLECTION DATE	PVOC's (ug/L)
SB-6	5-25-94	<1.0
SB-6 (dupl.)	5-25-94	<1.0

2.7 Conclusions

This section discusses field observations and analytical data pertaining to observed or potential contamination that may be attributed to the Thomas Abandoned Service Station, Montreal, Wisconsin.

The site history and site inspection revealed that commercial activities have taken place at this site since an unknown date. Two gasoline UST's are located on this site which operated as a service station until 1989. No evidence of petroleum spills (e.g. stressed vegetation, stained soils) was observed during the site inspection.

PID field screening of headspace samples from soil borings did not suggest the presence of organic vapors at levels above background for the site. No visual or olfactory evidence of petroleum contamination was observed.

Laboratory analysis revealed DRO concentration of 100 ppm at a depth of 2.5 to 4.5 feet (bg) in soil boring SB-5. This level of contamination exceeds the 10 ppm WDNR remedial action guideline for petroleum impacted soils. Additionally a concentration of 1.7 ppm GRO was encountered in boring SB-5, but this level is below the remedial action guideline. Soil boring SB-6 showed a detection of DRO contamination of 9.4 ppm at the 5.0 to 7.0-feet (bg). This level is above background but below the remedial action limit.

Based on the results of field screening and laboratory analysis, the areas near soil boring SB-5 which are anticipated to be encountered during construction activities in the STH 77 right-of-way at this site are impacted by DRO at a concentration sufficient to require additional work.

Field observation of ground water did not indicate any obvious signs of contamination (e.g. odor, petroleum sheen, or discolorations). Laboratory results did not indicate the presence of any PVOC. Ground water was encountered at a depth of 2.5 to 4.5 feet (bg). The current construction plans for the highway do include excavating at depths sufficient to encounter ground water.

Mr. Chris Sarri of WDNR, Northwest District was notified of the release on June 20, 1994. Mr Sarri indicated that a responsible party letter would be issued to the property owner. The possibility exists that the property owner may not respond in a timely manner. Delay of the proposed highway construction project may occur as a result.

2.8 Recommendations

Based on the results of this investigation, Enviroscience recommends additional investigation of soil contamination in the anticipated construction zone (surface to five feet) within the WDOT right-of-way at this site. It should be noted that a 100 ppm level of DRO was identified in the 2.5 to 4.5-foot zone of SB-5. The

WDNR remedial action guideline for DRO and GRO soil contamination is 10 ppm. Also a low level of GRO, 1.7 ppm, was identified in SB-5 in the 2.5 to 4.5-foot zone. DRO were also detected (9.7 ppm) in the 5.0 to 7.0-foot zone of SB-6. It is possible that higher concentrations of DRO and GRO exist on the site in areas that were not investigated.

The potential exists to encounter soil contamination during construction. The extent and degree of soil contamination within the right-of-way needs to be defined in order to determine the best method of soil handling and remediation.

Sampled ground water did not contain PVOC's, but because the ground water is so close to the surface (within 2.5 to 4.5 feet in both soil borings) impacts to the ground water may exist elsewhere on the site. Current construction plans involve excavation for new storm sewers to a depth of five feet so dewatering may be required. The potential exists to encounter VOC contaminated ground water during this excavation. Crews responsible for dewatering should be prepared to handle VOC impacted ground water if necessary.

At a minimum, if any indication of soil contamination (e.g., petroleum odor) is discovered during construction, A WDOT environmental consultant should be on-site to monitor the excavation and disposal or treatment of the impacted soil.

2.9 Standard of Care

The conclusions contained in this report represent our professional opinions. Our opinions are arrived at in accordance with currently accepted hydrogeologic and engineering practices at this time and location. Enviroscience observed the degree of care and skill generally exercised by the profession under similar circumstances and conditions. No other warranty is expressed or implied.

Information in this report obtained during interviews was accepted in good faith. Information in this report obtained through databases is limited to the accuracy of those databases.

GENERAL PERMIT TO DISCHARGE UNDER THE WISCONSIN POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of Chapter 147, Wisconsin Statutes, any facility located in the State of Wisconsin discharging

CONTAMINATED OR UNCONTAMINATED GROUNDWATER

meeting the applicability criteria listed in Part I of this General permit, is permitted to discharge these wastewaters directly to

surface waters of the state and/or indirectly to state groundwaters

in accordance with the effluent limitations, monitoring requirements and other conditions set forth in this permit.

This permit shall become effective on the date of signature.

This permit to discharge shall expire at midnight September 30, 1995.

State of Wisconsin Department of Natural Resources
For the Secretary

By Mary Jo Kopecky
Mary Jo Kopecky, Director
Bureau of Wastewater Management
Division For Environmental Quality

Dated FEB 8 - 1991

Table of Contents

A. APPLICABILITY CRITERIA

1. Eligible Facilities

This permit is only applicable to uncontaminated or treated contaminated groundwater discharges to surface waters or to groundwaters where the Department determines that the discharge will not have significant impacts on receiving waters.

2. Pollutants Regulated by this Permit

This permit is designed to regulate the impacts on surface waters from the discharge of groundwater contaminated by petroleum products and volatile organic compounds. The permit can also be used to regulate pollutants listed in NR 140 for wastewater discharges to groundwaters via infiltration.

3. Pollutants Not Properly Regulated by this Permit

The permit does not adequately protect surface water quality when wastewater discharges from groundwater clean-up remediations require limits for priority pollutant pesticides, toxic metals, phenols or cyanide. This permit is not applicable to discharges requiring limits for these compounds. A separate WPDES permit shall be drafted on a case-by-case basis for a discharge requiring limits for pollutants of this nature. Except for polynuclear aromatic hydrocarbons from petroleum product releases, a separate permit shall also be drafted for a discharge requiring limits for priority pollutant GC/MS acids or base neutral compounds. Polynuclear aromatic hydrocarbons are limited in the permit since they may be found in groundwater contaminated by petroleum products.

4. Bioaccumulating Toxic Substances

This permit does not authorize the discharge of any of the following 21 bio-accumulating toxic substances. This permit is not applicable to discharges containing these compounds; such a discharge must be regulated by an individually drafted permit.

Acrolein	Dieldrin	Mercury
alpha-BHC	Endosulfan	PCB
beta-BHC	Endrin	Pentachlorobenzene
gamma-BHC (Lindane)	Fluoranthene	1,2,4,5-Tetrachlorobenzene
tech.-BHC	Heptachlor	2,3,7,8-Tetrachlorodibenzo-p-dioxin
Chlordane	4,4'-DDT	Toxaphene
3,3'-Dichlorobenzidine	Hexachlorobenzene	2,4,6-Trichlorophenol

5. Cover Letter

This permit is only valid if accompanied by a letter from the Department stating that pollutants present in the discharge have been evaluated for compliance with the applicable surface water or groundwater quality standards, and that the general permit limits are sufficiently restrictive to protect surface and groundwater quality. The cover letter will specify

A. APPLICABILITY CRITERIA (Cont.)

which parameters must be monitored to document compliance with water quality or treatment technology based standards. Monitoring may be required for parameters not listed in the effluent limit table so that pollutant removal in the treatment system may be evaluated.

6. Outstanding Resource Waters

This permit does not authorize discharges to outstanding resource waters as defined in Ch. NR 207 and NR 102.10. This permit does not authorize discharges that would lower the water quality of downstream outstanding resource waters. An individually drafted WPDES permit is required to protect outstanding resource waters from the effects of any discharge.

7. Waters Classified as a Public Water Supply

This permit does not authorize direct discharges to waters classified as a public water supply in Ch. NR 103 and NR 104. An individually drafted WPDES site specific permit is required to protect public water supplies from the effects of a remediation discharge.

8. Exceptional Resource Waters

This permit may authorize discharges that lower the water quality of exceptional resource waters as defined in NR 102.11 when the discharge meets the requirements of Ch. NR 207, such as preventing or correcting an existing groundwater contamination situation or a public health problem.

6. More Than One Permit (GP) Can Apply

A WPDES Permit shall be obtained for all wastewater discharges from a facility that are conveyed through storm sewers, ditches or direct pipes to surface waters or groundwaters of the state. Facilities discharging wastewater meeting all the applicability criteria of this permit shall comply with the effluent limitations, monitoring requirements, and other conditions of this permit. Chapter 147, Wis. Stats. requires that if a wastewater discharge to the environment does not meet all of the applicability criteria of this permit, that discharge must be authorized under another WPDES permit. That other permit may be a different general WPDES permit, or it may be a WPDES Permit specifically drafted for the discharges from the facility. A facility may discharge wastewater in compliance with one general WPDES permit and discharge other wastewaters in compliance with a different general permit (e.g. the Remedial Action GP for one discharge, and the Non-contact Cooling Water GP for another discharge). The appropriate general WPDES permit is determined by the applicability of the permit to the wastewater being discharged. In no way shall this condition be used to avoid more stringent requirements.

B. SPECIAL CONDITIONS

1. Surface Water and Groundwater Standards

This permit does not authorize discharges of pollutants in quantities which would be harmful to human, animal, plant or aquatic life. No discharge is allowed that would violate surface water quality standards (Ch. NR 102, NR 105, NR 106, and NR 207 Wis. Adm. Code) or groundwater quality standards (Ch. NR 140, Wis. Adm. Code).

2. Treatment of Contaminated Groundwater

Any discharge of contaminated groundwater, including pump tests, shall be treated for pollutant removal prior to discharge. The level of treatment shall be adequate to assure compliance with water quality standards or shall be equivalent to Best Available Treatment Economically Achievable, whichever is more restrictive. The treatment unit shall be adequately sized, designed, and operated to remove contaminants identified through sampling and characterization of the discharge.

3. Submittal of the Treatment System Design for Approval

Section 144.04, Wisconsin Statutes requires review and approval of construction plans and specifications for wastewater treatment systems. When treatment units for contaminated groundwater are package units purchased from a supplier, a minimum plan submittal would be a diagram, a summary of the design, and the sizing calculations for the units.

4. Inspection, Maintenance, and Documentation

Separated contaminants, and solids if present, shall be removed on a periodic basis to maintain the treatment capacity and efficiency of the system. The water discharge side of the treatment unit shall be maintained clean and there shall be no contaminant sheen or scum on the equipment. All removed substances shall be disposed of in accordance with General Condition #18 in Part II of this permit. Documentation of contaminant disposal shall include: the amount removed, date of removal, hauling firm, and ultimate fate of the separated material. These records shall be maintained on site.

5. Floating Solids and Foam

There shall be no direct discharge to surface waters of floating solids or visible foam in other than trace amounts.

6. Dewatering

Discharges from pumping uncontaminated groundwater to lower the water table or dewater excavations shall contain Total Suspended Solids (TSS) at 40 mg/L or less, and Oil/Grease at 10 mg/l or less on a daily maximum basis. Total daily flow, TSS and oil/grease shall be monitored at a frequency specified in the cover letter accompanying this permit.

B. SPECIAL CONDITIONS (Cont.)

7. Chlorine for Bacterial Control

Chlorine may be used to control the growth of micro-organisms in the treatment system. The preferred chlorination system would be to clean and chlorinate the treatment unit when it is out of service, and then capture the cleaning wastewater for acceptable offsite disposal, such as a sanitary sewer. Alternatively, the cleaning wastewater may be treated for removal of suspended solids and other pollutants, and then discharged under this permit. However, the discharge of chlorinated water to surface waters under this permit shall not contain detectable amounts of Total Residual Chlorine using Standard Methods #408B, D or E (DPD titration or colorimetric) or by using an ion specific electrode approved in Ch. NR 219. Monitoring of trihalomethanes or other chlorinated hydrocarbons may be required for a discharge of chlorinated water. Other biocides may not be discharged under this permit.

8. pH Limit and Monitoring For Surface Water Discharges

The pH of all surface water discharges authorized by this permit shall be maintained within the range of 6.0 to 9.0 standard units. A grab sample shall be analyzed whenever treatment unit cleaning solutions are discharged.

9. Dike or Berm Leakage

Where treatment or disposal ponds are contained by dikes or berms, no above ground leakage is allowed on the outer surface of such dikes or berms.

10. Other Permits For Work Near Surface Waters

Any work performed below, or within 500 feet of the ordinary high water mark of navigable waters, in wetland areas, or within areas subject to local floodplain and shoreland regulations, must conform to all such county or local ordinances. Also, all applicable state permits and/or contracts required by Chapters 30, 31, and 87, Stats. (or Wisconsin Administrative Code adopted under these laws), and federal permits must be obtained as necessary for wetland, shoreland or floodplain work of this nature.

11. Other Permits For Air Emissions

The emission of Volatile Organic Contaminants from air stripping of contaminated groundwater shall be either exempted from, or in compliance with a DNR air emission permit. Current regulations call for a permit for emissions of more than 300 pounds of benzene per year. Other air emissions from treatment of contaminated groundwater shall be evaluated on a case-by-case basis regarding the need for an air emission permit.

C. EFFLUENT LIMITATIONS FOR DISCHARGES TO SURFACE WATERS FROM REMEDIATION OF GROUNDWATER CONTAMINATED BY PETROLEUM PRODUCTS

During the period beginning on the date of signature and lasting until September 30, 1995, the permittee is authorized to discharge groundwater that has been treated for removal of petroleum products to surface waters of the state. Surface waters includes ditches, storm sewers and pipes that convey wastewater to creeks, streams, rivers and lakes in Wisconsin.

1. Where to Sample. Samples representative of the discharge shall be collected after treatment and prior to discharge to the environment. When treatment efficiency reporting is required, the influent sample shall be collected before the wastewater passes through the treatment unit.

2. Regular Wastewater Testing. The cover letter accompanying this permit shall specify which parameters shall be monitored to assure compliance with water quality or treatment technology based standards.

3. Surface water effluent limits are specified below for discharges of groundwater that have been treated for removal of petroleum products.

Parameter	Effluent Limit	Sample Type	Sample Frequency	Test Method
Flow	-	Total Daily	Daily	-
Total BETX	750 ug/L, Daily Maximum	Grab	See (a) below	See (b) below
Benzene, (c)	50 ug/L, Monthly Avg.	Grab	See (a) below	See (b) below
Polynuclear Aromatic Hydrocarbons, (d)	0.1 ug/L, Monthly Avg.	Grab	See (a) below	See (b) below
Oil/Grease, (e)	10 mg/L, Daily Maximum	Grab	See (a) below	See (b) below
Total Suspended Solids, (f)	40 mg/L, Daily Maximum	Grab	See (a) below	See (b) below

a. Sample Frequency. The discharge shall be sampled weekly during the first four weeks of discharge, and then sampled every two weeks. After three months, the Department may, by letter, authorize a monthly sampling frequency. Reduced sampling will only be allowed if the pollutant levels in the discharge are always well below permit limits, and there is little chance that influent pollutants may break through the treatment unit and violate permit limits. After reviewing a year of sample data, the Department may reduce the sampling frequency to quarterly.

b. Test Methods. The following test methods shall be used unless specified otherwise by a letter from the Department. EPA methods 602, 624, or 1624 shall be used for determination of benzene, ethyl benzene, toluene and total xylenes including ortho-, meta-, and para-xylene. EPA method 610 HPLC shall be used for the determination of polynuclear aromatic hydrocarbons. EPA method 413.1 (Standard Methods 503A) shall be used for determination of oil and grease when required. EPA Method 160.2 (Standard Methods 209C) shall be used for determination of total suspended solids when required.

c. Benzene. Compliance with the benzene effluent limit will require effective wastewater treatment consisting of free product separation followed by removal of

C. EFFLUENT LIMITS FOR PETROLEUM PRODUCT REMEDIATIONS (Cont.)

the benzene dissolved in the wastewater. Some pollutant removal will be required in all cases, even when the untreated wastewater could meet the limits listed above. The 50 ug/L benzene limit will assure compliance with Wisconsin Water Quality Standards in almost all cases. A more restrictive water quality based benzene limit would be included in a permit specifically drafted for a direct discharge to waters, such as the Great Lakes or Lake Winnebago, that are classified as public drinking water sources.

d. Polynuclear Aromatic Hydrocarbons. Groundwater remediation of "heavier" products such as heating fuel, diesel fuel, jet fuel, and other similar substances may contain polynuclear aromatic hydrocarbons. Detection of any combination of the following polynuclear aromatic hydrocarbons shall be less than 0.1 ug/L: benzo(a)pyrene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(g,h,i)perylene, chrysene, dibenzo(a,h)anthracene, indeno(1,2,3-cd)pyrene, phenanthrene, and pyrene. A more restrictive site specific permit shall be drafted for a direct discharge of polynuclear aromatic hydrocarbons to waters, such as the Great Lakes or Lake Winnebago, that are classified as public drinking water sources.

e. Oil and Grease. Monitoring will not be required if the petroleum product is solely gasoline. For "heavier" products such as heating fuel, diesel fuel, jet fuel, and other similar substances, monitoring is important to assure that free product separation followed by VOC removal is effectively treating the wastewater.

f. Total Suspended Solids. Monitoring for TSS shall be required at sites where groundwater is pumped from open pits or trenches. Discharges from wells will not require monitoring for TSS.

g. Grab Sample. A grab sample means a single sample taken at one moment of time or a combination of several smaller samples of equal volume taken in less than a two minute period.

h. Daily Maximum Effluent Limitation. A daily maximum effluent limit is to be compared with the result of each analysis performed during that day. Compliance is achieved when each analysis result is less than the maximum daily effluent limitation.

D. EFFLUENT LIMITATIONS FOR DISCHARGES TO SURFACE WATERS FROM REMEDIATION OF GROUNDWATER CONTAMINATED BY VOLATILE ORGANIC COMPOUNDS

During the period beginning on the date of signature and lasting until September 30, 1995, the permittee is authorized to discharge groundwater that has been treated for removal of volatile organic compounds to surface waters of the state. Surface waters includes ditches, storm sewers and pipes that convey wastewater to creeks, streams, rivers and lakes in Wisconsin.

1. Where to Sample. Samples representative of the discharge shall be collected after treatment and prior to discharge to the environment. When treatment efficiency reporting is required, the influent sample shall be collected before the wastewater passes through the treatment unit.

2. Regular Wastewater Testing. The cover letter accompanying this permit shall specify which parameters shall be monitored to assure compliance with water quality or treatment technology based standards.

3. Surface water effluent limits are specified below for discharges of groundwater that have been treated for removal of volatile organic compounds. These limits are not restrictive enough to protect the quality of waters classified as a public drinking water source. A discharge must be covered by a site specific WPDES permit when the following limits are not sufficiently restrictive to meet state water quality criteria.

Parameter	Effluent Limit	Sample Type	Sample Frequency	Test Method
Flow	-	Total Daily	Daily	-
Total Suspended Solids, (e)	40 mg/L, Daily Maximum	Grab	See (a) below	See (b) below
Acrylonitrile	See (c) below	-	-	-
Bromoform	120 ug/L, Monthly Avg.	Grab	See (a) below	See (b) below
Carbon Tetrachloride	150 ug/L, Monthly Avg.	Grab	See (a) below	See (b) below
Chloroform	120 ug/L, Monthly Avg.	Grab	See (a) below	See (b) below
Dichlorobromomethane	120 ug/L, Monthly Avg.	Grab	See (a) below	See (b) below
1,2-Dichloroethane	180 ug/L, Monthly Avg.	Grab	See (a) below	See (b) below
1,1-Dichloroethylene	50 ug/L, Monthly Avg.	Grab	See (a) below	See (b) below
Methyl Bromide	120 ug/L, Monthly Avg.	Grab	See (a) below	See (b) below
Methyl Chloride	120 ug/L, Monthly Avg.	Grab	See (a) below	See (b) below
1,1,2,2,-Tetrachloroethane	50 ug/L, Monthly Avg.	Grab	See (a) below	See (b) below
Tetrachloroethylene	50 ug/L, Monthly Avg.	Grab	See (a) below	See (b) below
1,1,2,-Trichloroethane	50 ug/L, Monthly Avg.	Grab	See (a) below	See (b) below
Trichloroethylene	100 ug/L, Monthly Avg.	Grab	See (a) below	See (b) below
Vinyl Chloride	10 ug/L, Monthly Avg.	Grab	See (a) below	See (b) below

a. Sample Frequency. The discharge shall be sampled weekly during the first four weeks of discharge, and then sampled every two weeks. After three months, the Department may, by letter, authorize a monthly sampling frequency. Reduced sampling will only be allowed if the pollutant levels in the discharge are always well below

D. EFFLUENT LIMITS FOR VOLATILE ORGANIC COMPOUND REMEDIATIONS (Cont.)

permit limits, and there is little chance that influent pollutants may break through the treatment unit and violate permit limits. After reviewing a year of sample data, the Department may reduce the sampling frequency to quarterly.

b. Test Methods. The following test methods shall be used unless specified otherwise by a letter from the Department. EPA methods 601 or 624 shall be used for determination of volatile organic compounds. EPA Method 160.2 (Standard Methods 209C) shall be used for determination of total suspended solids when required.

c. Acrylonitrile. Discharges containing detectable quantities of Acrylonitrile shall not be regulated by this permit, but by a separate WPDES permit specifically drafted for the discharge. This permit does not regulate acrylonitrile because of the very low water quality criteria, problems in treating the compound and the difficulties of obtaining adequate analysis detection limits.

d. Treatment of Volatile Organic Compounds. This permit requires effective treatment, such as air stripping or activated carbon adsorption, for discharges containing volatile organic chemicals. Some pollutant removal will be required in all cases, even when the untreated wastewater could meet the limits listed above. This requirement for wastewater treatment will assure compliance with Wisconsin Water Quality Standards in almost all cases. When more restrictive water quality based effluent limits are needed, such as for direct discharges to very low flow cold water fisheries, outstanding resource waters, or to waters that are classified as public drinking water sources, a site specific WPDES permit shall be individually drafted to regulate the discharge.

e. Total Suspended Solids. Monitoring for TSS shall be required at sites where groundwater is pumped from open pits or trenches. Discharges from wells will not require monitoring for TSS.

f. Grab Sample. A grab sample means a single sample taken at one moment of time or a combination of several smaller samples of equal volume taken in less than a two minute period.

g. Monthly Average Effluent Limitation. A monthly average effluent limit is to be compared with the result of the average of all the analyses performed during the month. Compliance is achieved when the average analysis result is not greater than the monthly average effluent limitation.

E. LIMITATIONS FOR DISCHARGES TO GROUNDWATERS VIA INFILTRATION FROM GROUNDWATER REMEDIAL ACTIONS

During the period beginning on the date of signature and lasting until September 30, 1995, the permittee is authorized to discharge wastewaters that have been treated for pollutant removal to groundwaters of the state. A discharge to groundwaters in Wisconsin includes wastewater infiltration from irrigation, drain fields, ditches, and ponds that may impact water beneath the ground surface.

1. Treatment of Wastewater Pollutants For Discharges to Seepage. Wastewater treatment will be required to minimize the level of substances in the groundwater and to prevent exceedance of the groundwater preventive action limits (PAL) contained in Chapter NR 140, Wisconsin Administrative code, to the extent that it is technically and economically feasible.

2. Where to Sample. Compliance with the NR 140 groundwater quality standards shall be demonstrated either by sampling water from groundwater monitoring wells or by sampling wastewater treatment effluent before discharge. When treatment efficiency reporting is required, the influent sample shall be collected before the wastewater passes through the treatment unit.

3. Cover Letter. Limits and monitoring requirements necessary to assure compliance with Ch. NR 140 groundwater quality standards will be specified by letter on a case by case basis.

4. Preventive Action Limits for Petroleum Product Remediations. The following are the Ch. NR 140 PAL's for petroleum products:

Benzene - 0.067 ug/L	Toluene - 68.6 ug/L
Ethylbenzene - 272 ug/L	Xylene - 124 ug/L
EDB - 0.001 ug/L	

5. Preventive Action Limits for Volatile Organic Compound Remediations. The following are the PAL's for volatile organic compounds listed in NR 140:

1,1-Dichloroethane - 85 ug/L	
1,2-Dichloroethane - 0.05 ug/L	Tetrachloroethylene - 0.1 ug/L
1,1-Dichloroethylene - 0.024 ug/L	1,1,1,-Trichloroethane - 40 ug/L
1,2-Dichloroethylene (cis) - 10 ug/L	1,1,2,-Trichloroethane - 0.06 ug/L
1,2-Dichloroethylene (trans) - 20 ug/L	Trichloroethylene - 0.18 ug/L
Methylene Chloride - 15 ug/L	Vinyl Chloride - 0.0015 ug/L

6. Enforcement Standards. The enforcement standards for the compounds listed above are 10 times the preventive action limit, except for the following compounds that are listed with their enforcement standard: Benzene- 5 ug/L, 1,2-Dichloroethane - 5 ug/L, 1,1-Dichloroethylene - 7 ug/L, Trichloroethylene - 5 ug/L, and Vinyl Chloride - 0.2 ug/L.

E. LIMITS FOR REMEDIAL ACTION DISCHARGES TO SEEPAGE (Cont.)

7. Sample Frequency. The discharge shall be sampled weekly during the first four weeks of discharge, and then sampled every two weeks. After three months, the Department may, by letter, authorize a monthly sampling frequency. Reduced sampling will only be allowed if the pollutant levels in the discharge are always well below permit limits, and there is little chance that influent pollutants may break through the treatment unit and violate permit limits. After reviewing a year of sample data, the Department may reduce the sampling frequency to quarterly.

8. Test Methods. The following test methods shall be used unless specified otherwise by a letter from the Department. EPA methods 602, 624, or 1624 shall be used for determination of benzene, ethylbenzene, toluene and total xylenes including ortho-, meta-, and para-xylene. EPA methods 601 or 624 shall be used for determination of volatile organic compounds.

9. Reporting Results. Compliance with the groundwater standards may be demonstrated by reporting an analytical result less than the PAL or by reporting a result less than the level of detection using the recommended analytical test methods specified above.

10. Flow. Total daily discharge volume records shall be retained for inspection for 3 years and shall be submitted with other monitoring reports as required. The required flow measurement method shall be specified in the cover letter accompanying this permit.

F. REPORTING REQUIREMENTS

1. Monitoring results shall be submitted to the Department by letter on a monthly basis, or during the month following analysis for less frequent monitoring requirements.

2. Records shall be maintained of total daily discharge volumes. Such records shall be retained for inspection by this Department or shall be submitted with other monitoring reports if required.

3. Reports required by this permit shall be signed:

   (a) for a corporation by a principal executive officer of at least the level of Vice President or his/her duly authorized representative having overall responsibility for the operation of the facility for which this permit is issued,

   (b) for a partnership by a general partner, and

   (c) for a sole proprietorship by the proprietor.

4. Discharge monitoring reports, and any other special reporting required by Part I or Part II (the general conditions) of this permit, shall be submitted to the address of the DNR district office printed on the discharge monitoring report, or to:

   Wisconsin Department of Natural Resources
   WPDES Permit Section
   P.O. Box 7921
   Madison, Wisconsin 53707

PART II
GENERAL CONDITIONS

1. Duty to comply

The permittee shall comply with all conditions of the permit. Any permit noncompliance is a violation of the permit and is grounds for enforcement action, denial of coverage under the general permit, or denial of a permit reissuance application.

2. Permit actions

As provided in s. 147.03, Stats., after notice and opportunity for a hearing the permit may be modified or revoked and reissued for cause. If the permittee files a request for an individual permit or a notification of planned changes or anticipated noncompliance, this action by itself does not relieve the permittee of any permit condition.

3. Property rights

The permit does not convey any property rights of any sort, or any exclusive privilege. The permit does not authorize any injury or damage to private property or any invasion of personal rights, or any infringement of federal, state or local laws or regulations.

4. Inspection and entry

The permittee shall allow an authorized representative of the Department, upon the presentation of credentials, to:

a. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records are required under the conditions of the permit;

b. Have access to and copy, at reasonable times, any records that are required under the conditions of the permit;

c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices or operations regulated or required under the permit; and

d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance, any substances or parameters at any location.

5. Recording of results

For each effluent measurement or sample taken, the permittee shall record the following information.

a. The date, exact place, method and time of sampling or measurements;
b. The individual who performed the sampling or measurements;
c. The date the analysis was performed;
d. The individual who performed the analysis;
e. The analytical techniques or methods used; and
f. The results of the analysis.

6. Records retention
The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by the permit, and records of all data used to complete the application for the permit for a period of at least 3 years from the date of the sample, measurement, report or application. The Department may request that this period be extended by issuing a public notice to modify the permit to extend this period.

7. Signatory requirement
All applications, reports or information submitted to the Department shall be signed for a corporation by a responsible corporate officer including a president, secretary, treasurer, vice president or manager; and for a municipality by a ranking elected official; or other person authorized by one of the above and who has responsibility for the overall operation of the facility or activity regulated by the permit. The representative shall certify that the information was gathered and prepared under his or her supervision and based on inquiry of the people directly under his or her supervision that, to the best of his or her knowledge, the information is true, accurate and complete.

8. Compliance schedules
Reports of compliance or noncompliance with interim and final requirements contained in any compliance schedule of the permit shall be submitted in writing within 14 days after the schedule date, except that progress reports shall be submitted in writing on or before each schedule date for each report. Any report of noncompliance shall include the cause of noncompliance, a description of remedial actions taken and an estimate of the effect of the noncompliance on the permittee's ability to meet the remaining schedule dates.

9. Transfers
A permit is not transferable to any person except after notice to the Department. In the event of a transfer of control of a permitted facility, the prospective owner or operator shall notify the Department WPDES permit section in writing. The Department may require the prospective owner to file a new permit application and obtain an individual permit to reflect the requirements of ch. 147, Stats.

10. Proper operation and maintenance
The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control which are installed or used by the permittee to achieve compliance with the conditions of the permit. The wastewater treatment facility shall be under the direct supervision of a state certified operator as required in s. NR 108.06(2). Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training as required in ch. NR 114 and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of the permit.

11. Duty to mitigate
The permittee shall take all reasonable steps to minimize or prevent any adverse impact on the waters of the state resulting from noncompliance with the permit.

12. Duty to provide information
The permittee shall furnish the Department, within a reasonable time, any information which the Department may request to determine whether cause exists for modifying, revoking or reissuing the permit or to determine compliance with the permit. The permittee shall also furnish the Department, upon request, copies of records required to be kept by the permittee.

13. Sampling procedures
Samples and measurements taken for the purpose of monitoring shall be representative of the volume and nature of the monitored discharge and shall be taken at points specified in the permit using sample types specified in the permit and the following procedures:

a. For effluent flow measurement and sample collection - ch. NR 218.
b. For groundwater sample collection and analysis - ch. NR 214.

14. Test procedures
Monitoring shall be conducted according to test procedures listed in ch. NR 219, or any other test procedures specified in the permit.

15. Additional monitoring
If a permittee monitors any pollutant more frequently than required by the permit, using test procedures specified in ch. NR 219, the results of that monitoring shall be recorded and reported in accordance with this chapter. Results of this additional monitoring shall be included in the calculation and reporting of the data submitted in the DMR.

16. Monitoring reports
The monitoring results shall be reported at the intervals specified in the permit. Monitoring results shall be summarized on forms designated by the Department.

Note: The forms used for monitoring reports are DMR Forms 3200-28 and 3200-40.

17. Noncompliance notification

a. The permittee shall report the following types of noncompliance by a telephone call to the Department's district office within 24 hours after becoming aware of the noncompliance.

(1) Any noncompliance which may endanger health or the environment.
(2) Any violation of an effluent limitation resulting from an unanticipated bypass.
(3) Any violation of an effluent limitation resulting from an upset.
(4) Any violation of a maximum daily discharge limitation for those pollutants specifically designated in the permit to be reported within 24 hours.

b. A written report describing the noncompliance reported in condition 17, part a. shall be submitted to the Department's district office within 5 days after the permittee becoming aware of the noncompliance. The Department may waive the written report on a case-by-case basis based on the oral report received within 24 hours. The written report shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times; the steps taken or planned to reduce, eliminate and prevent reoccurrence of the noncompliance; and if the noncompliance has not been corrected, the length of time it is expected to continue.

c. Reports of all noncompliance not required to be reported under condition 8 or condition 17, parts a. and b. shall be submitted with the monitoring reports required under condition 16.. The reports shall contain all the information listed in condition 17, part b.

18. Removed substances

Solids, sludges, filter backwash or other pollutants removed from or resulting from treatment or control of wastewaters or intake waters shall be stored and disposed of in a manner to prevent any pollutant from the materials from entering the waters of the state. Land disposal of treatment plant solids and sludges shall be at a site or operation licensed by the Department under ch. NR 180 or 181, or in accordance with ch. NR 214.

19. Spill reporting

The permittee shall notify the Department in accordance with ch. NR 158, in the event that a spill or accidental release of any material or substance results in the discharge of pollutants to the waters of the state at a rate or concentration greater than the effluent limitations established in the permit, or the spill or accidental release of the material is unregulated in the permit, unless the spill or release of pollutants has been reported to the Department under condition 17.

20. Planned changes

In accordance with ss. 147.02(4)(b) and 147.14(1), Stats., the permittee shall report to the Department any facility expansion, production increase or process modifications which will result in new, different or increased discharges of pollutants. The report shall either be a new permit application or, if the new discharge will not violate the effluent limitations of the permit, a written notice of the new, different or increased discharge. The notice shall contain a description of the new activities, an estimate of the new, different or increased discharge of pollutants and a description of the effect of the new or increased discharge on existing waste treatment facilities. Following receipt of this report, the Department may issue an individual permit to specify and limit any pollutants not previously regulated in the general permit.

Note: The notification should be directed to the Industrial Wastewater Section.

21. Increased discharge of toxic pollutants

a. 'Routine or frequent increase'. The permittee shall notify the Department in writing as soon as it knows or has reason to believe that any activity has occurred or will occur which would result, on a routine or frequent basis, in the discharge of any toxic pollutant which is not limited in the permit, if that discharge exceeds the highest of the following levels.

(1) One hundred micrograms per liter (100 ug/l);

(2) Two hundred micrograms per liter (200 ug/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500 ug/l) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/l) for antimony;

(3) Five times the maximum concentration value reported for that pollutant in the permit application; or

(4) A notification level greater than the level in sections (1), (2), or (3) above, which the Department has included as a special condition of the permit.

b. 'Nonroutine or infrequent increase'. The permittee shall notify the Department in writing as soon as it knows or has reason to believe that any activity has occurred or will occur which would result, on a nonroutine or infrequent basis, in any discharge of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following levels.

(1) Five hundred micrograms per liter (500 ug/l);

(2) One milligram per liter (1 mg/l) for antimony;

(3) Ten times the maximum concentration value reported for that pollutant in the permit application; or

(4) A notification level greater than the level in sections (1), (2), or (3), above which the Department has included as a special condition to the permit.

22. Duty to halt or reduce activity

Upon failure or impairment of treatment facility operation, the permittee shall, to the extent necessary to maintain compliance with its permit, curtail production or wastewater discharges or both until the treatment facility operations are restored or an alternative method of treatment is provided.

23. Bypass

The permittee may bypass waste treatment facilities if this is necessary for the essential maintenance of the facilities and if the bypass does not exceed permit effluent limitations. The permittee may also bypass if the bypass is due to runoff in excess of the 10 year, 24 hour rainfall event and the bypass is designated as a specific discharge point in the WPDES permit. All other bypasses of waste treatment facilities, including diversion of wastewater from land disposal systems to surface waters, are prohibited unless the following conditions are met:

a. The bypass is necessary to prevent loss of life, personal injury or severe property damage;

b. There are no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes or maintenance during normal periods of equipment downtime; and

c. The permittee submitted written notice 10 days before the date of the bypass and the Department's district office wastewater supervisor had approved the bypass in writing prior to its occurrence; or

d. In the event of an unanticipated bypass, the permittee notified the Department verbally within 24 hours and in writing within 5 days of each unanticipated bypass.

24. The department shall withdraw a point source from coverage by a general permit and issue an individual permit upon written request of the discharger.

25. The department may require any point source covered by a general permit to apply for and obtain an individual permit if:

a. The point source is a significant contributor of pollution or if the point source is more appropriately regulated by an individual permit. Any person may submit a written request that the department take action under this section;

b. The point source is not in compliance with the terms and conditions of the general permit;

c. A change occurs in the availability of demonstrated technology or practices for the control or abatement of pollutants from the point source or class of discharger;

d. Effluent limitations or standards are promulgated for a point source or class of point sources covered by the general permit and are different than the conditions contained in the general permit;

e. A water quality management plan containing requirements applicable to the point source is approved.

Section Three

APPENDICES

A Site Photographs

SITE PHOTOGRAPHS

SITE NAME: Thomas Abandoned Service Station

DATE: 5-26-94

TIME: 11:05am

DIRECTION OF PHOTOGRAPH:

Southeast

WEATHER CONDITIONS:

sunny, dry, 60 degrees

PHOTOGRAPHED BY:

Steven Palzkill

DESCRIPTION: The orange cone designates SB-6 located in the boulevard portion of sidewalk.

SITE NAME: Thomas Abandoned Service Station

DATE: 5-26-94

TIME: 11:07 am

DIRECTION OF PHOTOGRAPH:

Due South

WEATHER CONDITIONS:

sunny, dry, 60 degrees

PHOTOGRAPHED BY:

Steven Palzkill

DESCRIPTION: The orange cone designates SB-5 located in the boulevard portion of the sidewalk.

B WDNR Soil Boring Logs and Borehole Abandonment Forms

State of Wisconsin
Department of Natural Resources

Route To:
☐ Solid Waste ☐ Haz. Waste
☐ Emergency Response ☐ Underground Tanks
☐ Wastewater ☐ Water Resources
☐ Other

Soil Boring Log Information
Form 4400-122 7-91

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
STH 77		SB5

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
WTD, Mark Thuot	5/24/94	5/24/94	HSA

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet MSL	Feet MSL	8.0 Inches

Boring Location
State Plane N, E
NW 1/4 of SW 1/4 of Section 27 T 46 N,R 2
Lat ° ' "
Long ° ' "

Local Grid Location (If applicable)
Feet ☐ N ☐ S Feet ☐ E ☐ W

County	DNR County Code	Civil Town/City/ or Village
Iron	26	Montreal

Sample Number	Sample Length (in) Recovered	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
1	.5	3 8 13 21	1–2–3–4	Br. F-C SAND, w/Gravel					21	W				
2	.5	31 50 42 50	5–6–7–8–9–10–11–12						92	W				

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: Mark Thuot

Firm: WTD Environmental Drilling
101 Alderson Schofield, WI 54476-0109
Tel: (715) 359-7090 Fax: (715) 355-5715

This form is authorized by Chapters 144, 147 and 162, Wis. Stats. Completion of this report is mandatory. Penalties: Forfeit not less than $10 nor more than $5,000 for each violation. Fined not less than $10 or more than $100 or imprisoned not less than 30 days, or both for each violation. Each day of continued violation is a separate offense, pursuant to ss 144.99 and 162.06, Wis. Stats.

'State of Wisconsin
Department of Natural Resources

Soil Boring Log Information Supplement
Form 4400-122A 7-91

Boring Number **SB5** Use only as an attachment to Form 4400-122. Page **2** of **2**

Sample									Soil Properties					
Number	Length (in) Recovered	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
				E.O.B. 12.0										

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State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT
Form 3300-5B Rev. 8-89

All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or NR 141, Wis. Admin. Code, whichever is applicable. Also, see instructions on back.

(1) GENERAL INFORMATION

Well/Drillhole/Borehole Location — County: Iron

NW 1/4 of SW 1/4 of Sec. 27 ; T. 46 N; R. 2 [X] E [ ] W

(If applicable) Gov't Lot ______ Grid Number ______

Grid Location ______ ft. [ ] N. [ ] S., ______ ft. [ ] E. [ ] W.

Civil Town Name:

Street Address of Well:

City, Village: Montreal, WI

(2) FACILITY NAME

Original Well Owner (If Known):

Present Well Owner: STH 77

Street or Route:

City, State, Zip Code: Montreal, WI

Facility Well No. and/or Name (If Applicable): SB5

WI Unique Well No.: _ _ _ _ _

Reason For Abandonment: No longer needed

Date of Abandonment: 5/24/94

WELL/DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On (Date): 5/24/94

[ ] Monitoring Well
[ ] Water Well
[X] Drillhole
[ ] Borehole

Construction Report Available? [X] Yes [ ] No

Construction Type:
[X] Drilled [ ] Driven (Sandpoint) [ ] Dug
[ ] Other (Specify) ______

Formation Type:
[X] Unconsolidated Formation [ ] Bedrock

Total Well Depth (ft.) (From groundsurface) ______ Casing Diameter (ins.) ______

Casing Depth (ft.) ______

Was Well Annular Space Grouted? [ ] Yes [ ] No [ ] Unknown
If Yes, To What Depth? ______ Feet

(4) Depth to Water (Feet) 3.0

Pump & Piping Removed? [ ] Yes [ ] No [X] Not Applicable
Liner(s) Removed? [ ] Yes [ ] No [X] Not Applicable
Screen Removed? [ ] Yes [ ] No [X] Not Applicable
Casing Left in Place? [ ] Yes [ ] No
If No, Explain ______

Was Casing Cut Off Below Surface? [ ] Yes [ ] No
Did Sealing Material Rise to Surface? [X] Yes [ ] No
Did Material Settle After 24 Hours? [ ] Yes [X] No
If Yes, Was Hole Retopped? [ ] Yes [ ] No

(5) Required Method of Placing Sealing Material
[X] Conductor Pipe-Gravity [ ] Conductor Pipe-Pumped
[ ] Dump Bailer [ ] Other (Explain) ______

(6) Sealing Materials
[ ] Neat Cement Grout
[ ] Sand-Cement (Concrete) Grout
[ ] Concrete
[ ] Clay-Sand Slurry
[ ] Bentonite-Sand Slurry
[X] Chipped Bentonite

For monitoring wells and monitoring well boreholes only:
[ ] Bentonite Pellets
[ ] Granular Bentonite
[ ] Bentonite - Cement Grout

Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume	Mix Ratio or Mud Weight
Bentonite Chips	Surface	12.0	2 bags	

(7) Comments:

(8) Name of Person or Firm Doing Sealing Work: WTD Environmental Drilling

Signature of Person Doing Work: [signature] Date Signed: 6/3/94

Street or Route: 101 Alderson Street Telephone Number: (715) 359-7090

City, State, Zip Code: Schfield, WI 54476

(9) FOR DNR OR COUNTY USE ONLY

Date Received/Inspected | District/County

Reviewer/Inspector

Follow-up Necessary

DNR/COUNTY

State of Wisconsin
Department of Natural Resources

Route To:
☐ Solid Waste ☐ Haz. Waste
☐ Emergency Response ☐ Underground Tanks
☐ Wastewater ☐ Water Resources
☐ Other

Soil Boring Log Information
Form 4400-122 7-91

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
STH 77		SB6

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
WTD, Mark Thuot	5/24/94	5/24/94	HSA

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet MSL	Feet MSL	8.0 Inches

Boring Location
State Plane N, (E)
NW 1/4 of SW 1/4 of Section 27 T 46 N,R 2
Lat ° ' "
Long ° ' "

Local Grid Location (If applicable)
☐ N ☐ E
Feet ☐ S Feet ☐ W

County	DNR County Code	Civil Town/City/ or Village
Iron	26	Montreal

Sample Number	Sample Length (in) Recovered	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
1	1.5	6 12 23 31	1 2 3 4	F-C SAND					35	M				
2	1.0	3 5 5 17	5 6						10	W				
3	1.5	5 7 5 8	7 8	F-C SAND, w/Gravel					12	M				
			9	Br. Silty CLAY										
4	1.5	17 31 24 50	10 11	Br. F-C SAND, w/Gravel					55	W				
			12											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: Mark Thuot

Firm: WTD Environmental Drilling
101 Alderson Schofield, WI 54476-0109
Tel: (715) 359-7090 Fax: (715) 355-5715

This form is authorized by Chapters 144, 147 and 162, Wis. Stats. Completion of this report is mandatory. Penalties: Forfeit not less than $10 nor more than $5,000 for each violation. Fined not less than $10 or more than $100 or imprisoned not less than 30 days, or both for each violation. Each day of continued violation is a separate offense, pursuant to ss 144.99 and 162.06, Wis. Stats.

Boring Number **SB6** Use only as an attachment to Form 4400-122. Page **2** of **2**

Sample									Soil Properties					
Number	Length (in) Recovered	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
				E.O.B. 12.0										

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT

Form 3300-5B Rev. 8-89

All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or NR 141, Wis. Admin. Code, whichever is applicable. Also, see instructions on back.

(1) GENERAL INFORMATION

Well/Drillhole/Borehole Location

County: Iron

NW 1/4 of SW 1/4 of Sec. 27 : T. 46 N; R. 2 ☒ E ☐ W

(If applicable) _____ Gov't Lot _____ Grid Number

Grid Location _____ ft. ☐ N. ☐ S., _____ ft. ☐ E. ☐ W.

Civil Town Name

Street Address of Well

City, Village: Montreal, WI

(2) FACILITY NAME

Original Well Owner (If Known)

Present Well Owner: STH 77

Street or Route

City, State, Zip Code: Montreal, WI

Facility Well No. and/or Name (If Applicable): SB6

WI Unique Well No. _ _ _ _ _ _

Reason For Abandonment: No longer needed

Date of Abandonment: 5/24/94

WELL/DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On (Date): 5/24/94

☐ Monitoring Well
☐ Water Well
☒ Drillhole
☐ Borehole

Construction Report Available? ☒ Yes ☐ No

Construction Type:
☒ Drilled ☐ Driven (Sandpoint) ☐ Dug
☐ Other (Specify): _____

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) _____ Casing Diameter (ins.) _____
From groundsurface)

Casing Depth ft. _____

Was Well Annular Space Grouted? ☐ Yes ☐ No ☐ Unknown
If Yes, To What Depth? _____ Feet

(4) Depth to Water (Feet): 5.0

Pump & Piping Removed? ☐ Yes ☐ No ☒ Not Applicable
Liner(s) Removed? ☐ Yes ☐ No ☒ Not Applicable
Screen Removed? ☐ Yes ☐ No ☒ Not Applicable
Casing Left in Place? ☐ Yes ☐ No
If No, Explain: _____

Was Casing Cut Off Below Surface? ☐ Yes ☐ No
Did Sealing Material Rise to Surface? ☒ Yes ☐ No
Did Material Settle After 24 Hours? ☐ Yes ☒ No
If Yes, Was Hole Retopped? ☐ Yes ☐ No

(5) Required Method of Placing Sealing Material:
☒ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Dump Bailer ☐ Other (Explain)

(6) Sealing Materials (For monitoring wells and monitoring well boreholes only)
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry
☐ Bentonite-Sand Slurry
☒ Chipped Bentonite
☐ Bentonite Pellets
☐ Granular Bentonite
☐ Bentonite-Cement Grout

Sealing Material Used	From Ft.	To Ft.	No. Units or Sacks Sealant or Volume	Mix Ratio or Mud Weight
Bentonite Chips	Surface	12.0	3 bags	

(7) Comments: _____

(8) Name of Person or Firm Doing Sealing Work: WTD Environmental Drilling

Signature of Person Doing Work: [signature] Date Signed: 6/3/94

Street or Route: 101 Alderson Street

Telephone Number: (715) 359-7090

City, State, Zip Code: Schfield, WI 54476

(9) FOR DNR OR COUNTY USE ONLY

Date Received/Inspected | District/County

Reviewer/Inspector

Follow-up Necessary

DNR/COUNTY

C Analytical Results and Chain of Custody

MID-STATE ASSOCIATES, INC.

Laboratory Services
1230 Lange Ct.
Baraboo, WI 53913
608-356-2760

ANALYTICAL REPORT

ENVIROSCIENCE
RICK KRONK
6474 CITY WEST PARKWAY
EDEN PRAIRIE, MN 55344

Client I.D. No.:1223
Work Order No.:9405000666
Project Name:HURLEY/HWY 77
Project Number:W94001.31
Arrival Temperature:ON ICE
Date Recieved: 05/27/94
Report Date: 06/13/94

Sample I.D. #:67447 **Sample Description:**SB-5 **Date Sampled:**05/24/94

Analyte	Result	Units
Diesel Range Organics- WDNR Modified DRO Sample contains fractions lighter than diesel range organic hydrocarbons.	100	mg/Kg
Extraction Date DRO	05/27/94	
Analysis Date DRO	06/02/94	
Gasoline Range Organics- WDNR Modified GRO	1.7	mg/Kg
Extraction Date GRO	06/01/94	
Analysis Date GRO	06/01/94	
LUST Total Percent Solids	87.5	%

Sample I.D. #:67448 **Sample Description:**SB-6 **Date Sampled:**05/24/94

Analyte	Result	Units
Diesel Range Organics- WDNR Modified DRO Sample contains one peak before the diesel range organic hydrocarbon window.	< 5.7	mg/Kg
Extraction Date DRO	05/27/94	
Analysis Date DRO	06/02/94	
Gasoline Range Organics- WDNR Modified GRO	< 1.1	mg/Kg
Extraction Date GRO	06/01/94	
Analysis Date GRO	06/02/94	
LUST Total Percent Solids	87.1	%

Sample I.D. #:67449 **Sample Description:**SB-7 **Date Sampled:**05/25/94

Analyte	Result	Units
Diesel Range Organics- WDNR Modified DRO	36	mg/Kg
Extraction Date DRO	05/27/94	
Analysis Date DRO	06/02/94	
Gasoline Range Organics- WDNR Modified GRO	< 1.1	mg/Kg
Extraction Date GRO	06/01/94	
Analysis Date GRO	06/02/94	
LUST Total Percent Solids	88.8	%

Submitted By:

Wisconsin DNR Laboratory Certification Number: 157066030
DHSS Certification Number: MW0289

MID-STATE ASSOCIATES, INC.

Laboratory Services
1230 Lange Ct.
Baraboo, WI 53913
608-356-2760

ANALYTICAL REPORT

ENVIROSCIENCE
RICK KRONK
6474 CITY WEST PARKWAY
EDEN PRAIRIE, MN 55344

Client I.D. No.:1223
Work Order No.:9405000666
Project Name:HURLEY/HWY 77
Project Number:W94001.31
Arrival Temperature:ON ICE
Date Recieved: 05/27/94
Report Date: 06/13/94

Sample I.D. #:67450 **Sample Description:**SB-8 **Date Sampled:**05/25/94

Analyte	Result	Units
Diesel Range Organics- WDNR Modified DRO Sample contains two peaks before the diesel range organic hydrocabon window.	< 5.5	mg/Kg
Extraction Date DRO	05/27/94	
Analysis Date DRO	06/02/94	
Gasoline Range Organics- WDNR Modified GRO	< 1.1	mg/Kg
Extraction Date GRO	06/01/94	
Analysis Date GRO	06/02/94	
LUST Total Percent Solids	90.8	%

Sample I.D. #:67451 **Sample Description:**SB-6 DUP **Date Sampled:**05/24/94

Analyte	Result	Units
Diesel Range Organics- WDNR Mod ed DRO	9.4	mg/Kg
Extraction Date DRO	05/27/94	
Analysis Date DRO	06/02/94	
Gasoline Range Organics- WDNR Modified GRO	< 1.1	mg/Kg
Extraction Date GRO	06/01/94	
Analysis Date GRO	06/02/94	
LUST Total Percent Solids	87.1	%

Sample I.D. #:67452 **Sample Description:**SB-1 **Date Sampled:**05/24/94

Analyte	Result	Units
Methyl t-Butyl Ether	< 1.0	ug/L
Benzene	< 1.0	ug/L
Toluene	< 1.0	ug/L
Ethylbenzene	< 1.0	ug/L
m & p- Xylene	< 1.0	ug/L
o-Xylene	< 1.0	ug/L
1,3,5-Trimethylbenzene	< 1.0	ug/L
1,2,4-Trimethylbenzene	< 1.0	ug/L
Analysis Date PVOC	05/31/94	

Submitted By:

Wisconsin DNR Laboratory Certification Number: 157066030
DHSS Certification Number: MW0289

MID-STATE ASSOCIATES, INC.

Laboratory Services
1230 Lange Ct.
Baraboo, WI 53913
608-356-2760

ANALYTICAL REPORT

ENVIROSCIENCE
RICK KRONK
6474 CITY WEST PARKWAY
EDEN PRAIRIE, MN 55344

Client I.D. No.:1223
Work Order No.:9405000666
Project Name:HURLEY/HWY 77
Project Number:W94001.31
Arrival Temperature:ON ICE
Date Recieved: 05/27/94
Report Date: 06/13/94

Sample I.D. #:67453 **Sample Description:**SB-3 **Date Sampled:**05/25/94

Analyte	Result	Units
Methyl t-Butyl Ether	<1.0	ug/L
Benzene	<1.0	ug/L
Toluene	<1.0	ug/L
Ethylbenzene	<1.0	ug/L
m & p- Xylene	<1.0	ug/L
o-Xylene	<1.0	ug/L
1,3,5-Trimethylbenzene	<1.0	ug/L
1,2,4-Trimethylbenzene	<1.0	ug/L
Analysis Date PVOC	05/31/94	

Sample I.D. #:67454 **Sample Description:**SB-6 **Date Sampled:**05/25/94

Analyte	Result	Units
Methyl t-Butyl Ether	<1.0	ug/L
Benzene	<1.0	ug/L
Toluene	<1.0	ug/L
Ethylbenzene	<1.0	ug/L
m & p- Xylene	<1.0	ug/L
o-Xylene	<1.0	ug/L
1,3,5-Trimethylbenzene	<1.0	ug/L
1,2,4-Trimethylbenzene	<1.0	ug/L
Analysis Date PVOC	05/31/94	

Sample I.D. #:67455 **Sample Description:**SB-6 DUP **Date Sampled:**05/25/94

Analyte	Result	Units
Methyl t-Butyl Ether	<1.0	ug/L
Benzene	<1.0	ug/L
Toluene	<1.0	ug/L
Ethylbenzene	<1.0	ug/L
m & p- Xylene	<1.0	ug/L
o-Xylene	<1.0	ug/L
1,3,5-Trimethylbenzene	<1.0	ug/L
1,2,4-Trimethylbenzene	<1.0	ug/L
Analysis Date PVOC	05/31/94	

Submitted By: [signature]

Wisconsin DNR Laboratory Certification Number: 157066030
DHSS Certification Number: MW0289

MID-STATE ASSOCIATES, INC.

Laboratory Services
1230 Lange Ct.
Baraboo, WI 53913
608-356-2760

ANALYTICAL REPORT

ENVIROSCIENCE
RICK KRONK
6474 CITY WEST PARKWAY
EDEN PRAIRIE, MN 55344

Client I.D. No.:1223
Work Order No.:9405000666
Project Name:HURLEY/HWY 77
Project Number:W94001.31
Arrival Temperature:ON ICE
Date Recieved: 05/27/94
Report Date: 06/13/94

Sample I.D. #:67480 **Sample Description:**TRIP BLANK **Date Sampled:**05/25/94

Analyte	Result	Units
Methyl t-Butyl Ether	<1.0	ug/L
Benzene	<1.0	ug/L
Toluene	<1.0	ug/L
Ethylbenzene	<1.0	ug/L
m & p- Xylene	<1.0	ug/L
o-Xylene	<1.0	ug/L
1,3,5-Trimethylbenzene	<1.0	ug/L
1,2,4-Trimethylbenzene	<1.0	ug/L
Analysis Date PVOC	05/31/94	

Sample pH was 6.5. Air bubble present in sample vial (6 mm diameter).

Submitted By:

Wisconsin DNR Laboratory Certification Number: 157066030
DHSS Certification Number: MW0289

MID-STATE ASSOCIATES, INC.

1230 Lange Court
Baraboo, WI 53913
(608) 356-2760
FAX: (608) 356-2766

Chain of Custody:

MID-STATE ASSOCIATES, INC.
1-800-228-3012

Is this a PECFA project? (Please indicate "yes" or "no") _____

SAMPLE COLLECTOR: S. Palzkill	COMPANY: EnviroScience	TELEPHONE NUMBER (INCLUDE AREA CODE): 715-835-9311
PROJECT NUMBER: W9400l.31	PROJECT NAME: Hurley / Hwy 77	

I HEREBY CERTIFY THAT I RECEIVED, PROPERLY HANDLED, AND DISPOSED OF THESE SAMPLES AS NOTED BELOW:

INVOICE ADDRESS (MUST BE COMPLETED): Suite 20 54701 1101 West Clairemont Av Eau Claire, WI	REPORT ADDRESS (MUST BE COMPLETED): 1101 West Clairemont Ave Suite 20 Eau Claire WI 54701		
DATE & TIME OF RELINQUISHMENT: 5-26-94 11:00 AM	RELINQUISHED BY (SIGNATURE): Steve Palzkill	RECEIVED BY (SIGNATURE):	DATE/TIME OF RECEPTION:
DATE & TIME OF RELINQUISHMENT:	RELINQUISHED BY (SIGNATURE):	RECEIVED BY LABORATORY (SIGNATURE):	DATE/TIME OF RECEPTION: 5/27 11:00

FIELD ID NUMBER	DATE COLLECTED	TIME COLLECTED	SAMPLE TYPE	SAMPLE DEVICE	PRESERV. TYPE	LOCATION/DESCRIPTION	TYPE OF ANALYSIS REQUIRED (PLEASE CIRCLE)	LAB USE ONLY Pres. w/MEOH? "X" if yes	NO./TYPE OF CONTAINERS	LAB I.D.
SB-1	5-24-94	10:16 AM	Soil	Grab	GRO-Methanol	Soil boring #1 At Post office 7.5-9.5	(DRO) (GRO) GRO/PVOC PVOC Pb Cd %SOLIDS FLASHPOINT VOC-LUST VOC-8021 SIEVE #200 SIEVE PAINT FILTER PAH		4-60 ml Amber	67443
SB-2	5-24-94	11:16 Am	Soil	Grab	GRO-Methanol	SB-2 at Post office 7.5-9.5	(DRO) (GRO) GRO/PVOC PVOC Pb Cd %SOLIDS FLASHPOINT VOC-LUST VOC-8021 SIEVE #200 SIEVE PAINT FILTER PAH		4-60 ml Amber	67444
SB-3	5-24-94	2:30pm	Soil	Grab	GRO Methanol	SB-3 at City Hall 8.0-10.0	(DRO) (GRO) GRO/PVOC PVOC Pb Cd %SOLIDS FLASHPOINT VOC-LUST VOC-8021 SIEVE #200 SIEVE PAINT FILTER PAH		4-60 ml Amber	67445
SB-4	5-24-94	3:08pm	Soil	Grab	GRO Methanol	SB-4 at City Hall 7.5-9.5	(DRO) (GRO) GRO/PVOC PVOC Pb Cd %SOLIDS FLASHPOINT VOC-LUST VOC-8021 SIEVE #200 SIEVE PAINT FILTER PAH		4-60 ml Amber	67446
SB-5	5-24-94	4.00pm	Soil	Grab	GRO Methanol	SB-5 at Abandoned Gas Station 2.5-4.5	(DRO) (GRO) GRO/PVOC PVOC Pb Cd %SOLIDS FLASHPOINT VOC-LUST VOC-8021 SIEVE #200 SIEVE PAINT FILTER PAH		4-60 ml Amber	67447
SB-6	5-24-94	4:30pm	Soil	Grab	GRO Methanol	SB-6 at Abandoned Gas Station 5.0-7.0	(DRO) (GRO) GRO/PVOC PVOC Pb Cd %SOLIDS FLASHPOINT VOC-LUST VOC-8021 SIEVE #200 SIEVE PAINT FILTER PAH		4-60 ml Amber	67448
SB-7	5-25-94	11:15 Am	Soil	Grab	GRO Methanol	SB-7 at Kopacz Garage 2.5-4.5	(DRO) (GRO) GRO/PVOC PVOC Pb Cd %SOLIDS FLASHPOINT VOC-LUST VOC-8021 SIEVE #200 SIEVE PAINT FILTER PAH		3-60 ml Amber	67449
SB-8	5-25-94	10:17 AM	Soil	Grab	GRO Methanol	SB-8 at Kopacz Garage 5.0-7.0	(DRO) (GRO) GRO/PVOC PVOC Pb Cd %SOLIDS FLASHPOINT VOC-LUST VOC-8021 SIEVE #200 SIEVE PAINT FILTER PAH		4-60 ml Amber	67450
SB-6 Dup	5-24-94	4:30	Soil	Grab	GRO Methanol	SB-6 at Abandoned Gas Station 5.0-7.0 Duplicate	(DRO) (GRO) GRO/PVOC PVOC Pb Cd %SOLIDS FLASHPOINT VOC-LUST VOC-8021 SIEVE #200 SIEVE PAINT FILTER PAH		4-60 ml Amber	67451
							DRO GRO GRO/PVOC PVOC Pb Cd %SOLIDS FLASHPOINT VOC-LUST VOC-8021 SIEVE #200 SIEVE PAINT FILTER PAH			

SAMPLE CONDITIONS/COMMENTS:

[illegible]

CHECKED

ARRIVAL TEMPERATURE

[illegible] DEG. C

MID-STATE ASSOCIATES, INC.

Chain of Custody:
MID-STATE ASSOCIATES, INC.
1-800-228-3012

1230 Lange Court
Baraboo, WI 53913
(608) 356-2760
FAX: (608) 356-2766

Is this a PECFA project? (Please indicate "yes" or "no") [circled: "no"]

SAMPLE COLLECTOR: S. Patzkill | COMPANY: Enviroscience | TELEPHONE NUMBER (INCLUDE AREA CODE): 715-835-9311

PROJECT NUMBER: W94061.31 | PROJECT NAME: Hurley / Hwy 77

I HEREBY CERTIFY THAT I RECEIVED, PROPERLY HANDLED, AND DISPOSED OF THESE SAMPLES AS NOTED BELOW:

INVOICE ADDRESS (MUST BE COMPLETED): 1101 West Clairemont Ave Suite 20 Eau Claire, WI 54701

REPORT ADDRESS (MUST BE COMPLETED): 1101 west Clairemont Ave Suite 20 Eau Claire, WI 54701

DATE & TIME OF RELINQUISHMENT:	RELINQUISHED BY (SIGNATURE):	RECEIVED BY (SIGNATURE):	DATE/TIME OF RECEPTION:
5-26-94 11:00 AM	Steve Patzkill		
DATE & TIME OF RELINQUISHMENT:	RELINQUISHED BY (SIGNATURE):	RECEIVED BY LABORATORY (SIGNATURE):	DATE/TIME OF RECEPTION:
		[signature]	5/27 11:00

FIELD ID NUMBER	DATE COLLECTED	TIME COLLECTED	SAMPLE TYPE	SAMPLE DEVICE	PRESERV. TYPE	LOCATION/DESCRIPTION	TYPE OF ANALYSIS REQUIRED (PLEASE CIRCLE)	LAB USE ONLY Pres. w/ MEOH? "X" if yes	NO./TYPE OF CONTAINERS	LAB I.D.
SB-1	5-24-94	5:30pm	Water	Grab	HCL	Temp. well located at SB-1, Post office	DRO GRO GRO/PVOC PVOC (circled) Pb Cd %SOLIDS FLASHPOINT VOC-LUST VOC-8021 SIEVE #200SIEVE PAINT FILTER PAH	Small bubble in 1 of 3	3-40 ml vial	67452
SB-3	5-25-94	12:30pm	water	Grab	HCL	Temp. well at SB-3 City Hall	DRO GRO GRO/PVOC PVOC (circled) Pb Cd %SOLIDS FLASHPOINT VOC-LUST VOC-8021 SIEVE #200SIEVE PAINT FILTER PAH		3-40 ml vial	67453
SB-6	5-25-94	11:55AM	water	Grab	HCL	Temp well at SB-6 Abandoned Gas Station	DRO GRO GRO/PVOC PVOC (circled) Pb Cd %SOLIDS FLASHPOINT VOC-LUST VOC-8021 SIEVE #200SIEVE PAINT FILTER PAH		3-40 ml vial	67454
SB-6 Dup	5-25-94	12:14pm	water	Grab	HCL	Temp well at SB-6 Abandoned Gas Station	DRO GRO GRO/PVOC PVOC (circled) Pb Cd %SOLIDS FLASHPOINT VOC-LUST VOC-8021 SIEVE #200SIEVE PAINT FILTER PAH		3-40 ml vial	67455
						TRIP BLANK	DRO GRO GRO/PVOC PVOC (circled) Pb Cd %SOLIDS FLASHPOINT VOC-LUST VOC-8021 SIEVE #200SIEVE PAINT FILTER PAH			67480
							DRO GRO GRO/PVOC PVOC Pb Cd %SOLIDS FLASHPOINT VOC-LUST VOC-8021 SIEVE #200SIEVE PAINT FILTER PAH			
							DRO GRO GRO/PVOC PVOC Pb Cd %SOLIDS FLASHPOINT VOC-LUST VOC-8021 SIEVE #200SIEVE PAINT FILTER PAH			
							DRO GRO GRO/PVOC PVOC Pb Cd %SOLIDS FLASHPOINT VOC-LUST VOC-8021 SIEVE #200SIEVE PAINT FILTER PAH			
							DRO GRO GRO/PVOC PVOC Pb Cd %SOLIDS FLASHPOINT VOC-LUST VOC-8021 SIEVE #200SIEVE PAINT FILTER PAH			
							DRO GRO GRO/PVOC PVOC Pb Cd %SOLIDS FLASHPOINT VOC-LUST VOC-8021 SIEVE #200SIEVE PAINT FILTER PAH			

SAMPLE CONDITIONS/COMMENTS:

[illegible]

ARRIVAL TEMPERATURE: On Ice DEG. C

D Standard Sampling and Analytical Procedures

D-1 Drilling and Soil Sampling

Drilling operations were performed by WTD Environmental Drilling, Schofield, Wisconsin, utilizing a truck mounted drill rig.

Split-barrel soil sampling in the standard penetration soil borings was performed using hollow-stem auger techniques in accordance with ASTM:D1586-84. Using this procedure, a 2" O.D. split barrel sampler was driven into the soil by a 140 lb. weight falling 30". Laboratory analysis samples were removed from the split-spoons using clean, stainless steel utensils and placed in laboratory supplied jars. After each sample was removed, the split-spoon was washed in an Alconox™ detergent and tap water solution, then rinsed with distilled water.

D-2 Soil Classification

As the samples were obtained in the field, they were visually and manually classified by the crew chief and site geologist in accordance with ASTM-D2488-84. Representative portions of the samples were then returned to the office for further examination and for verification of the field classification. Logs of the standard penetration borings were prepared indicating the depth and identification of the various strata, water level information and pertinent information regarding the method of maintaining and advancing the drill holes (Appendix B).

collected in 40 ml, laboratory-cleaned, glass purge-and-trap vials with Teflon-lined, septum-sealed caps containing HCl as a preservative.

D-6 Laboratory Analysis

All sample containers were placed in an ice-filled cooler immediately after collection and transported to Mid-State Associates, Inc., in Baraboo, Wisconsin, in the cooler. The samples were accompanied by proper chain-of-custody forms. Gasoline Range Organics (GRO) was performed by utilizing the Wisconsin GRO method. Diesel Range Organics (DRO) was performed by utilizing the Wisconsin DRO method. Petroleum Volatile Organic Compounds (PVOC) was performed utilizing gas chromatography according to SW-846, Method 8020.

D -7 Borehole Abandonment and Soil Cuttings Disposal

The temporary monitoring well was dismantled and both soil borings were completely backfilled with bentonite. A WDNR borehole abandonment form for each borehole is included with this report.

From field screening and olfactory perception there was no indication of the presence of petroleum constituents in the soil cuttings from either borehole. For this reason all soil cuttings were spread over the grassed area of the boulevard.

SOIL SAMPLING PROCEDURES

Equipment

The following is a list of equipment that was utilized for collecting soil samples:

Soil Sampling Equipment

- Measuring stick
- Appropriate sample containers
- Distilled water
- Alconox®
- Brushes
- Field log book, labels and required forms
- Wash tubs
- Coolers
- Ice
- Packing Material
- Garbage bags
- Disposable gloves

Other Equipment

- 150 ft. tape
- Camera and film

Soil Sampling Procedure

Soil borings were advanced utilizing a truck or track-mounted rotary drill rig using a hollow stem auger. Samples were collected at 2.5 foot intervals utilizing a split-spoon sampling device (sampler) in accordance with DNR PUBL SW-157-92.

Drill cuttings that showed impacts were containerized in 55-gallon drums and sealed. These materials will be properly treated and disposed of offsite or incorporated into the treatment at the time of remediation.

Drilling and Sampling Methods

Soil sampling was performed using hollow-stem auger techniques in accordance with ASTM:D1586-84. As the samples were obtained in the field, they were visually and manually classified by the crew chief in accordance with ASTM:D2488-84. Representative portions of the samples were then returned to the laboratory for further examination and for verification of the field classification. Logs of the borings were prepared indicating the depth and identification of the various strata, screening data, blow counts, water level information, and pertinent information regarding the method of maintaining and advancing the drill holes. WDNR Soil Boring Log Information Forms (Form 4400) and Borehole Abandonment Forms (Form 3300-5B) were completed for each borehole and are located in Appendix B. The boreholes were abandoned properly according to NR 141 Wis. Adm. Code.

Field Documentation

Documentation prepared in the field included hNu log, chain-of-custody forms and a field log book.

All soil samples were described in the field log book. The description included, but was not limited to, USCS classification and ASTM.D2488-84 nomenclature. Enviroscience ensured that the sampling methods and equipment used were capable of obtaining adequate volume for all required analytical parameters.

Field observations were recorded in a field log book in sufficient detail by the field geologist. This was done so that decision logic could be traced back when reviewed, or data comparison could be accomplished once off-site analytical results became available. Indelible ink was used for all entries. A brief listing of pertinent data that was recorded in the field log book is as follows, but was not limited to:

1) Date/time
2) Sample location
3) Weather information
4) Instrument calibration data
5) Brief description of sample matrix and any visual observations
6) Number of samples obtained, ID number, number and type of containers used, preservation methods used
7) Any comments, remarks about field activities
8) Sampler's name and initials

Laboratory Analytical Methodology

Soil samples were sent to the laboratory for analysis of Diesel Range Organics (DRO) and Petroleum Volatile Organic Compounds (PVOCs).

Quality Assurance/Quality Control

The samples were transferred under chain-of-custody procedures to a qualified laboratory.

One method blank were analyzed with each sampling round. A temperature blank was also included with each cooler containing samples.

Investigative Waste

All soil cuttings were field screened on site and those that were impacted were containerized and left on site.

PACE INCORPORATED
ENVIRONMENTAL LABORATORIES

REPORT OF LABORATORY ANALYSIS

Enviroscience, Inc.
2224 Heimstead Rd.
Eau Claire, WI 54703

May 16, 1995
PACE Project Number: 950505530

Attn: Mr. Bob Powers

Client Reference: Thomas

Parameter	Units	PRL			
PACE Sample Number:			10 0123064	10 0123072	10 0123080
Date Collected:			05/02/95	05/02/95	05/03/95
Time Collected:			18:10	18:15	08:20
Date Received:			05/05/95	05/05/95	05/05/95
			SB-1A	SB-1A	SB-2A
			2.5-4.5	5-7	5-7'
INORGANIC ANALYSIS					
INDIVIDUAL PARAMETERS					
Moisture content	%	0.1	7.7	5.4	10.4
ORGANIC ANALYSIS					
DIESEL RANGE ORGANICS-MOD. 8015					
Date Analyzed			12MAY95 RR	12MAY95 RR	14MAY95 RR
Date Extracted			05/09/95	05/09/95	05/09/95
Diesel Range Organic Compounds	mg/kg	7.6	-	-	ND HB
Diesel Range Organic Compounds	mg/kg	7.8	13 HB	410 HB	-
Pentacosane (Surrogate Std.)	%		79	89	56
Elapse Time, Receipt to Solvent Addition	Minutes	10	1095	1095	1095
PVOC/GRO IN SOIL-METHODS 8020/MOD. 8015					
Date Analyzed			-	10MAY95 E	10MAY95 E
Benzene	mg/kg	0.10	-	ND	ND
Toluene	mg/kg	0.10	-	ND	ND
Ethyl benzene	mg/kg	0.10	-	ND	ND
Xylene	mg/kg	0.20	-	ND	ND
1,3,5-Trimethylbenzene	mg/kg	0.10	-	ND	ND
1,2,4-Trimethylbenzene	mg/kg	0.10	-	ND	ND
Methyl tert-butyl ether	mg/kg	0.40	-	ND	ND
Gasoline Range Organic Compounds	mg/kg	5.0	-	ND HB	ND
Fluorobenzene (Surrogate)	%		-	105	105

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REPORT OF LABORATORY ANALYSIS

May 16, 1995
PACE Project Number: 950505530

Client Reference: Thomas

Parameter	Units	PRL	10 0123099 05/03/95 08:30 05/05/95 SB-2A 7.5-9.5'	10 0123102 05/03/95 13:20 05/05/95 SB-3A 5-7'	10 0123110 05/03/95 13:40 05/05/95 SB-3A 10-12'
PACE Sample Number:					
Date Collected:					
Time Collected:					
Date Received:					
Client Sample ID:					
INORGANIC ANALYSIS					
INDIVIDUAL PARAMETERS					
Moisture content	%	0.1	10.0	11.6	15.6
ORGANIC ANALYSIS					
DIESEL RANGE ORGANICS-MOD. 8015					
Date Analyzed			13MAY95 RR	14MAY95 RR	14MAY95 RR
Date Extracted			05/10/95	05/10/95	05/10/95
Diesel Range Organic Compounds	mg/kg	7.8	ND	13 HB	-
Diesel Range Organic Compounds	mg/kg	8.3	-	-	ND
Pentacosane (Surrogate Std.)	%		84	56	70
Elapse Time, Receipt to Solvent Addition	Minutes	10	1095	1095	1095
PVOC/GRO IN SOIL-METHODS 8020/MOD. 8015					
Date Analyzed			-	10MAY95 E	-
Benzene	mg/kg	0.11	-	ND	-
Toluene	mg/kg	0.11	-	ND	-
Ethyl benzene	mg/kg	0.11	-	ND	-
Xylene	mg/kg	0.21	-	ND	-
1,3,5-Trimethylbenzene	mg/kg	0.11	-	ND	-
1,2,4-Trimethylbenzene	mg/kg	0.11	-	ND	-
Methyl tert-butyl ether	mg/kg	0.43	-	ND	-
Gasoline Range Organic Compounds	mg/kg	5.4	-	ND	-
Fluorobenzene (Surrogate)	%		-	108	-

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REPORT OF LABORATORY ANALYSIS

Mr. Bob Powers
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May 16, 1995
PACE Project Number: 950505530

Client Reference: Thomas

Parameter	Units	PRL	10 0123129 05/03/95 14:35 05/05/95 SB-4A 2.5-4.5'	10 0123137 05/03/95 14:45 05/05/95 SB-4A 5-7'	10 0123145 05/03/95 09:45 05/05/95 SB-5A 5-7'
PACE Sample Number:					
Date Collected:					
Time Collected:					
Date Received:					
Client Sample ID:					
INORGANIC ANALYSIS					
INDIVIDUAL PARAMETERS					
Moisture content	%	0.1	12.2	10.8	13.0
ORGANIC ANALYSIS					
DIESEL RANGE ORGANICS-MOD. 8015					
Date Analyzed			14MAY95 RR	14MAY95 RR	14MAY95 RR
Date Extracted			05/10/95	05/10/95	05/10/95
Diesel Range Organic Compounds	mg/kg	10	-	-	ND
Diesel Range Organic Compounds	mg/kg	7.4	ND	-	-
Diesel Range Organic Compounds	mg/kg	8.3	-	ND HB	-
Pentacosane (Surrogate Std.)	%		98	70	86
Elapse Time, Receipt to Solvent Addition	Minutes	10	1095	1095	1095
PVOC/GRO IN SOIL-METHODS 8020/MOD. 8015					
Date Analyzed			-	10MAY95 E	10MAY95 E
Benzene	mg/kg	0.10	-	ND	ND
Toluene	mg/kg	0.10	-	ND	ND
Ethyl benzene	mg/kg	0.10	-	ND	ND
Xylene	mg/kg	0.20	-	ND	ND
1,3,5-Trimethylbenzene	mg/kg	0.10	-	ND	ND
1,2,4-Trimethylbenzene	mg/kg	0.10	-	ND	ND
Methyl tert-butyl ether	mg/kg	0.40	-	ND	ND
Gasoline Range Organic Compounds	mg/kg	5.0	-	ND	ND
Fluorobenzene (Surrogate)	%		-	95.3	100

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May 16, 1995
PACE Project Number: 950505530

Client Reference: Thomas

PACE Sample Number:			10 0123153
Date Collected:			05/03/95
Time Collected:			10:05
Date Received:			05/05/95
Client Sample ID:			SB-5A
Parameter	Units	PRL	10-12'
INORGANIC ANALYSIS			
INDIVIDUAL PARAMETERS			
Moisture content	%	0.1	12.2
ORGANIC ANALYSIS			
DIESEL RANGE ORGANICS-MOD. 8015			
Date Analyzed			14MAY95 RR
Date Extracted			05/10/95
Diesel Range Organic Compounds	mg/kg	10	ND
Pentacosane (Surrogate Std.)	%		72
Elapse Time, Receipt to Solvent Addition	Minutes	10	1095
PVOC/GRO IN SOIL-METHODS 8020/MOD. 8015			
Date Analyzed			10MAY95 E
Benzene	mg/kg	0.10	ND
Toluene	mg/kg	0.10	ND
Ethyl benzene	mg/kg	0.10	ND
Xylene	mg/kg	0.20	ND
1,3,5-Trimethylbenzene	mg/kg	0.10	ND
1,2,4-Trimethylbenzene	mg/kg	0.10	ND
Methyl tert-butyl ether	mg/kg	0.40	ND
Gasoline Range Organic Compounds	mg/kg	5.0	ND
Fluorobenzene (Surrogate)	%		107

Sample results are reported on a dry weight basis.

The surrogate recovery for DRO analysis of sample "SB-3A, 5-7'" was below PACE acceptance criteria of 65%. Spike recovery for the laboratory control sample and sample duplicate were within acceptance criteria and the low surrogate recovery is attributed to matrix affects.

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REPORT OF LABORATORY ANALYSIS

May 16, 1995
PACE Project Number: 950505530

Client Reference: Thomas

These data have been reviewed and are approved for release.

Paul D. Ernst
Project Manager

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REPORT OF LABORATORY ANALYSIS

FOOTNOTES
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May 16, 1995
PACE Project Number: 950505530

Client Reference: Thomas

HB	High boiling point hydrocarbons are present in sample.
ND	Not detected at or above the PRL.
PRL	PACE Reporting Limit

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REPORT OF LABORATORY ANALYSIS

Mr. Bob Powers
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QUALITY CONTROL DATA

May 16, 1995
PACE Project Number: 950505530

Client Reference: Thomas

Moisture content
Batch: 10 68165
Samples: 10 0123064, 10 0123072, 10 0123080, 10 0123099, 10 0123102
10 0123110, 10 0123129, 10 0123137, 10 0123145, 10 0123153

METHOD BLANK AND SAMPLE DUPLICATE:

Parameter	Units	PRL	Method Blank	100123099 SB-2A 7.5-9.5'	Duplicate of 10 0123099	RPD
Moisture content	%	0.1	ND	10.0	10.2	2%

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REPORT OF LABORATORY ANALYSIS

QUALITY CONTROL DATA

May 16, 1995
PACE Project Number: 950505530

Client Reference: Thomas

DIESEL RANGE ORGANICS-MOD. 8015
Batch: 10 68439
Samples: 10 0123064, 10 0123072, 10 0123080

METHOD BLANK:

Parameter	Units	PRL	Method Blank
Date Analyzed			11MAY95
Diesel Range Organic Compounds	mg/kg	10	ND
Pentacosane (Surrogate Std.)	%		102

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

Parameter	Units	PRL	Reference Value	Recv	Dupl Recv	RPD
Diesel Range Organic Compounds	mg/kg	10	200	80%	85%	6%

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Client Reference: Thomas

DIESEL RANGE ORGANICS-MOD. 8015
Batch: 10 68446
Samples: 10 0123099, 10 0123102, 10 0123110, 10 0123129, 10 0123137
10 0123145, 10 0123153

METHOD BLANK:

Parameter	Units	PRL	Method Blank
Date Analyzed			13MAY95
Diesel Range Organic Compounds	mg/kg	10	ND
Pentacosane (Surrogate Std.)	%		71

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

Parameter	Units	PRL	Reference Value	Recv	Dupl Recv	RPD
Diesel Range Organic Compounds	mg/kg	10	200	100%	80%	22%

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

May 16, 1995
PACE Project Number: 950505530

Client Reference: Thomas

PVOC/GRO IN SOIL-8020/MOD. 8015
Batch: 10 68328
Samples: 10 0123072, 10 0123080, 10 0123102, 10 0123137, 10 0123145
10 0123153

METHOD BLANK:

Parameter	Units	PRL	Method Blank
Date Analyzed			10MAY95
Benzene	mg/kg	0.10	ND
Toluene	mg/kg	0.10	ND
Ethyl benzene	mg/kg	0.10	ND
Xylene	mg/kg	0.20	ND
1,3,5-Trimethylbenzene	mg/kg	0.10	ND
1,2,4-Trimethylbenzene	mg/kg	0.10	ND
Methyl tert-butyl ether	mg/kg	0.40	ND
Gasoline Range Organic Compounds	mg/kg	5.0	ND
Fluorobenzene (Surrogate)	%		111

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

Parameter	Units	PRL	Reference Value	Recv	Dupl Recv	RPD
Benzene	mg/kg	0.10	10	104%	104%	0%
Toluene	mg/kg	0.10	10	107%	107%	0%
Ethyl benzene	mg/kg	0.10	10	108%	107%	1%
Xylene	mg/kg	0.20	30	107%	109%	2%
1,3,5-Trimethylbenzene	mg/kg	0.10	10	109%	109%	0%
1,2,4-Trimethylbenzene	mg/kg	0.10	10	106%	106%	0%

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REPORT OF LABORATORY ANALYSIS

FOOTNOTES
for pages 7 through 10

May 16, 1995
PACE Project Number: 950505530

Client Reference: Thomas

ND	Not detected at or above the PRL.
PRL	PACE Reporting Limit
RPD	Relative Percent Difference

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207692

CHAIN-OF-CUSTODY RECORD
Analytical Request

Client: Enviroscience
Address: 2224 Heimstead Rd
Eau Claire, WI 54703
Phone: 715 835 9311

Report To: Enviroscience
Bill To: Enviroscience
P.O. # / Billing Reference
Project Name / No.: Thomas

Pace Client No.: 015702
Pace Project Manager: PDE
Pace Project No.: 950505-530
*Requested Due Date: 5-15-95

Sampled By (PRINT): Bob Powers
Bob Powers — Sampler Signature
5-3-95 (SB-1A on 5-2-95) — Date Sampled

ITEM NO.	SAMPLE DESCRIPTION	TIME	MATRIX	PACE NO.	NO. OF CONTAINERS	PRESERVATIVES: UNPRESERVED	H_2SO_4	HNO_3	VOA	Hcl MeOH	ANALYSES REQUEST: DRO	% moisture	PVOC	REMARKS
1	Thomas SB-1A 2.5-4.5'	6:40 pm	Soil	12306.4	2	2					1	1		
2	SB-1A 5-7'	6:15 pm	Soil	12307.2	4	2				2	1	1	2	
3	SB-2A 5-7'	8:20 am	"	12308.0	4	2				2	1	1	2	
4	SB-2A 7.5-9.5'	8:30 am	"	12309.9	2	2					1	1		
5	SB-3A 5-7'	1:20	"	12310.2	4	2				2	1	1	2	
6	SB-3A 10-12'	1:40	"	12311.0	2	2					1	1		
7	SB-4A 2.5-4.5'	2:35	"	12312.9	2	2					1	1		
8	SB-4A 5-7'	2:45	"	12313.7	4	2				2	1	1	2	

COOLER NOS.	BAILERS	SHIPMENT METHOD OUT / DATE	SHIPMENT METHOD RETURNED / DATE

ITEM NUMBER	RELINQUISHED BY / AFFILIATION	ACCEPTED BY / AFFILIATION	DATE	TIME
1	Bob Powers		5/5/95	1535

Additional Comments

ORIGINAL

SEE REVERSE SIDE FOR INSTRUCTIONS

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207693

CHAIN-OF-CUSTODY RECORD
Analytical Request

Client: Enviroscience
Address: 2224 Heimstead Rd
Eau Claire, WI 54703
Phone: 715 835 9311

Report To: Enviroscience
Bill To: Enviroscience
P.O. # / Billing Reference
Project Name / No.: Thomas

Pace Client No.: 005702
Pace Project Manager: PDE
Pace Project No.: 9505505.530
*Requested Due Date: 5-15-95

Sampled By (PRINT): Bob Powers
Bob Powers 5-3-95
Sampler Signature / Date Sampled

ITEM NO.	SAMPLE DESCRIPTION	TIME	MATRIX	PACE NO.	NO. OF CONTAINERS	PRESERVATIVES: UNPRESERVED	H_2SO_4	HNO_3	VOA	Weight MeOH	ANALYSES REQUEST: DRO	% moisture	PVOC	REMARKS
1	SB-5A 5-7'	9:45	Soil	12314.5	4	2				2	1	1	2	
2	SB-5A 10-12'	10:05	"	12315.3	4	2				2	1	1	2	
3														
4														
5														
6														
7														
8														

COOLER NOS.	BAILERS	SHIPMENT METHOD OUT / DATE	SHIPMENT METHOD RETURNED / DATE

Additional Comments

ITEM NUMBER	RELINQUISHED BY / AFFILIATION	ACCEPTED BY / AFFILIATION	DATE	TIME
1&2	Bob Powers			1535

ORIGINAL

SEE REVERSE SIDE FOR INSTRUCTIONS

GROUNDWATER SAMPLING PROCEDURES

Equipment

The following is a list of equipment that was required for the groundwater monitoring well sampling:

- Disposable bailer
- Nylon rope
- pH meter
- Conductivity meter
- Thermometer
- Stainless steel bucket
- Graduated five gallon pails
- Sample bottles
- Sample labels
- Cooler
- Ice
- Disposable gloves
- Decontamination equipment
- Garbage bags
- Water level indicator

Groundwater Sampling Procedure

To ensure that each sample was representative of the ambient groundwater, a minimum of four well volumes were removed from each monitoring well prior to sampling. When possible, samples were collected when the pH, specific conductivity and temperature had been stabilized. Groundwater samples were collected using a dedicated, bottom-loading disposable bailer and new nylon rope. A bottom emptying bailer was used to minimize turbulence when transferring samples to the vials. The samples from the wells were collected in three 40ml glass vials and a one liter glass container. The samples were cooled on ice to 4°C.

Equipment Decontamination

All sampling equipment was decontaminated between samples. The decontamination procedures were as follows:

1. Alconox® wash
2. Tap water rinse
3. Triple rinse with distilled water

Decontamination activities were performed at one convenient location. Equipment was decontaminated before any sampling began, between each sample, and upon completion of the sampling each day. All disposable equipment was properly disposed of after use.

Sample Handling

Sample packaging, chain-of-custody, and shipping procedures followed the guidelines of WDNR and laboratory requirements. Field samples were collected in appropriately

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REPORT OF LABORATORY ANALYSIS

Enviroscience, Inc.
2224 Heimstead Rd.
Eau Claire, WI 54703

July 19, 1995
PACE Project Number: 950629505

Attn: Mr. Bob Powers

Client Reference: Thomas

Parameter	Units	PRL	10 0187593 06/26/95 10:30 06/28/95 Thomas MW-3A	10 0187607 06/26/95 13:30 06/28/95 Thomas MW-2A	10 0187623 06/26/95 12:15 06/28/95 Thomas MW-1A
PACE Sample Number:					
Date Collected:					
Time Collected:					
Date Received:					
Client Sample ID:					
ORGANIC ANALYSIS					
DIESEL RANGE ORGANICS-MOD. 8015					
Date Analyzed			15JUL95 CC	15JUL95 CC	15JUL95 CC
Date Extracted			07/02/95	07/02/95	07/02/95
Diesel Range Organic Compounds	mg/L	0.10	ND	ND	ND
Pentacosane (Surrogate Std.)	%		80	91	90
PVOC/GRO IN WATER-METHODS 8020/MOD. 8015					
Date Analyzed			07JUL95 E	05JUL95 I	04JUL95 B
Benzene	ug/L	1.0	ND	ND	ND
Toluene	ug/L	1.0	ND	ND	ND
Ethylbenzene	ug/L	1.0	ND	ND	ND
Xylenes	ug/L	2.0	ND	ND	ND
1,3,5-Trimethylbenzene	ug/L	1.0	ND	ND	ND
1,2,4-Trimethylbenzene	ug/L	1.0	ND	ND	ND
Methyl tert-butyl ether	ug/L	4.0	ND	ND	ND
Gasoline Range Organic Compounds	ug/L	50	ND	ND	ND
Fluorobenzene (Surrogate)	%		106	89.3	115

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REPORT OF LABORATORY ANALYSIS

Mr. Bob Powers
Page 2

July 19, 1995
PACE Project Number: 950629505

Client Reference: Thomas

Parameter	Units	PRL		
PACE Sample Number:			10 0187631	10 0187658
Date Collected:			06/26/95	06/26/95
Time Collected:			12:20	12:30
Date Received:			06/28/95	06/28/95
Client Sample ID:			Thomas MW-1A DUP	Thomas Field Blank
ORGANIC ANALYSIS				
DIESEL RANGE ORGANICS-MOD. 8015				
Date Analyzed			15JUL95 CC	-
Date Extracted			07/02/95	-
Diesel Range Organic Compounds	mg/L	0.10	ND	-
Pentacosane (Surrogate Std.)	%		79	-
PVOC/GRO IN WATER-METHODS 8020/MOD. 8015				
Date Analyzed			04JUL95 B	05JUL95 I
Benzene	ug/L	1.0	ND	ND
Toluene	ug/L	1.0	ND	ND
Ethylbenzene	ug/L	1.0	ND	ND
Xylenes	ug/L	2.0	ND	ND
1,3,5-Trimethylbenzene	ug/L	1.0	ND	ND
1,2,4-Trimethylbenzene	ug/L	1.0	ND	ND
Methyl tert-butyl ether	ug/L	4.0	ND	ND
Gasoline Range Organic Compounds	ug/L	50	ND	ND
Fluorobenzene (Surrogate)	%		116	89.7

These data have been reviewed and are approved for release.

Paul D. Ernst
Project Manager

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REPORT OF LABORATORY ANALYSIS

FOOTNOTES
for pages 1 through 2

Client Reference: Thomas

ND	Not detected at or above the PRL.
PRL	PACE Reporting Limit

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Mr. Bob Powers
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QUALITY CONTROL DATA

July 19, 1995
PACE Project Number: 950629505

Client Reference: Thomas

DIESEL RANGE ORGANICS-MOD. 8015
Batch: 10 71400
Samples: 10 0187593, 10 0187607, 10 0187623, 10 0187631

METHOD BLANK:

Parameter	Units	PRL	Method Blank
Date Analyzed			15JUL95
Diesel Range Organic Compounds	mg/L	0.10	ND
Pentacosane (Surrogate Std.)	%		74

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

Parameter	Units	PRL	Reference Value	Recv	Dupl Recv	RPD
Diesel Range Organic Compounds	mg/L	0.10	1.0	84%	75%	11%

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QUALITY CONTROL DATA

July 19, 1995
PACE Project Number: 950629505

Client Reference: Thomas

PVOC/GRO IN WATER-METHODS 8020/MOD. 8015
Batch: 10 70896
Samples: 10 0187607, 10 0187658

METHOD BLANK:

Parameter	Units	PRL	Method Blank
Date Analyzed			05JUL95
Benzene	ug/L	1.0	ND
Toluene	ug/L	1.0	ND
Ethylbenzene	ug/L	1.0	ND
Xylenes	ug/L	2.0	ND
1,3,5-Trimethylbenzene	ug/L	1.0	ND
1,2,4-Trimethylbenzene	ug/L	1.0	ND
Methyl tert-butyl ether	ug/L	4.0	ND
Gasoline Range Organic Compounds	ug/L	50	ND
Fluorobenzene (Surrogate)	%		89.8

SPIKE AND SPIKE DUPLICATE:

Parameter	Units	PRL	100185027	Spike	Spike Recv	Spike Dupl Recv	RPD
Benzene	ug/L	1.0	ND	100	104%	103%	1%
Toluene	ug/L	1.0	ND	100	103%	102%	1%
Ethylbenzene	ug/L	1.0	ND	100	102%	102%	0%
Xylenes	ug/L	2.0	ND	300	106%	105%	1%
1,3,5-Trimethylbenzene	ug/L	1.0	ND	100	105%	103%	2%
1,2,4-Trimethylbenzene	ug/L	1.0	ND	100	102%	101%	1%

LABORATORY CONTROL SAMPLE:

Parameter	Units	PRL	Reference Value	Recv
Benzene	ug/L	1.0	100	102%
Toluene	ug/L	1.0	100	100%
Ethylbenzene	ug/L	1.0	100	99%
Xylenes	ug/L	2.0	300	102%
1,3,5-Trimethylbenzene	ug/L	1.0	100	101%
1,2,4-Trimethylbenzene	ug/L	1.0	100	96%
Methyl tert-butyl ether	ug/L	4.0	100	101%
Gasoline Range Organic Compounds	ug/L	50	1000	101%

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REPORT OF LABORATORY ANALYSIS

QUALITY CONTROL DATA

July 19, 1995
PACE Project Number: 950629505

Client Reference: Thomas

PVOC/GRO IN WATER-METHODS 8020/MOD. 8015
Batch: 10 71019
Samples: 10 0187593

METHOD BLANK:

Parameter	Units	PRL	Method Blank
Date Analyzed			07JUL95
Benzene	ug/L	1.0	ND
Toluene	ug/L	1.0	ND
Ethylbenzene	ug/L	1.0	ND
Xylenes	ug/L	2.0	ND
1,3,5-Trimethylbenzene	ug/L	1.0	ND
1,2,4-Trimethylbenzene	ug/L	1.0	ND
Methyl tert-butyl ether	ug/L	4.0	ND
Gasoline Range Organic Compounds	ug/L	50	ND
Fluorobenzene (Surrogate)	%		112

SPIKE AND SPIKE DUPLICATE:

Parameter	Units	PRL	10018990l	Spike	Spike Recv	Spike Dupl Recv	RPD
Benzene	ug/L	1.0	ND	100	101%	105%	4%
Toluene	ug/L	1.0	ND	100	96%	102%	6%
Ethylbenzene	ug/L	1.0	ND	100	96%	103%	7%
Xylenes	ug/L	2.0	ND	300	96%	102%	6%
1,3,5-Trimethylbenzene	ug/L	1.0	ND	100	90%	95%	5%
1,2,4-Trimethylbenzene	ug/L	1.0	ND	100	83%	87%	5%

LABORATORY CONTROL SAMPLE:

Parameter	Units	PRL	Reference Value	Recv
Benzene	ug/L	1.0	100	102%
Toluene	ug/L	1.0	100	101%
Ethylbenzene	ug/L	1.0	100	101%
Xylenes	ug/L	2.0	300	102%
1,3,5-Trimethylbenzene	ug/L	1.0	100	99%
1,2,4-Trimethylbenzene	ug/L	1.0	100	95%
Methyl tert-butyl ether	ug/L	4.0	100	83%
Gasoline Range Organic Compounds	ug/L	50	1000	97%

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REPORT OF LABORATORY ANALYSIS

Mr. Bob Powers
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QUALITY CONTROL DATA

July 19, 1995
PACE Project Number: 950629505

Client Reference: Thomas

VOLATILE PETROLEUM RELATED COMPOUNDS
Batch: 10 70844
Samples: 10 0187623, 10 0187631

METHOD BLANK:

Parameter	Units	PRL	Method Blank
Date Analyzed			04JUL95
Benzene	ug/L	1.0	ND
Toluene	ug/L	1.0	ND
Ethylbenzene	ug/L	1.0	ND
Xylenes	ug/L	2.0	ND
1,3,5-Trimethylbenzene	ug/L	1.0	ND
1,2,4-Trimethylbenzene	ug/L	1.0	ND
Methyl tert-butyl ether	ug/L	4.0	ND
Gasoline Range Organic Compounds	ug/L	50	ND
Fluorobenzene (Surrogate)	%		115

SPIKE AND SPIKE DUPLICATE:

Parameter	Units	PRL	100184918	Spike	Spike Recv	Spike Dupl Recv	RPD
Benzene	ug/L	1.0	ND	100	101%	96%	5%
Toluene	ug/L	1.0	ND	100	106%	100%	6%
Ethylbenzene	ug/L	1.0	ND	100	107%	101%	6%
Xylenes	ug/L	2.0	ND	300	108%	100%	8%
1,3,5-Trimethylbenzene	ug/L	1.0	ND	100	108%	97%	11%
1,2,4-Trimethylbenzene	ug/L	1.0	ND	100	107%	96%	11%

LABORATORY CONTROL SAMPLE:

Parameter	Units	PRL	Reference Value	Recv
Benzene	ug/L	1.0	100	96%
Toluene	ug/L	1.0	100	101%
Ethylbenzene	ug/L	1.0	100	102%
Xylenes	ug/L	2.0	300	103%
1,3,5-Trimethylbenzene	ug/L	1.0	100	102%
1,2,4-Trimethylbenzene	ug/L	1.0	100	102%
Methyl tert-butyl ether	ug/L	4.0	100	96%
Gasoline Range Organic Compounds	ug/L	50	1000	106%

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REPORT OF LABORATORY ANALYSIS

FOOTNOTES
for pages 4 through 7

Client Reference: Thomas

ND	Not detected at or above the PRL.
PRL	PACE Reporting Limit
RPD	Relative Percent Difference

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282038

pace INCORPORATED
ENVIRONMENTAL LABORATORIES

CHAIN-OF-CUSTODY RECORD
Analytical Request

Client: Enviroscience
Address: 2224 Heimstead Rd
Eau Claire, WI 54703
Phone: 715 835 9311

Report To: Enviroscience
Bill To: Enviroscience
P.O. # / Billing Reference
Project Name / No.: Thomas

Pace Client No.
Pace Project Manager: Paul Ernst
Pace Project No.: 950629505
*Requested Due Date:

Sampled By (PRINT): Bob Powers
Bob Powers 6-26-95
Sampler Signature / Date Sampled

ITEM NO.	SAMPLE DESCRIPTION	TIME	MATRIX	PACE NO.	NO. OF CONTAINERS	PRESERVATIVES: UNPRESERVED	H_2SO_4	HNO_3	VOA	HCl	ANALYSES REQUEST: PVOC	DRO	REMARKS
1	Thomas MW-3A	10:30	H_2O	18759.3	4					4	3	1	
2	Thomas MW-2A	11:30	"	18760.7	4					4	3	1	
3	Thomas MW-1A	12:15	"	18762.3	4					4	3	1	
4	Thomas MW-1A DUP	12:20	"	18763.1	4					4	3	1	
5	Thomas Field Blank	12:30	"	18765.8	3					3	3		
6													
7	Trip Blank - Hold @			18781.0	2								
8													

COOLER NOS.	BAILERS	SHIPMENT METHOD OUT/DATE	SHIPMENT METHOD RETURNED/DATE

Additional Comments

ITEM NUMBER	RELINQUISHED BY / AFFILIATION	ACCEPTED BY / AFFILIATION	DATE	TIME
	Bob Powers	Kari E Bisbee/Pace	6/28/95	1800

SEE REVERSE SIDE FOR INSTRUCTIONS

ORIGINAL

PACE INCORPORATED
ENVIRONMENTAL LABORATORIES

REPORT OF LABORATORY ANALYSIS

Enviroscience, Inc.
2224 Heimstead Rd.
Eau Claire, WI 54703

May 16, 1995
PACE Project Number: 950509504

Attn: Mr. Bob Powers

Client Reference: Thomas

Parameter	Units	PRL	10 0126063 05/04/95 10:30 05/05/95 MW-1A	10 0126071 05/04/95 10:30 05/05/95 MW-1A Dup	10 0126080 05/04/95 13:00 05/05/95 MW-2A (SB-3A)
PACE Sample Number:					
Date Collected:					
Time Collected:					
Date Received:					
ORGANIC ANALYSIS					
DIESEL RANGE ORGANICS-MOD. 8015					
Date Analyzed			14MAY95 X	15MAY95 X	15MAY95 X
Date Extracted			05/10/95	05/10/95	05/10/95
Diesel Range Organic Compounds	mg/L	0.10	ND	ND	0.16 LB HB
Pentacosane (Surrogate Std.)	%		102	98	102
SW8310: MODIFIED LIST					
Date Extracted			05/10/95	05/10/95	05/10/95
Date Analyzed			11MAY95 1	11MAY95 1	11MAY95 1
Naphthalene	ug/L	1.5	ND	ND	ND
Acenaphthylene	ug/L	1.5	ND	ND	ND
1-Methylnaphthalene	ug/L	1.5	ND	ND	ND
2-Methylnaphthalene	ug/L	1.5	ND	ND	ND
Acenaphthene	ug/L	2.0	ND	ND	ND
Fluorene	ug/L	0.31	ND	ND	ND
Phenanthrene	ug/L	0.20	ND	ND	ND
Anthracene	ug/L	0.050	ND	ND	ND
Fluoranthene	ug/L	0.30	ND	ND	ND
Pyrene	ug/L	0.10	ND	ND	ND
Benzo(a)anthracene	ug/L	0.10	ND	ND	ND
Chrysene	ug/L	0.10	ND	ND	ND
Benzo(b)fluoranthene	ug/L	0.20	ND	ND	ND
Benzo(k)fluoranthene	ug/L	0.050	ND	ND	ND
Benzo(a)pyrene	ug/L	0.10	ND	ND	ND
Dibenzo(a,h)anthracene	ug/L	0.20	ND	ND	ND
Benzo(g,h,i)perylene	ug/L	0.20	ND	ND	ND
Indeno(1,2,3-cd)pyrene	ug/L	0.20	ND	ND	ND
Carbazole (Surrogate)	%		88	87	83
Terphenyl (Surrogate)	%		89	84	84

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REPORT OF LABORATORY ANALYSIS

Mr. Bob Powers
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May 16, 1995
PACE Project Number: 950509504

Client Reference: Thomas

Parameter	Units	PRL	10 0126063 MW-1A	10 0126071 MW-1A Dup	10 0126080 MW-2A (SB-3A)
PACE Sample Number:			10 0126063	10 0126071	10 0126080
Date Collected:			05/04/95	05/04/95	05/04/95
Time Collected:			10:30	10:30	13:00
Date Received:			05/05/95	05/05/95	05/05/95
Client Sample ID:			MW-1A	MW-1A Dup	MW-2A (SB-3A)
ORGANIC ANALYSIS					
VOLATILE ORGANICS IN WATER-8021					
Date Analyzed			11MAY95 D	11MAY95 D	11MAY95 D
Chloromethane	ug/L	0.8	ND	ND	ND
Dichlorodifluoromethane	ug/L	1.2	ND	ND	ND
Vinyl chloride	ug/L	1.7	ND	ND	ND
Chloroethane	ug/L	0.8	ND	ND	ND
1,1-Dichloroethylene	ug/L	0.5	ND	ND	ND
Trichlorofluoromethane	ug/L	0.4	ND	0.4	ND
Methylene chloride	ug/L	1.0	ND	ND	ND
trans-1,2-Dichloroethylene	ug/L	0.4	ND	ND	ND
1,1-Dichloroethane	ug/L	0.6	ND	ND	ND
2,2-Dichloropropane	ug/L	0.5	ND	ND	ND
cis-1,2-Dichloroethylene	ug/L	0.4	ND	ND	ND
Chloroform	ug/L	1.2	ND	ND	ND
1,1,1-Trichloroethane	ug/L	0.7	ND	ND	ND
Carbon tetrachloride	ug/L	0.5	ND	ND	ND
1,2-Dichloroethane	ug/L	0.5	ND	ND	ND
1,1,2-Trichloroethylene	ug/L	1.0	ND	ND	ND
1,2-Dichloropropane	ug/L	0.7	ND	ND	ND
Bromodichloromethane	ug/L	0.8	ND	ND	ND
1,1,2-Trichloroethane	ug/L	0.4	ND	ND	ND
1,3-Dichloropropane	ug/L	0.7	ND	ND	ND
1,1,2,2-Tetrachloroethylene	ug/L	1.6	ND	ND	ND
Dibromochloromethane	ug/L	0.9	ND	ND	ND
1,2-Dibromoethane	ug/L	4.0	ND	ND	ND
1,1,2,2-Tetrachloroethane	ug/L	0.7	ND	ND	ND
1,2-Dibromo-3-chloropropane	ug/L	0.8	ND	ND	ND
Hexachlorobutadiene	ug/L	1.1	ND	ND	ND
Methyl tert-butyl ether	ug/L	1.0	ND	ND	ND
Benzene	ug/L	0.4	ND	ND	ND
Toluene	ug/L	0.6	ND	ND	ND
Chlorobenzene	ug/L	0.7	ND	ND	ND

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REPORT OF LABORATORY ANALYSIS

Mr. Bob Powers
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May 16, 1995
PACE Project Number: 950509504

Client Reference: Thomas

Parameter	Units	PRL	10 0126063 05/04/95 10:30 05/05/95 MW-1A	10 0126071 05/04/95 10:30 05/05/95 MW-1A Dup	10 0126080 05/04/95 13:00 05/05/95 MW-2A (SB-3A)
PACE Sample Number:					
Date Collected:					
Time Collected:					
Date Received:					
Client Sample ID:					
ORGANIC ANALYSIS					
VOLATILE ORGANICS IN WATER-8021					
Ethyl benzene	ug/L	0.8	ND	ND	ND
Xylenes	ug/L	1.3	ND	ND	ND
Cumene	ug/L	1.2	ND	ND	ND
Bromobenzene	ug/L	1.0	ND	ND	ND
n-Propybenzene	ug/L	0.9	ND	ND	ND
2-Chlorotoluene	ug/L	1.0	ND	ND	ND
4-Chlorotoluene	ug/L	1.4	ND	ND	ND
1,3,5-Trimethylbenzene	ug/L	0.7	ND	ND	ND
tert-Butylbenzene	ug/L	2.0	ND	ND	ND
1,2,4-Trimethylbenzene	ug/L	0.7	ND	ND	ND
1,3-Dichlorobenzene	ug/L	0.9	ND	ND	ND
sec-Butylbenzene	ug/L	0.8	ND	ND	ND
1,4-Dichlorobenzene	ug/L	0.9	ND	ND	ND
p-Cymene	ug/L	0.9	ND	ND	ND
1,2-Dichlorobenzene	ug/L	1.0	ND	ND	ND
n-Butylbenzene	ug/L	1.2	ND	ND	ND
1,2,4-Trichlorobenzene	ug/L	1.1	ND	ND	ND
Naphthalene	ug/L	1.6	ND	ND	ND
1,2,3-Trichlorobenzene	ug/L	1.1	ND	ND	ND
di-Isopropyl ether	ug/L	1.0	ND	ND	ND
Fluorobenzene (Surrogate)	%		98.2	94.6	98.1

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REPORT OF LABORATORY ANALYSIS

May 16, 1995
PACE Project Number: 950509504

Client Reference: Thomas

Parameter	Units	PRL	(SB-4A)
PACE Sample Number:			10 0126098
Date Collected:			05/04/95
Time Collected:			15:00
Date Received:			05/05/95
Client Sample ID:			MW-3A
ORGANIC ANALYSIS			
DIESEL RANGE ORGANICS-MOD. 8015			
Date Analyzed			15MAY95 X
Date Extracted			05/10/95
Diesel Range Organic Compounds	mg/L	0.14	0.29 HB LB
Pentacosane (Surrogate Std.)	%		99
VOLATILE ORGANICS IN WATER-8021			
Date Analyzed			11MAY95 D
Chloromethane	ug/L	0.8	ND
Dichlorodifluoromethane	ug/L	1.2	ND
Vinyl chloride	ug/L	1.7	ND
Chloroethane	ug/L	0.8	ND
1,1-Dichloroethylene	ug/L	0.5	ND
Trichlorofluoromethane	ug/L	0.4	ND
Methylene chloride	ug/L	1.0	ND
trans-1,2-Dichloroethylene	ug/L	0.4	ND
1,1-Dichloroethane	ug/L	0.6	ND
2,2-Dichloropropane	ug/L	0.5	ND
cis-1,2-Dichloroethylene	ug/L	0.4	ND
Chloroform	ug/L	1.2	ND
1,1,1-Trichloroethane	ug/L	0.7	ND
Carbon tetrachloride	ug/L	0.5	ND
1,2-Dichloroethane	ug/L	0.5	ND
1,1,2-Trichloroethylene	ug/L	1.0	ND
1,2-Dichloropropane	ug/L	0.7	ND
Bromodichloromethane	ug/L	0.8	ND
1,1,2-Trichloroethane	ug/L	0.4	ND
1,3-Dichloropropane	ug/L	0.7	ND
1,1,2,2-Tetrachloroethylene	ug/L	1.6	ND
Dibromochloromethane	ug/L	0.9	ND
1,2-Dibromoethane	ug/L	4.0	ND
1,1,2,2-Tetrachloroethane	ug/L	0.7	ND

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REPORT OF LABORATORY ANALYSIS

Mr. Bob Powers
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May 16, 1995
PACE Project Number: 950509504

Client Reference: Thomas

PACE Sample Number:			10 0126098
Date Collected:			05/04/95
Time Collected:			15:00
Date Received:			05/05/95
Client Sample ID:			MW-3A
Parameter	Units	PRL	(SB-4A)
ORGANIC ANALYSIS			
VOLATILE ORGANICS IN WATER-8021			
1,2-Dibromo-3-chloropropane	ug/L	0.8	ND
Hexachlorobutadiene	ug/L	1.1	ND
Methyl tert-butyl ether	ug/L	1.0	ND
Benzene	ug/L	0.4	ND
Toluene	ug/L	0.6	ND
Chlorobenzene	ug/L	0.7	ND
Ethyl benzene	ug/L	0.8	ND
Xylenes	ug/L	1.3	ND
Cumene	ug/L	1.2	ND
Bromobenzene	ug/L	1.0	ND
n-Propybenzene	ug/L	0.9	ND
2-Chlorotoluene	ug/L	1.0	ND
4-Chlorotoluene	ug/L	1.4	ND
1,3,5-Trimethylbenzene	ug/L	0.7	ND
tert-Butylbenzene	ug/L	2.0	ND
1,2,4-Trimethylbenzene	ug/L	0.7	ND
1,3-Dichlorobenzene	ug/L	0.9	ND
sec-Butylbenzene	ug/L	0.8	ND
1,4-Dichlorobenzene	ug/L	0.9	ND
p-Cymene	ug/L	0.9	ND
1,2-Dichlorobenzene	ug/L	1.0	ND
n-Butylbenzene	ug/L	1.2	ND
1,2,4-Trichlorobenzene	ug/L	1.1	ND
Naphthalene	ug/L	1.6	ND
1,2,3-Trichlorobenzene	ug/L	1.1	ND
di-Isopropyl ether	ug/L	1.0	ND
Fluorobenzene (Surrogate)	%		93.8

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ENVIRONMENTAL LABORATORIES

REPORT OF LABORATORY ANALYSIS

May 16, 1995
PACE Project Number: 950509504

Client Reference: Thomas

These data have been reviewed and are approved for release.

Paul D. Ernst
Project Manager

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REPORT OF LABORATORY ANALYSIS

FOOTNOTES
for pages 1 through 6

May 16, 1995
PACE Project Number: 950509504

Client Reference: Thomas

HB	High boiling point hydrocarbons are present in sample.
LB	Low boiling point components are present in sample.
ND	Not detected at or above the PRL.
PRL	PACE Reporting Limit

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REPORT OF LABORATORY ANALYSIS

Mr. Bob Powers
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QUALITY CONTROL DATA

May 16, 1995
PACE Project Number: 950509504

Client Reference: Thomas

DIESEL RANGE ORGANICS-MOD. 8015
Batch: 10 68399
Samples: 10 0126063, 10 0126071, 10 0126080, 10 0126098

METHOD BLANK:

Parameter	Units	PRL	Method Blank
Date Analyzed			14MAY95
Diesel Range Organic Compounds	mg/L	0.10	ND
Pentacosane (Surrogate Std.)	%		100

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

Parameter	Units	PRL	Reference Value	Recv	Dupl Recv	RPD
Diesel Range Organic Compounds	mg/L	0.10	1.0	100%	110%	10%

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ENVIRONMENTAL LABORATORIES

REPORT OF LABORATORY ANALYSIS

QUALITY CONTROL DATA

May 16, 1995
PACE Project Number: 950509504

Client Reference: Thomas

MDH 465D: VOLATILE ORGANICS IN LIQUID
Batch: 10 68462
Samples: 10 0126063, 10 0126071, 10 0126080, 10 0126098

METHOD BLANK:

Parameter	Units	PRL	Method Blank
Date Analyzed			11MAY95
Dichlorodifluoromethane	ug/L	1.5	ND
Chloromethane	ug/L	1.5	ND
Vinyl Chloride	ug/L	1.5	ND
Bromomethane	ug/L	1.5	ND
Chloroethane	ug/L	1.0	ND
Dichlorofluoromethane	ug/L	1.0	ND
Trichlorofluoromethane	ug/L	0.5	ND
Ethyl ether	ug/L	5.0	ND
1,1,2-Trichlorotrifluoroethane	ug/L	1.0	ND
Acetone	ug/L	40.0	ND
1,1-Dichloroethylene	ug/L	0.5	ND
Allyl chloride	ug/L	2.0	ND
Methylene Chloride	ug/L	1.0	ND
Methyl tert-Butyl Ether	ug/L	4.0	ND
Trans-1,2-dichloroethylene	ug/L	0.5	ND
1,1-Dichloroethane	ug/L	0.5	ND
Methyl ethyl ketone	ug/L	25.0	ND
2,2-Dichloropropane	ug/L	0.5	ND
cis-1,2-Dichloroethylene	ug/L	0.5	ND
Chloroform	ug/L	0.5	ND
Bromochloromethane	ug/L	1.0	ND
Tetrahydrofuran	ug/L	20.0	ND
1,1,1-Trichloroethane	ug/L	0.5	ND
1,1-Dichloropropene	ug/L	1.0	ND
Carbon Tetrachloride	ug/L	0.5	ND
Benzene	ug/L	0.5	ND
1,2-Dichloroethane	ug/L	0.5	ND
1,2-Dichloropropane	ug/L	0.5	ND
1,1,2-Trichloroethylene	ug/L	0.5	ND
Dibromomethane	ug/L	1.5	ND
Bromodichloromethane	ug/L	0.5	ND

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REPORT OF LABORATORY ANALYSIS

QUALITY CONTROL DATA

Client Reference: Thomas

MDH 465D: VOLATILE ORGANICS IN LIQUID
Batch: 10 68462
Samples: 10 0126063, 10 0126071, 10 0126080, 10 0126098

METHOD BLANK:

Parameter	Units	PRL	Method Blank
Methyl isobutyl ketone	ug/L	8.0	ND
cis-1,3-Dichloro-1-propene	ug/L	0.5	ND
Toluene	ug/L	0.8	ND
trans-1,3-Dichloro-1-propene	ug/L	0.5	ND
1,1,2-Trichloroethane	ug/L	0.5	ND
1,3-Dichloropropane	ug/L	0.8	ND
1,1,2,2-Tetrachloroethylene	ug/L	1.0	ND
Dibromochloromethane	ug/L	1.0	ND
1,2-Dibromoethane	ug/L	4.0	ND
Chlorobenzene	ug/L	0.8	ND
1,1,1,2-Tetrachloroethane	ug/L	0.5	ND
Ethyl benzene	ug/L	0.8	ND
m-Xylene	ug/L	0.8	ND
p-Xylene	ug/L	0.8	ND
o-Xylene	ug/L	0.8	ND
Styrene	ug/L	0.8	ND
Bromoform	ug/L	1.0	ND
Cumene	ug/L	1.0	ND
1,1,2,2-Tetrachloroethane	ug/L	1.0	ND
1,2,3-Trichloropropane	ug/L	4.0	ND
Bromobenzene	ug/L	1.0	ND
n-Propylbenzene	ug/L	1.0	ND
2-Chlorotoluene	ug/L	1.0	ND
1,3,5-Trimethylbenzene	ug/L	0.8	ND
4-Chlorotoluene	ug/L	1.5	ND
tert-Butylbenzene	ug/L	0.8	ND
1,2,4-Trimethylbenzene	ug/L	0.8	ND
sec-Butylbenzene	ug/L	1.0	ND
p-Cymene	ug/L	1.0	ND
1,3-Dichlorobenzene	ug/L	1.0	ND
1,4-Dichlorobenzene	ug/L	1.0	ND
n-Butylbenzene	ug/L	1.2	ND

REPORT OF LABORATORY ANALYSIS

Mr. Bob Powers
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QUALITY CONTROL DATA

May 16, 1995
PACE Project Number: 950509504

Client Reference: Thomas

MDH 465D: VOLATILE ORGANICS IN LIQUID
Batch: 10 68462
Samples: 10 0126063, 10 0126071, 10 0126080, 10 0126098

METHOD BLANK:

Parameter	Units	PRL	Method Blank
1,2-Dichlorobenzene	ug/L	1.0	ND
1,2-Dibromo-3-chloropropane	ug/L	0.8	ND
1,2,4-Trichlorobenzene	ug/L	1.2	ND
Hexachlorobutadiene	ug/L	2.0	ND
Naphthalene	ug/L	1.5	ND
1,2,3-Trichlorobenzene	ug/L	1.5	ND
Fluorobenzene (Surrogate)	%		99.2
1,4-Dichlorobutane (Surrogate Standard)	%		100

SPIKE AND SPIKE DUPLICATE:

Parameter	Units	PRL	100114626	Spike	Spike Recv	Spike Dupl Recv	RPD
Dichlorodifluoromethane	ug/L	1.5	ND	20.0	92%	77%	18%
Chloromethane	ug/L	1.5	ND	20.0	101%	82%	21%
Vinyl Chloride	ug/L	1.5	ND	20.0	98%	87%	12%
Bromomethane	ug/L	1.5	ND	20.0	58%	50%	15%
Chloroethane	ug/L	1.0	ND	20.0	107%	102%	5%
Trichlorofluoromethane	ug/L	0.5	ND	20.0	106%	99%	7%
Ethyl ether	ug/L	5.0	ND	20.0	100%	112%	11%
1,1,2-Trichlorotrifluoroethane	ug/L	1.0	ND	20.0	99%	90%	10%
Acetone	ug/L	40.0	ND	200	88%	126%	36%
Allyl chloride	ug/L	2.0	ND	20.0	97%	78%	22%
Methyl tert-Butyl Ether	ug/L	4.0	ND	20.0	91%	104%	13%
cis-1,2-Dichloroethylene	ug/L	0.5	ND	20.0	100%	99%	1%
Bromochloromethane	ug/L	1.0	ND	20.0	95%	106%	11%
1,1-Dichloropropene	ug/L	1.0	ND	20.0	103%	100%	3%
1,2-Dichloroethane	ug/L	0.5	ND	20.0	99%	108%	9%
1,2-Dichloropropane	ug/L	0.5	ND	20.0	102%	107%	5%
Dibromomethane	ug/L	1.5	ND	20.0	99%	120%	19%
1,1,2-Trichloroethane	ug/L	0.5	ND	20.0	100%	116%	15%
1,1,2,2-Tetrachloroethylene	ug/L	1.0	ND	20.0	110%	104%	6%

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REPORT OF LABORATORY ANALYSIS

Mr. Bob Powers
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QUALITY CONTROL DATA

May 16, 1995
PACE Project Number: 950509504

Client Reference: Thomas

MDH 465D: VOLATILE ORGANICS IN LIQUID
Batch: 10 68462
Samples: 10 0126063, 10 0126071, 10 0126080, 10 0126098

SPIKE AND SPIKE DUPLICATE:

Parameter	Units	PRL	100114626	Spike	Spike Recv	Spike Dupl Recv	RPD
Dibromochloromethane	ug/L	1.0	ND	20.0	93%	105%	12%
1,2-Dibromoethane	ug/L	4.0	ND	20.0	93%	95%	2%
1,1,1,2-Tetrachloroethane	ug/L	0.5	ND	20.0	116%	126%	8%
Ethyl benzene	ug/L	0.8	ND	20.0	99%	97%	2%
p-Xylene	ug/L	0.8	ND	20.0	101%	107%	6%
o-Xylene	ug/L	0.8	ND	20.0	97%	105%	8%
1,1,2,2-Tetrachloroethane	ug/L	1.0	ND	20.0	113%	145%	25%
1,2,3-Trichloropropane	ug/L	4.0	ND	20.0	101%	131%	26%
Bromobenzene	ug/L	1.0	ND	20.0	95%	103%	8%
2-Chlorotoluene	ug/L	1.0	ND	20.0	133%	137%	3%
1,2,4-Trimethylbenzene	ug/L	0.8	ND	20.0	87%	99%	13%
sec-Butylbenzene	ug/L	1.0	ND	20.0	94%	103%	9%
1,3-Dichlorobenzene	ug/L	1.0	ND	20.0	103%	107%	4%
n-Butylbenzene	ug/L	1.2	ND	20.0	91%	110%	19%
1,2-Dibromo-3-chloropropane	ug/L	0.8	ND	20.0	90%	127%	34%
1,2,4-Trichlorobenzene	ug/L	1.2	ND	20.0	102%	114%	11%

LABORATORY CONTROL SAMPLE:

Parameter	Units	PRL	Reference Value	Recv
Dichlorodifluoromethane	ug/L	1.5	20.0	76%
Chloromethane	ug/L	1.5	20.0	75%
Vinyl Chloride	ug/L	1.5	20.0	92%
Bromomethane	ug/L	1.5	20.0	56%
Chloroethane	ug/L	1.0	20.0	102%
Dichlorofluoromethane	ug/L	1.0	20.0	83%
Trichlorofluoromethane	ug/L	0.5	20.0	95%
Ethyl ether	ug/L	5.0	20.0	138%
1,1,2-Trichlorotrifluoroethane	ug/L	1.0	20.0	89%
Acetone	ug/L	40.0	200	60%
1,1-Dichloroethylene	ug/L	0.5	20.0	90%
Allyl chloride	ug/L	2.0	20.0	89%

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Mr. Bob Powers
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QUALITY CONTROL DATA

May 16, 1995
PACE Project Number: 950509504

Client Reference: Thomas

MDH 465D: VOLATILE ORGANICS IN LIQUID
Batch: 10 68462
Samples: 10 0126063, 10 0126071, 10 0126080, 10 0126098

LABORATORY CONTROL SAMPLE:

Parameter	Units	PRL	Reference Value	Recv
Methylene Chloride	ug/L	1.0	20.0	96%
Methyl tert-Butyl Ether	ug/L	4.0	20.0	86%
Trans-1,2-dichloroethylene	ug/L	0.5	20.0	94%
1,1-Dichloroethane	ug/L	0.5	20.0	94%
Methyl ethyl ketone	ug/L	25.0	200	60%
2,2-Dichloropropane	ug/L	0.5	20.0	101%
cis-1,2-Dichloroethylene	ug/L	0.5	20.0	91%
Chloroform	ug/L	0.5	20.0	104%
Bromochloromethane	ug/L	1.0	20.0	95%
Tetrahydrofuran	ug/L	20.0	200	74%
1,1,1-Trichloroethane	ug/L	0.5	20.0	105%
1,1-Dichloropropene	ug/L	1.0	20.0	96%
Carbon Tetrachloride	ug/L	0.5	20.0	100%
Benzene	ug/L	0.5	20.0	91%
1,2-Dichloroethane	ug/L	0.5	20.0	93%
1,2-Dichloropropane	ug/L	0.5	20.0	95%
1,1,2-Trichloroethylene	ug/L	0.5	20.0	96%
Dibromomethane	ug/L	1.5	20.0	83%
Bromodichloromethane	ug/L	0.5	20.0	106%
Methyl isobutyl ketone	ug/L	8.0	40.0	77%
cis-1,3-Dichloro-1-propene	ug/L	0.5	20.0	107%
Toluene	ug/L	0.8	20.0	91%
trans-1,3-Dichloro-1-propene	ug/L	0.5	20.0	97%
1,1,2-Trichloroethane	ug/L	0.5	20.0	97%
1,3-Dichloropropane	ug/L	0.8	20.0	101%
1,1,2,2-Tetrachloroethylene	ug/L	1.0	20.0	107%
Dibromochloromethane	ug/L	1.0	20.0	104%
1,2-Dibromoethane	ug/L	4.0	20.0	93%
Chlorobenzene	ug/L	0.8	20.0	108%
1,1,1,2-Tetrachloroethane	ug/L	0.5	20.0	114%
Ethyl benzene	ug/L	0.8	20.0	98%
m-Xylene	ug/L	0.8	20.0	91%

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Client Reference: Thomas

MDH 465D: VOLATILE ORGANICS IN LIQUID
Batch: 10 68462
Samples: 10 0126063, 10 0126071, 10 0126080, 10 0126098

LABORATORY CONTROL SAMPLE:

Parameter	Units	PRL	Reference Value	Recv
p-Xylene	ug/L	0.8	20.0	101%
o-Xylene	ug/L	0.8	20.0	93%
Styrene	ug/L	0.8	20.0	89%
Bromoform	ug/L	1.0	20.0	77%
Cumene	ug/L	1.0	20.0	97%
1,1,2,2-Tetrachloroethane	ug/L	1.0	20.0	123%
1,2,3-Trichloropropane	ug/L	4.0	20.0	107%
Bromobenzene	ug/L	1.0	20.0	103%
n-Propylbenzene	ug/L	1.0	20.0	90%
2-Chlorotoluene	ug/L	1.0	20.0	109%
1,3,5-Trimethylbenzene	ug/L	0.8	20.0	96%
4-Chlorotoluene	ug/L	1.5	20.0	90%
tert-Butylbenzene	ug/L	0.8	20.0	94%
1,2,4-Trimethylbenzene	ug/L	0.8	20.0	99%
sec-Butylbenzene	ug/L	1.0	20.0	93%
p-Cymene	ug/L	1.0	20.0	94%
1,3-Dichlorobenzene	ug/L	1.0	20.0	97%
1,4-Dichlorobenzene	ug/L	1.0	20.0	100%
n-Butylbenzene	ug/L	1.2	20.0	98%
1,2-Dichlorobenzene	ug/L	1.0	20.0	105%
1,2-Dibromo-3-chloropropane	ug/L	0.8	20.0	72%
1,2,4-Trichlorobenzene	ug/L	1.2	20.0	98%
Hexachlorobutadiene	ug/L	2.0	20.0	113%
Naphthalene	ug/L	1.5	20.0	105%
1,2,3-Trichlorobenzene	ug/L	1.5	20.0	113%

REPORT OF LABORATORY ANALYSIS

QUALITY CONTROL DATA

Client Reference: Thomas

SW8310: MODIFIED LIST
Batch: 10 68412
Samples: 10 0126063, 10 0126071, 10 0126080

METHOD BLANK:

Parameter	Units	PRL	Method Blank
Date Analyzed			11MAY95
Naphthalene	ug/L	1.5	ND
Acenaphthylene	ug/L	1.5	ND
1-Methylnaphthalene	ug/L	1.5	ND
2-Methylnaphthalene	ug/L	1.5	ND
Acenaphthene	ug/L	2.0	ND
Fluorene	ug/L	0.31	ND
Phenanthrene	ug/L	0.20	ND
Anthracene	ug/L	0.050	ND
Fluoranthene	ug/L	0.30	ND
Pyrene	ug/L	0.10	ND
Benzo(a)anthracene	ug/L	0.10	ND
Chrysene	ug/L	0.10	ND
Benzo(b)fluoranthene	ug/L	0.20	ND
Benzo(k)fluoranthene	ug/L	0.050	ND
Benzo(a)pyrene	ug/L	0.10	ND
Dibenzo(a,h)anthracene	ug/L	0.20	ND
Benzo(g,h,i)perylene	ug/L	0.20	ND
Indeno(1,2,3-cd)pyrene	ug/L	0.20	ND
Carbazole (Surrogate)	%		89
Terphenyl (Surrogate)	%		90

LABORATORY CONTROL SAMPLE:

Parameter	Units	PRL	Reference Value	Recv
Naphthalene	ug/L	1.5	10	73%
Acenaphthylene	ug/L	1.5	20	75%
1-Methylnaphthalene	ug/L	1.5	10	70%
2-Methylnaphthalene	ug/L	1.5	10	70%
Acenaphthene	ug/L	2.0	10	75%
Fluorene	ug/L	0.31	2.0	75%
Phenanthrene	ug/L	0.20	1.0	90%

pace INCORPORATED
ENVIRONMENTAL LABORATORIES

REPORT OF LABORATORY ANALYSIS

QUALITY CONTROL DATA

May 16, 1995
PACE Project Number: 950509504

Client Reference: Thomas

SW8310: MODIFIED LIST
Batch: 10 68412
Samples: 10 0126063, 10 0126071, 10 0126080

LABORATORY CONTROL SAMPLE:

Parameter	Units	PRL	Reference Value	Recv
Anthracene	ug/L	0.050	1.0	88%
Fluoranthene	ug/L	0.30	2.0	90%
Pyrene	ug/L	0.10	1.0	92%
Benzo(a)anthracene	ug/L	0.10	1.0	83%
Chrysene	ug/L	0.10	1.0	83%
Benzo(b)fluoranthene	ug/L	0.20	2.0	90%
Benzo(k)fluoranthene	ug/L	0.050	1.0	87%
Benzo(a)pyrene	ug/L	0.10	1.0	84%
Dibenzo(a,h)anthracene	ug/L	0.20	2.0	85%
Benzo(g,h,i)perylene	ug/L	0.20	2.0	85%
Indeno(1,2,3-cd)pyrene	ug/L	0.20	1.0	86%

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REPORT OF LABORATORY ANALYSIS

FOOTNOTES
for pages 8 through 16

May 16, 1995
PACE Project Number: 950509504

Client Reference: Thomas

ND	Not detected at or above the PRL.
PRL	PACE Reporting Limit
RPD	Relative Percent Difference

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207690

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CHAIN-OF-CUSTODY RECORD
Analytical Request

MAY-08-95 MON 11:29 AM EC ENVIRO

Client: Envirosscience
Address: 2224 Heimstead Rd.
Eau Claire, WI 54703
Phone: 715 835 9311

Report To: Enviroscience
Bill To: Enviroscience
P.O. # / Billing Reference:
Project Name / No.: Thomas

Pace Client No.:
Pace Project Manager:
Pace Project No.: 9505098054
*Requested Due Date: 5-15-95

Sampled By (PRINT): Bob Powers
Sampler Signature: Bob Powers
Date Sampled: 5-4-95

ITEM NO.	SAMPLE DESCRIPTION	TIME	MATRIX	PACE NO.	NO. OF CONTAINERS	UNPRESERVED	H_2SO_4	HNO_3	VOA	HCl		DRO	PAH	VOC	REMARKS
1	MW-1A (SB-5A)	10:30	Water		5	1				4		1	1	3	12606.3
2	MW-2A (SB-3A)	1:00	"		5	1				4		1	1	3	12608.0
3	MW-3A (SB-4A)	3:00	"		5	1				4		1	1	3	12609.8
4															
5															
6	MW-1A Dup														12607.1
7	Dave [illegible] 5-9														
8															

COOLER NOS.	BAILERS	SHIPMENT METHOD OUT DATE	RETURNED DATE

ITEM NUMBER	RELINQUISHED BY / AFFILIATION	ACCEPTED BY / AFFILIATION	DATE	TIME
	Bob Powers / Sampler	[illegible] / Pace	5/6/95	1535

Additional Comments

ORIGINAL

SEE REVERSE SIDE FOR INSTRUCTIONS

7158359352 P.02

PHASE II½ ENVIRONMENTAL ASSESSMENT

FOR

THOMAS ABANDONED SERVICE STATION

Prepared for:

Wisconsin Department of Transportation

September 22, 1995

ENVIROSCIENCE, INC.
2224 Heimstead Rd.
Eau Claire, WI 54703
Tel 715/835-9311
Fax 715/835-9352

SIGNATURE PAGE

FOR

PHASE II½ ENVIRONMENTAL ASSESSMENT

FOR

THOMAS ABANDONED SERVICE STATION
STATE T.H. 77
IRON COUNTY
WDOT PROJECT ID 9250-09-00

Prepared By: Robert D. Powers Date: 9-22-95

Robert D. Powers
Geologist
Enviroscience, Inc.

Reviewer: Steve Palzkill Date: 9-22-95

Steve Palzkill
Environment Manager
Enviroscience, Inc.

TABLE OF CONTENTS

Section One

EXECUTIVE SUMMARY

1.1 Results and Conclusions

Enviroscience, Inc. has completed a Phase II½ Environmental Assessment of the Thomas Abandoned Service Station site located in the City of Montreal, Wisconsin. The Phase II½ Environmental Assessment was conducted on May 2-4, 1995 for the Wisconsin Department of Transportation (WDOT) State Trunk Highway (STH) 77, Montreal to Hurley, Project I.D. #9250-09-00.

The proposed project is located on State Trunk Highway 77 in Iron County. It begins west of the City of Montreal's corporate limits, at Elm Street, and extends easterly approximately 4.0 miles through the City of Montreal, into the city of Hurley to 6th Avenue. The existing roadway consists of both rural and urban sections.

The urban portion of the project would involve reconstructing the section in the City of Montreal from Bessemer Street approximately 2.0 miles into the City of Hurley to 5th Street. The urban section will be constructed as a 36-foot wide face-to-face curb and gutter section with a storm sewer system.

The results of this assessment are as follows:

- Five soil borings were drilled to depths ranging from 6.5 to 14.5 feet below grade. All borings were located within the existing STH 77 right-of-way.

- Groundwater was encountered at ranges of 4.5 to 10.0 feet below grade in the five borings. Bedrock was encountered in SB-5A.

- Photoionization detector (PID) field screening of soil samples did not indicate the presence of petroleum constituents. Also, visual and olfactory inspection gave no evidence that contamination was present.

- Ten soil samples (two from each boring) were obtained for laboratory analysis. Each boring had one sample for only Diesel Range Organics (DRO) and one for DRO and Petroleum Volatile Organic Compounds (PVOCs). The two samples obtained from SB-1A had detects for DRO at 13 parts per million (ppm) at a depth of 2.5-4.5 feet and 410 ppm at a depth of 5.0-7.0 feet. One sample from SB-3A had a detect also for DRO at 13 ppm. All other sampling parameters did not have any detects.

- Three monitoring wells were installed from SB-3A (MW-2A), SB-4A (MW-3A) and SB-5A (MW-1A). These three wells were sampled on May 4, 1995 for DRO, Volatile Organic Compounds (VOCs) and Polynuclear Aromatic Hydrocarbons (PAHs). There were no detects found in any of these groundwater samples. A second round of sampling on these wells was conducted on June 28, 1995. These samples were analyzed for DRO and PVOC. Again, no detects were found to be above the Method Detection Limits (MDLs).

1.2 Recommendations

Based on the results of this investigation, Enviroscience recommends that if excavation occurs within Station 329+10 to 330+70 from the WDOT right-of-way northwest approximately 25 feet toward the centerline and to a depth of 2.5 to 7.0 feet, Wisconsin Department of Natural Resources (WDNR) guidelines pertaining to the proper removal and treatment or disposal of contaminated soil will need to be followed.

Additionally, Enviroscience recommends that a general permit under the Wisconsin Pollutant Discharge Elimination System (WPDES) for the discharge of water in connection with dewatering operations be applied for by contacting Ms. Kathy Bartilson at the WDNR Northwest District Office in Spooner at 715/635-4053.

Section Two

SITE INVESTIGATION

2.1 Purpose and Scope

The Phase II½ Environmental Site Assessment was performed to determine if soil and/or groundwater in the STH 77 right-of-way has been impacted by the possible release of petroleum products from past operations on the Thomas Abandoned Service Station site. Highway construction is currently being proposed for STH 77 through the City of Montreal to Hurley, WI. The Thomas Abandoned Service Station site is located within the right-of-way of the proposed construction. Current construction plans include increasing the width of the urban section of STH 77 from 22 to 36 feet, resurfacing the roadway and installing storm sewers. This assessment was conducted for Level One, inc. on May 2-4 as part of WDOT Project I.D. #9250-09-00.

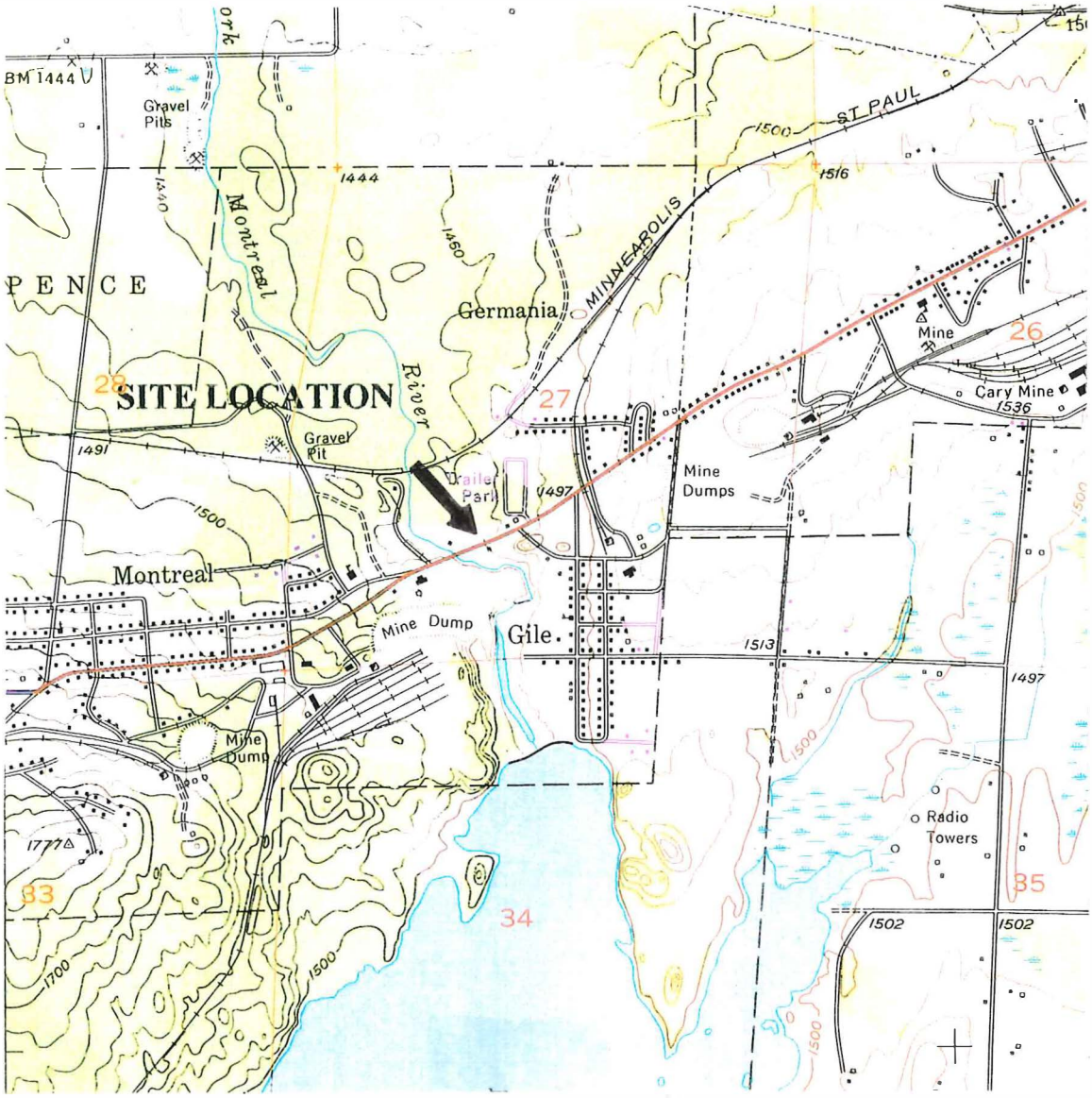
The assessment for this site consisted of the following:

- the advancement of five soil borings;
- field screening of subsurface soil samples every 2.5 feet in depth for the presence of petroleum organic vapors and for visual evidence of petroleum contamination;
- collection and laboratory analysis for of one sample from each boring for DRO and one for DRO and PVOC's;
- installation of three monitoring wells; and
- collection and laboratory analysis of two rounds of groundwater samples from each well with one round being analyzed for DRO, PAHs and VOC's and the second round for DRO and PVOC's.

2.2 Site Description and History

The Thomas site is located approximately one-fifth of one mile north of the Montreal City Hall on STH 77 in the NW¼SW¼, Section 27, T46N, R2E, City of Montreal, Iron County, Wisconsin (Figure 2.1). The site is owned by Mr. Bill Thomas of 24 Nimikon, Gile, Wisconsin. The site consists of one building which is a single story service station with two service bays. The site is not in use for any business presently. The north side of the site is bounded by STH 77 and the adjacent properties to the east and west are undeveloped woods. The Montreal River runs along the south side of the property. The site is illustrated in Figure 2.2.

From information obtained from Mr. Thomas, the site has been inactive since 1989. Prior to ownership by Mr. Thomas, the site was in operation as Saari Brothers Service Station. There are two 1,000 gallon gasoline underground storage tanks (USTs) still in place. A Phase II Environmental Assessment Report was prepared by Enviroscience in relation to soil borings advanced during the May 24-26 site investigation (See Appendix A). These soil borings showed indications that soil contamination was present. Based on that report, further investigation was recommended.

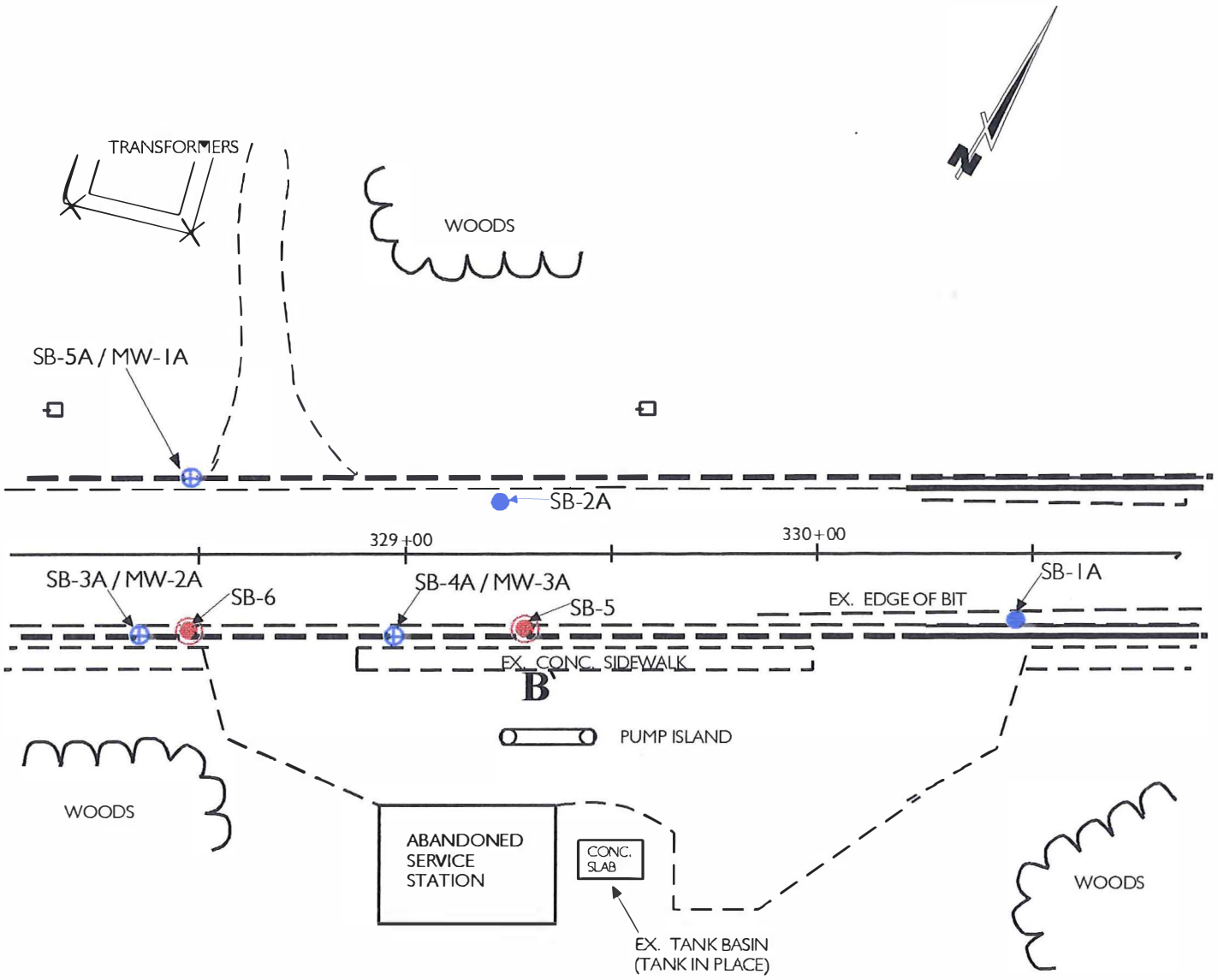


SITE LOCATION

Thomas Abandoned Service Station Site

FIGURE 2-1

ENVIROSCIENCE



LEGEND
SOIL BORING
SOIL BORING COVERTED TO MONITORING WELL
SOIL BORING FROM PREVIOUS INVESTIGATION

APPROX. SCALE: 1" = 40'

FIGURE 2.2

SITE MAP

THOMAS ABANDONED SERVICE STATION
MONTREAL, WI

2.3 Geologic/Hydrogeologic Setting

The City of Montreal is in the northern part of Iron County in the Lake Superior Basin. The subsurface geology in this area is composed of Precambrian crystalline rocks (undifferentiated igneous and metamorphic rocks to the south of Montreal and basaltic lava flows to the north).

The soils are Quaternary ground moraine (glaciolacusterine unstratified clay, silt, sand, gravel, and cobbles). Bedrock is encountered at an average depth of 10 feet. The topography is deeply dissected lake plane. Groundwater in the area of the site generally flows toward the Montreal River.

2.4 Soil Sampling

2.4.1 Sampling Procedures and Locations

Five soil borings were advanced using a hollow stem auger drill rig (Figure 2.2). Soil samples were collected at various intervals for field screening and laboratory analysis. Field methodology is documented in Appendix B. Soil boring logs and abandonment forms are located in Appendix C.

2.4.2 Results of Soil Sampling

A total of 16 headspace samples and ten laboratory samples were collected from the six borings. Organic vapor screening of the soils indicated no detects (ND) as isobutylene gas. Laboratory results are summarized in Table 2.1. Actual laboratory analysis results can be found in Appendix D. All soil samples were analyzed for DRO and one sample from each boring for PVOC's. There were no detects for the PVOC parameters on any of the samples. However, three of the ten samples did indicate a detection for DRO. Both samples from SB-1A taken at the 2.5-4.5 foot interval and the 5.0-7.0 foot interval showed detects for DRO at 79 ppm and 410 ppm respectively. The sample obtained from the 5.0-7.0 foot interval in SB-3A also indicated a detection for DRO at 13 ppm.

2.5 Groundwater Sampling

2.5.1 Installation, Development and Sampling Collection

Three monitoring wells were installed in accordance with the Wisconsin Administrative Code, Chapter NR 141. Monitoring well construction consisted of installation of a 2-inch diameter schedule 40 PVC casing with a ten foot long No. 10 slot well screen. The filter pack consisted of 45-55 red flint sand which was installed from the base of the boring to two feet above the top of the well screen. A filter pack seal, consisting of two feet of find sand, was installed above the filter pack. An annular space seal, consisting of granular bentonite, was installed from

TABLE 2.1
Soil Analytical Results
for
Thomas Abandonded Service Station, Eau Claire, WI
May 3, 1995

SAMPLE #	DRO- 8015	PVOC/GRO- 8020/8015	PID FIELD SCREENING
SB-1A 2.5'-4.5'	13	ND	ND
SB-1A 5.0'-7.0'	410	ND	ND
SB-2A 5.0'-7.0'	ND	ND	ND
SB-2A 7.5'-9.5'	ND	ND	ND
SB-3A 5.0'-7.0'	13	ND	ND
SB-3A 10.0'-12.0'	ND	ND	ND
SB-4 2.5'-4.5	ND	ND	ND
SB-4A 5.0'-7.0'	ND	ND	ND
SB-5A 5.0'-7.0'	ND	ND	ND
SB-5A 10.0'-12.0'	ND	ND	ND

NOTES:
-All results are reported in mg/Kg.
-ND - No Detection
-All analytes not listed were reported by the lab as No Detection in all samples.
-Field screening was performed utilizing a photo ionization detector (PID).

the top of the fine sand to within 1.0 feet of the ground surface. The bentonite was hydrated after installation. A locking protective cover was installed at each well. Monitoring Well Construction Forms (WDNR Form 4400-113A) are included in Appendix E.

Monitoring well development consisted of surging and bailing each well, utilizing a disposable bailer. In accordance with Wisconsin Administrative Code, Chapter NR 141, ten pore volumes of water were removed from each well. Monitoring Well Development Forms (WDNR Form 4400-113B) are included in Appendix E.

The first round of groundwater samples were collected from Monitoring Wells #1 through #3 on May 4, 1995. The second round of groundwater samples was collected on June 26, 1995. Sampling was conducted by an Enviroscience technician in accordance with WDNR "Groundwater Sampling Procedure Guidelines", 1987. Groundwater sampling procedures are documented in Appendix F. Prior to sampling, water levels were measured and four well volumes of water were purged using a disposable bailer. Samples were obtained by lowering the disposable bailer into the well using a nylon line. Samples were transferred directly from the bailers into laboratory provided sample containers.

2.5.2 Groundwater Laboratory Analysis Results

Groundwater samples from both rounds of sampling were transported on ice to PACE Laboratories, Inc. in Minneapolis, Minnesota. The first round of samples were analyzed for DRO, PVOCs and PAHs. The second round was analyzed only for DRO and PVOCs due to the fact that no detects for any of the PAH parameters were found in the first round. Complete laboratory results are included in Appendix G. A summary of the laboratory results are listed in Table 2.2.

In general, the results indicate that no groundwater contamination exists in the WDOT right-of-way associated with the Thomas Abandoned Service Station.

2.5.3 Groundwater Flow

Groundwater elevations at the site were measured by Enviroscience personnel on May 4, 1995 and June 26, 1995. Well data and groundwater elevations for each date are listed in Table 2.3. From the above results, groundwater flow is to the west (Figures 2.3). The local benchmark is the south side of the light pole base located at the south end of the pump island and is set at 100.00 feet.

2.6 Conclusions

This section discusses field observations and analytical data pertaining to observed or potential contamination that may be attributed to the Thomas Abandoned Service Station in Montreal, Wisconsin.

TABLE 2.2
Ground Water Analytical Results
for
Thomas Abandoned Service Station, Montreal, WI

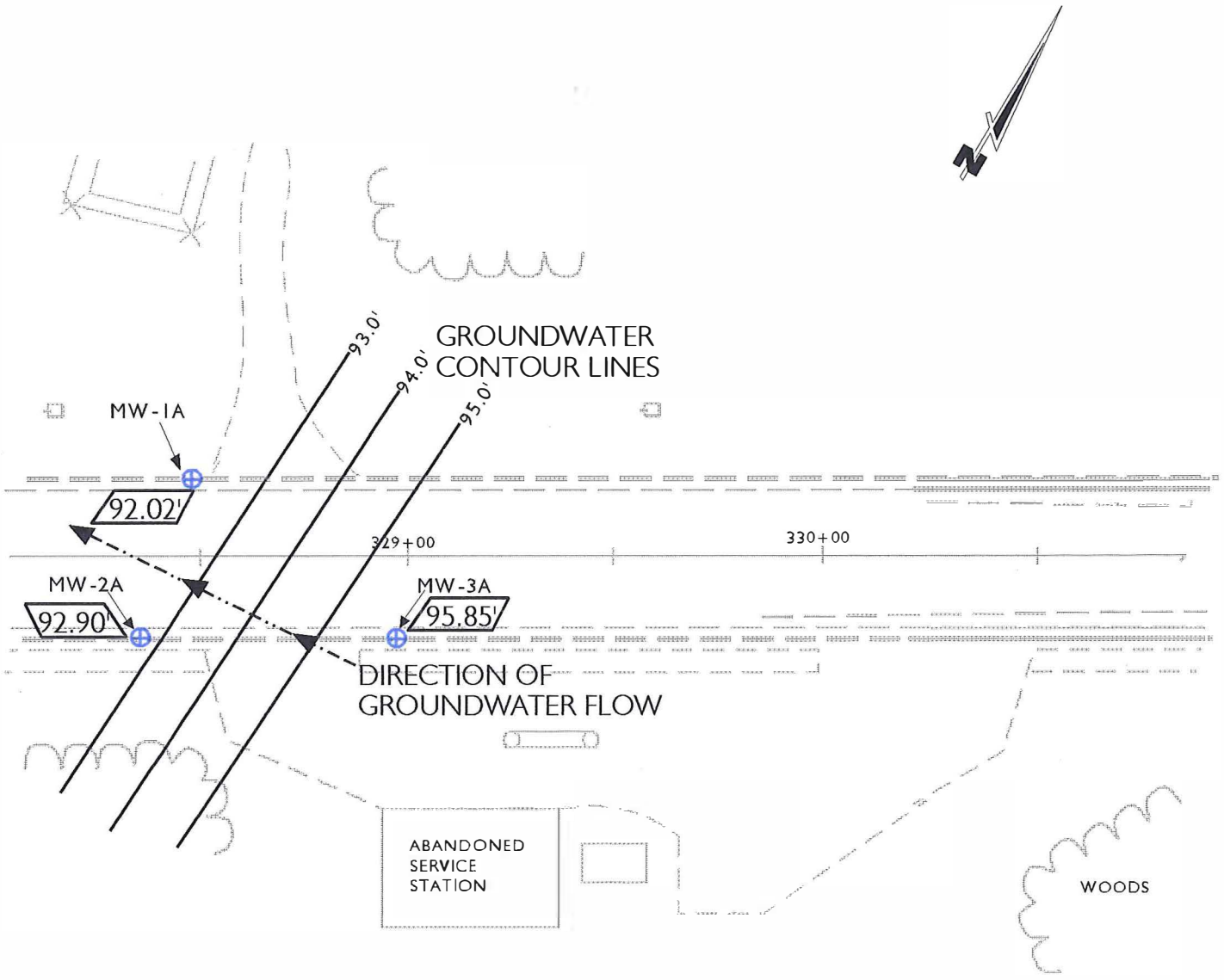
SAMPLE DESCRIPTION	MW-1A		MW-1A DUP		MW-2A		MW-3A	
SAMPLE DATE	05/04/95	06-26-95	05/04/95	06-26-95	05/04/95	06-26-95	05/04/95	06-26-95
GRO-MODIFIED 8015:	NA	ND	NA	ND	NA	ND	NA	ND
PVOC-EPA 8020	NA	ND	NA	ND	NA	ND	NA	ND
DRO-MODIFIED 8015:	ND	ND	ND	ND	ND	ND	ND	ND
PAH-EPA 8310:	ND	NA	ND	NA	ND	NA	ND	NA
VOC's-EPA 8021:	ND	NA	ND	NA	ND	NA	ND	NA

NOTES:
-All results were reported in µg/L.
-ND - No Detection
-NA - Not Analyzed
-All analytes not listed were reported by the lab as No Detection in all samples.

TABLE 2.3
Monitoring Well Data
for
Thomas Abandoned Service Station, Montreal, WI

Well #	Total Well Depth (Ft.)	Top of Well Casing (Ft.)	Ground Water Elevation	
			5-4-95	6-26-95
MW-1A	13.0	98.25	92.25	92.02
MW-2A	14.5	98.73	93.39	92.90
MW-3A	9.5	99.12	96.27	95.85

NOTES:
-Total Well Depth is measured from ground surface.
-Well casing and ground water elevations are measured relative to benchmark set by Enviroscience.
-Benchmark is the south side of the light base on the south end of the pump island. Benchmark was set at 100.00.



LEGEND	
⊕	MONITORING WELL
92.90'	GROUNDWATER ELEVATION IN WELL (6-26-95)

APPROX. SCALE: 1" = 40'

FIGURE 2.3

GROUNDWATER FLOW MAP

THOMAS ABANDONED SERVICE STATION
MONTREAL, WI

2.6.1 Soil Contamination

Laboratory analysis revealed DRO contamination in SB-1A at 2.5 to 4.5 feet and 5.0 to 7.0 feet at 13 ppm and 410 ppm respectively. SB-3A showed levels of DRO contamination of 13 ppm at 5.0 to 7.0 feet. Additionally, from the Phase II Environmental Assessment for the Thomas Abandoned Service Station dated June 1994, SB-5 showed a concentration for DRO of 100 ppm at 5.0 to 7.0 feet. Analysis of soil samples from the borings for PVOCs indicated no detects above the MDLs.

No field screening, visual or olfactory evidence of petroleum contamination was observed during the May 2-4, 1995 site investigation.

The WDNR have set action limits of 100 ppm or greater for removal and treatment of contaminated soils. No petroleum constituents of concern were detected in the samples obtained during this site investigation.

Soil contamination of concern exists from Station 329+10 to 330+70 at depths of 5.0 to 7.0 feet and 2.5 to 4.5 feet respectively (Figures 2.4, 2.5 and 2.6). It is estimated that approximately 237 cubic yards of impacted soil exists within the WDOT right-of-way.

2.6.2 Groundwater Sampling

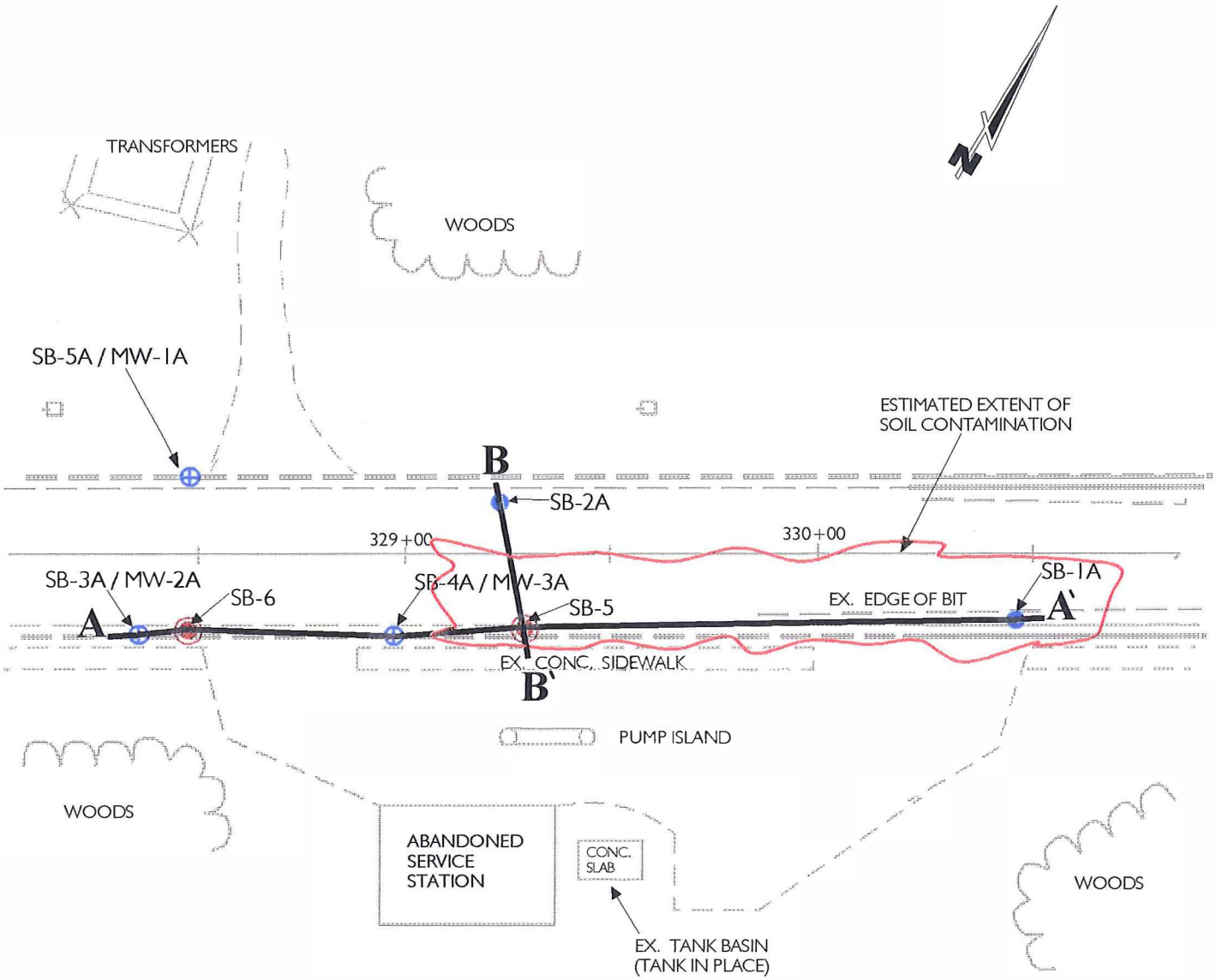
Field observations of groundwater did not indicate any obvious signs of contamination (e.g. odor or petroleum sheen). Laboratory results did not indicate the presence of any PAH, PVOC or DRO parameters. Groundwater was encountered at a depth of five to ten feet.

Based on the facts that two rounds of laboratory analysis have been conducted and no detection of PAHs, PVOCs or DRO have been found in the groundwater in the vicinity of the Thomas Abandoned Service Station, the WDOT right-of-way is not impacted.

2.7 Recommendations

Based on the results of this investigation, Enviroscience recommends that certain actions be taken in relation to activities that are to be anticipated in the right-of-way construction zone:

- The removal and proper treatment or disposal of contaminated soils adjacent to the Thomas Abandoned Service Station site and within the right-of-way construction zone if construction activities occur within the vicinity of soil contamination to a depth where contamination is present.
- Obtain a dewatering permit, if needed, due to a high groundwater table located within this area.



LEGEND
SOIL BORING
SOIL BORING COVERTED TO MONITORING WELL
SOIL BORING FROM PREVIOUS INVESTIGATION

APPROX. SCALE: 1" = 40'

FIGURE 2.4

PLAN VIEW OF CROSS-SECTIONS

THOMAS ABANDONED SERVICE STATION
MONTREAL, WI

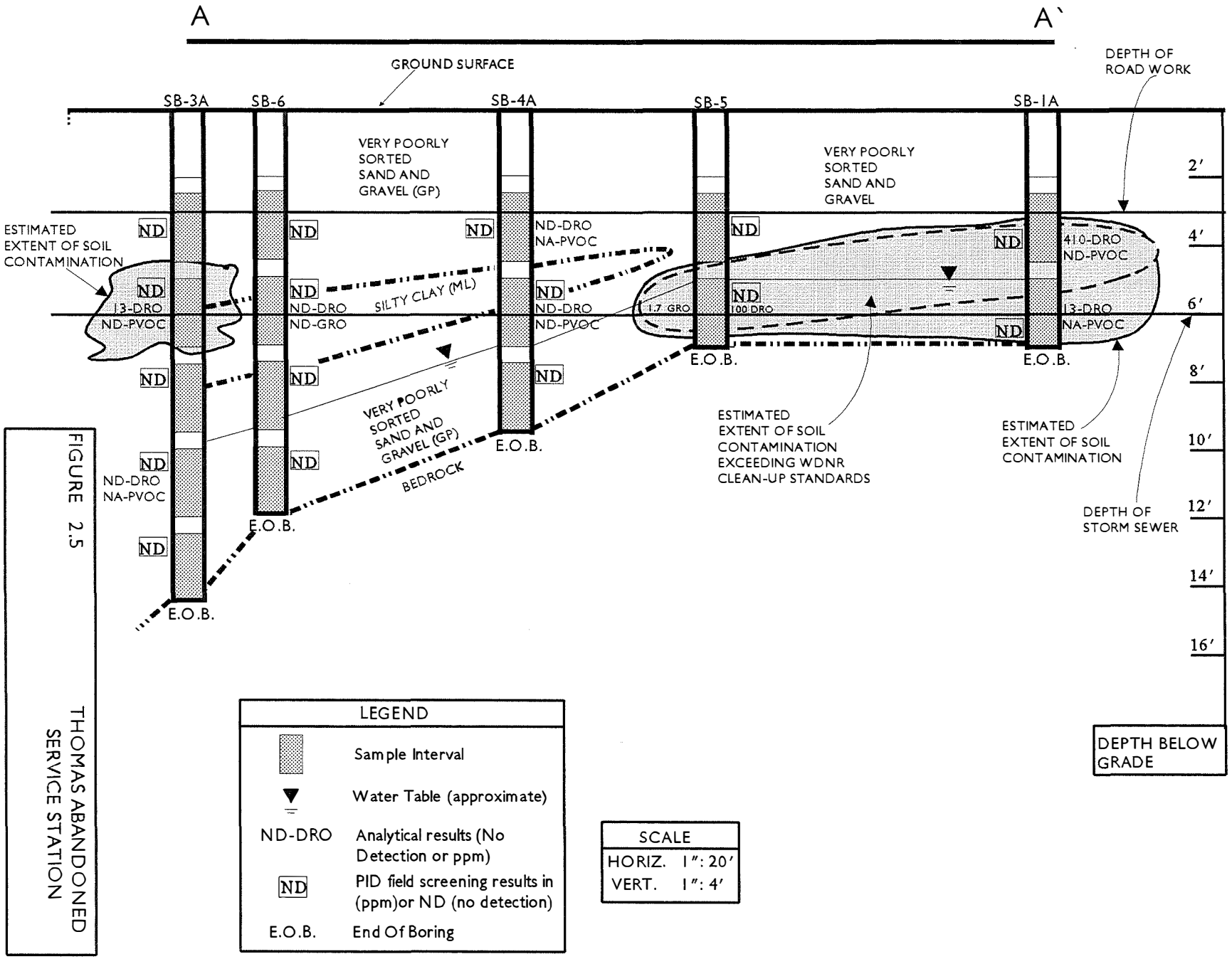
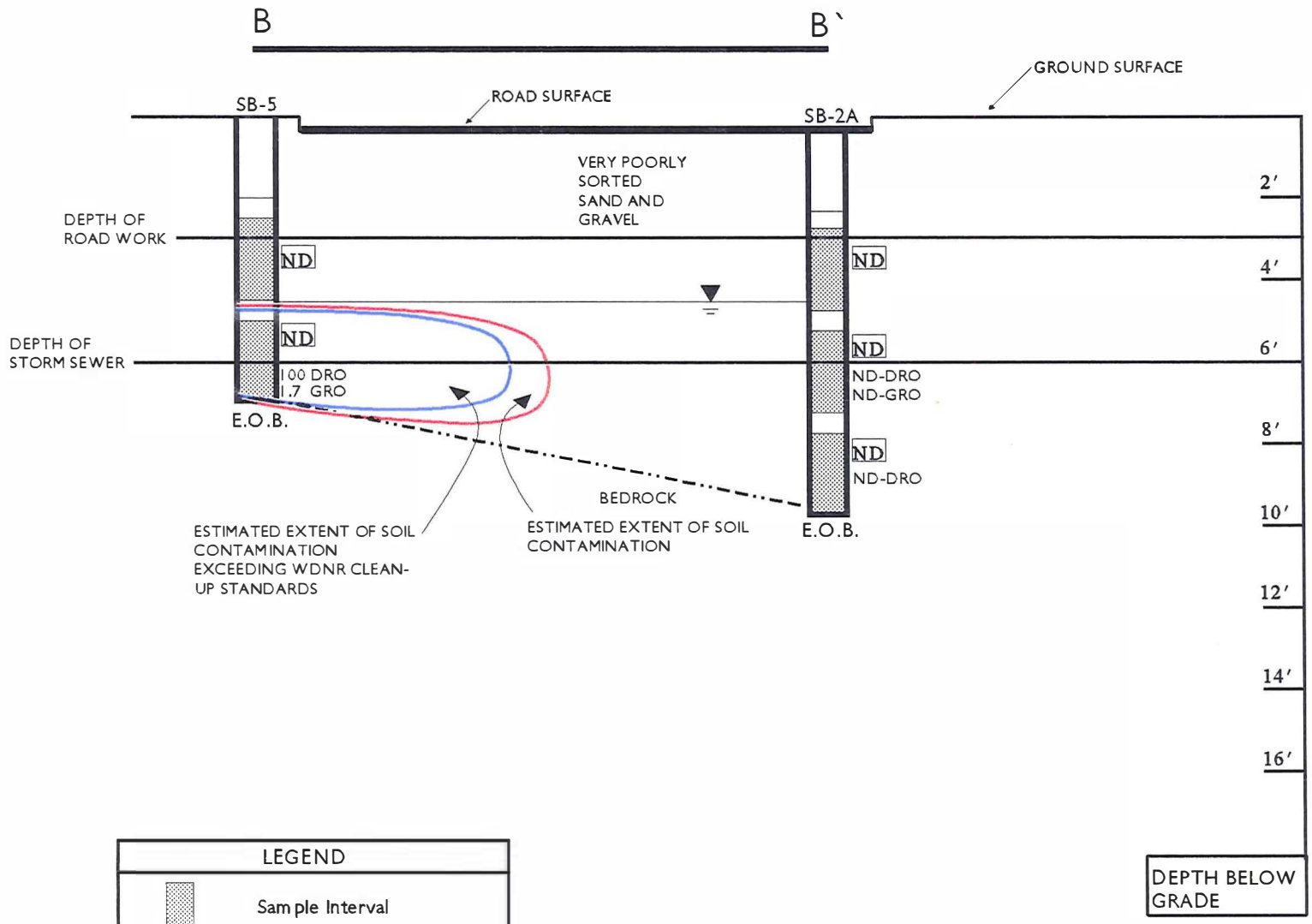


FIGURE 2.5

THOMAS ABANDONED SERVICE STATION



LEGEND	
	Sample Interval
▼	Water Table (approximate)
ND-DRO	Analytical results (No Detection or ppm)
ND	PID field screening results in (ppm)or ND (no detection)
E.O.B.	End Of Boring

SCALE	
HORIZ.	1": 10'
VERT.	1": 4'

FIGURE 2.6

THOMAS ABANDONED SERVICE STATION

CROSS-SECTION B-B`

2.7.1 Soil Contamination

Soil contamination of concern exists from Station 329+10 to Station 330+70 at depths of 5.0 to 7.0 feet and 2.5 to 4.5 feet respectively. It is estimated that approximately 237 cubic yards of impacted soil exists within the WDOT right-of-way. If excavation of soil within the above stations and at a depth where soil contamination exceeds the WDNR action limits of 100 ppm, proper removal and treatment or disposal following WDNR guidelines will need to be followed.

2.7.2 Groundwater Contamination

Laboratory results do not indicate the presence of any PAH, PVOC or DRO parameters. Field observations of groundwater did not indicate any obvious signs of contamination (e.g. odor or petroleum sheen). Based on the above information, Enviroscience concludes that groundwater is not impacted in the vicinity of the WDOT right-of-way adjacent to the Thomas Abandoned Service Station site. Our recommendation is that no action be taken in respect to groundwater within the WDOT right-of-way.

2.7.3 Dewatering Permit

A General Permit to discharge under the WPDES is needed if dewatering activities are required. Dewatering may not be needed due to low storativity (volume of water an aquifer releases) in the vicinity of MW-3A (SB-4A) on Station 329+30. During monitoring well development, MW-3A purged dry giving indication that the volume of water may be limited to a depth of ten feet. MW-1A and MW-2A did not purge dry during development, but are screened to a deeper depth. This gives an indication that storativity in the aquifer may be much higher at depths exceeding ten feet or in close proximity to fractured bedrock.

If dewatering is needed, a WPDES permit would be required to discharge water to the Montreal River. This dewatering operation will comply with the provisions of the General Permit (Appendix H) due to the fact that during groundwater sampling rounds, there were no detects of DRO, PVOCs or PAH parameters. In addition, impacted soil adjacent to the right-of-way showed detects for DRO only. No PVOCs were present in these soils. Dewatering operations could be achieved by the use of wells (not exceeding a 100,000 gallon/day capacity) or trash pumps within the trench.

It is Enviroscience's recommendation that a General Permit under WPDES be applied for in connection with the dewatering operation in this project. This can be accomplished by contacting Ms. Kathy Bartilson at the WDNR Northwest District Office in Spooner at 715/635-4053.

2.8 Standard of Care

The conclusions contained in this report represent our professional opinions. Our opinions are arrived at in accordance with currently accepted hydrogeologic and engineering practices at this time and location. Enviroscience observed the degree of care and skill generally exercised by the profession under similar circumstances and conditions. No other warranty is expressed or implied.

Section Three **APPENDICES**

APPENDIX A

PHASE II

ENVIRONMENTAL ASSESSMENT

FOR

THOMAS ABANDONED SERVICE STATION

STATE T.H. 77

IRON COUNTY

WDOT PROJECT ID 9250-09-00

PEPARED FOR:

WISCONSIN DEPARTMENT

OF TRANSPORTATION

JUNE, 1994

SUBMITTED BY:

ENVIROSCIENCE, INC.
1101 WEST CLAIREMONT AVENUE SUITE 2D
EAU CLAIRE, WI 54701
(715) 835-9311

PHASE II

ENVIRONMENTAL ASSESSMENT

FOR

THOMAS ABANDONED SERVICE STATION

STATE T.H. 77

IRON COUNTY

WDOT PROJECT ID 9250-09-00

Prepared By: _____ Date: 7-12-94

Steven J. Palzkill
Environmental Manager
Enviroscience, Inc.

Reviewed By: _____ Date: 7-12-94

Daryl E. Zuelke
P.E. Vice President
Enviroscience, Inc.

Table of Contents

ABBREVIATIONS

AA	Atomic Absorption, technique used to test for metals
ASTM	American Society for Testing Metals
bg	Below Grade
Cd	Cadmium
DHSS	Department of Health and Human Services
DILHR	Department of Industry, Labor and Human Relations
DRO	Diesel Range Organic
EPA	Environmental Protection Agency
ERP	Environmental Repair Program
FID	Flame Ionization Detector
GC-MS	Gas Chromatograph-Mass Spectrometer
GRO	Gasoline Range Organic
LUST	Leaking Underground Storage Tank
MDL	Minimum Detection Limits
ND	not detected
Pb	Lead
PID	Photo Ionization Detector
ppb	parts per billion
ppm	parts per million, which is equivalent to mg/kg
PVOC	Petroleum Volatile Organic Compound
QC	Quality Control
RP	Responsible Party
TCLP	Toxicity Characteristic Leaching Procedure
UST	Underground Storage Tank
VOC	Volatile Organic Compound
WDOT	Wisconsin Department of Transportation

Section Three

APPENDICES

APPENDIX A

APPENDIX B

SOIL SAMPLING PROCEDURES

Equipment

The following is a list of equipment that was utilized for collecting soil samples:

Soil Sampling Equipment

- Measuring stick
- Appropriate sample containers
- Distilled water
- Alconox®
- Brushes
- Field log book, labels and required forms
- Wash tubs
- Coolers
- Ice
- Packing Material
- Garbage bags
- Disposable gloves

Other Equipment

- 150 ft. tape
- Camera and film

Soil Sampling Procedure

Soil borings were advanced utilizing a truck or track-mounted rotary drill rig using a hollow stem auger. Samples were collected at 2.5 foot intervals utilizing a split-spoon sampling device (sampler) in accordance with DNR PUBL SW-157-92.

Drill cuttings that showed impacts were containerized in 55-gallon drums and sealed. These materials will be properly treated and disposed of offsite or incorporated into the treatment at the time of remediation.

Drilling and Sampling Methods

Soil sampling was performed using hollow-stem auger techniques in accordance with ASTM:D1586-84. As the samples were obtained in the field, they were visually and manually classified by the crew chief in accordance with ASTM:D2488-84. Representative portions of the samples were then returned to the laboratory for further examination and for verification of the field classification. Logs of the borings were prepared indicating the depth and identification of the various strata, screening data, blow counts, water level information, and pertinent information regarding the method of maintaining and advancing the drill holes. WDNR Soil Boring Log Information Forms (Form 4400) and Borehole Abandonment Forms (Form 3300-5B) were completed for each borehole and are located in Appendix B. The boreholes were abandoned properly according to NR 141 Wis. Adm. Code.

As the soil samples were recovered from the borings, they were screened for organic vapors and for visual evidence of contamination as they were recovered from the sampler. The samples were screened with a hNu photoionization detector (PID) equipped with a 10.2 eV lamp and calibrated for direct reading in ppm volume/volume of benzene.

Individual soil samples for laboratory analysis were collected directly from the sampler and placed in 60 ml, laboratory-cleaned, glass, purge-and-trap jars with Teflon-lined, septum-sealed lids. Soil samples for lab analysis were collected at the interval of highest field screening concentration and at the bottom of the boring. The samples were then transported to the laboratory on ice within the prescribed holding times and were accompanied by the proper chain-of-custody forms.

Field Screening

As the samples were recovered from the soil boring, a portion of the sample was placed in a plastic Ziploc® bag for organic vapor screening with a hNu PID . The plastic bag was set aside for 15 minutes to allow for headspace development. Following headspace development, a small space was then opened in the bag, and the PID probe was inserted. The sample was gently agitated while the probe was inserted in the bag, and the vapor concentration was recorded in the field log book.

Equipment Decontamination

All sampling equipment was decontaminated between samples. The decontamination procedures were as follows:

1) Alconox® wash and brushing to remove particles.
2) Tap water rinse.
3) Triple rinse with distilled water.

Decontamination activities were performed at one convenient location. Equipment was decontaminated before any drilling began, between each sample, and upon completion of the sampling each day.

Sample Handling

Sample packaging, chain-of-custody, and shipping procedures followed the guidelines of WDNR and laboratory requirements. Field samples were collected in appropriately labeled sample containers and placed in a cooler on ice. Once the samples for the day were acquired and the required paperwork completed, the samples were then packed on ice and shipped to the laboratory.

Each cooler/shipment had a chain-of-custody form for the samples it contained. These forms were placed into a plastic Ziploc® bag and placed inside the cooler. Each cooler/shipment was securely sealed with several pieces of strapping tape attached to the front and rear sides.

Field Documentation

Documentation prepared in the field included hNu log, chain-of-custody forms and a field log book.

All soil samples were described in the field log book. The description included, but was not limited to, USCS classification and ASTM.D2488-84 nomenclature. Enviroscience ensured that the sampling methods and equipment used were capable of obtaining adequate volume for all required analytical parameters.

Field observations were recorded in a field log book in sufficient detail by the field geologist. This was done so that decision logic could be traced back when reviewed, or data comparison could be accomplished once off-site analytical results became available. Indelible ink was used for all entries. A brief listing of pertinent data that was recorded in the field log book is as follows, but was not limited to:

1) Date/time
2) Sample location
3) Weather information
4) Instrument calibration data
5) Brief description of sample matrix and any visual observations
6) Number of samples obtained, ID number, number and type of containers used, preservation methods used
7) Any comments, remarks about field activities
8) Sampler's name and initials

Laboratory Analytical Methodology

Soil samples were sent to the laboratory for analysis of Diesel Range Organics (DRO) and Petroleum Volatile Organic Compounds (PVOCs).

Quality Assurance/Quality Control

The samples were transferred under chain-of-custody procedures to a qualified laboratory.

One method blank were analyzed with each sampling round. A temperature blank was also included with each cooler containing samples.

Investigative Waste

All soil cuttings were field screened on site and those that were impacted were containerized and left on site.

APPENDIX C

APPENDIX D

PACE INCORPORATED
ENVIRONMENTAL LABORATORIES

REPORT OF LABORATORY ANALYSIS

Enviroscience, Inc.
2224 Heimstead Rd.
Eau Claire, WI 54703

May 16, 1995
PACE Project Number: 950505530

Attn: Mr. Bob Powers

Client Reference: Thomas

Parameter	Units	PRL	10 0123064 05/02/95 18:10 05/05/95 SB-1A 2.5-4.5	10 0123072 05/02/95 18:15 05/05/95 SB-1A 5-7	10 0123080 05/03/95 08:20 05/05/95 SB-2A 5-7'
PACE Sample Number:					
Date Collected:					
Time Collected:					
Date Received:					
INORGANIC ANALYSIS					
INDIVIDUAL PARAMETERS					
Moisture content	%	0.1	7.7	5.4	10.4
ORGANIC ANALYSIS					
DIESEL RANGE ORGANICS-MOD. 8015					
Date Analyzed			12MAY95 RR	12MAY95 RR	14MAY95 RR
Date Extracted			05/09/95	05/09/95	05/09/95
Diesel Range Organic Compounds	mg/kg	7.6	-	-	ND HB
Diesel Range Organic Compounds	mg/kg	7.8	13 HB	410 HB	-
Pentacosane (Surrogate Std.)	%		79	89	56
Elapse Time, Receipt to Solvent Addition	Minutes	10	1095	1095	1095
PVOC/GRO IN SOIL-METHODS 8020/MOD. 8015					
Date Analyzed			-	10MAY95 E	10MAY95 E
Benzene	mg/kg	0.10	-	ND	ND
Toluene	mg/kg	0.10	-	ND	ND
Ethyl benzene	mg/kg	0.10	-	ND	ND
Xylene	mg/kg	0.20	-	ND	ND
1,3,5-Trimethylbenzene	mg/kg	0.10	-	ND	ND
1,2,4-Trimethylbenzene	mg/kg	0.10	-	ND	ND
Methyl tert-butyl ether	mg/kg	0.40	-	ND	ND
Gasoline Range Organic Compounds	mg/kg	5.0	-	ND HB	ND
Fluorobenzene (Surrogate)	%		-	105	105

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REPORT OF LABORATORY ANALYSIS

Mr. Bob Powers
Page 2

May 16, 1995
PACE Project Number: 950505530

Client Reference: Thomas

Parameter	Units	PRL	10 0123099 05/03/95 08:30 05/05/95 SB-2A 7.5-9.5'	10 0123102 05/03/95 13:20 05/05/95 SB-3A 5-7'	10 0123110 05/03/95 13:40 05/05/95 SB-3A 10-12'
PACE Sample Number:					
Date Collected:					
Time Collected:					
Date Received:					
Client Sample ID:					
INORGANIC ANALYSIS					
INDIVIDUAL PARAMETERS					
Moisture content	%	0.1	10.0	11.6	15.6
ORGANIC ANALYSIS					
DIESEL RANGE ORGANICS-MOD. 8015					
Date Analyzed			13MAY95 RR	14MAY95 RR	14MAY95 RR
Date Extracted			05/10/95	05/10/95	05/10/95
Diesel Range Organic Compounds	mg/kg	7.8	ND	13 HB	-
Diesel Range Organic Compounds	mg/kg	8.3	-	-	ND
Pentacosane (Surrogate Std.)	%		84	56	70
Elapse Time, Receipt to Solvent Addition	Minutes	10	1095	1095	1095
PVOC/GRO IN SOIL-METHODS 8020/MOD. 8015					
Date Analyzed			-	10MAY95 E	-
Benzene	mg/kg	0.11	-	ND	-
Toluene	mg/kg	0.11	-	ND	-
Ethyl benzene	mg/kg	0.11	-	ND	-
Xylene	mg/kg	0.21	-	ND	-
1,3,5-Trimethylbenzene	mg/kg	0.11	-	ND	-
1,2,4-Trimethylbenzene	mg/kg	0.11	-	ND	-
Methyl tert-butyl ether	mg/kg	0.43	-	ND	-
Gasoline Range Organic Compounds	mg/kg	5.4	-	ND	-
Fluorobenzene (Surrogate)	%		-	108	-

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ENVIRONMENTAL LABORATORIES

REPORT OF LABORATORY ANALYSIS

May 16, 1995
PACE Project Number: 950505530

Client Reference: Thomas

Parameter	Units	PRL	10 0123129 05/03/95 14:35 05/05/95 SB-4A 2.5-4.5'	10 0123137 05/03/95 14:45 05/05/95 SB-4A 5-7'	10 0123145 05/03/95 09:45 05/05/95 SB-5A 5-7'
PACE Sample Number:					
Date Collected:					
Time Collected:					
Date Received:					
Client Sample ID:					
INORGANIC ANALYSIS					
INDIVIDUAL PARAMETERS					
Moisture content	%	0.1	12.2	10.8	13.0
ORGANIC ANALYSIS					
DIESEL RANGE ORGANICS-MOD. 8015					
Date Analyzed			14MAY95 RR	14MAY95 RR	14MAY95 RR
Date Extracted			05/10/95	05/10/95	05/10/95
Diesel Range Organic Compounds	mg/kg	10	-	-	ND
Diesel Range Organic Compounds	mg/kg	7.4	ND	-	-
Diesel Range Organic Compounds	mg/kg	8.3	-	ND HB	-
Pentacosane (Surrogate Std.)	%		98	70	86
Elapse Time, Receipt to Solvent Addition	Minutes	10	1095	1095	1095
PVOC/GRO IN SOIL-METHODS 8020/MOD. 8015					
Date Analyzed			-	10MAY95 E	10MAY95 E
Benzene	mg/kg	0.10	-	ND	ND
Toluene	mg/kg	0.10	-	ND	ND
Ethyl benzene	mg/kg	0.10	-	ND	ND
Xylene	mg/kg	0.20	-	ND	ND
1,3,5-Trimethylbenzene	mg/kg	0.10	-	ND	ND
1,2,4-Trimethylbenzene	mg/kg	0.10	-	ND	ND
Methyl tert-butyl ether	mg/kg	0.40	-	ND	ND
Gasoline Range Organic Compounds	mg/kg	5.0	-	ND	ND
Fluorobenzene (Surrogate)	%		-	95.3	100

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PACE INCORPORATED
ENVIRONMENTAL LABORATORIES

REPORT OF LABORATORY ANALYSIS

May 16, 1995
PACE Project Number: 950505530

Client Reference: Thomas

PACE Sample Number:			10 0123153
Date Collected:			05/03/95
Time Collected:			10:05
Date Received:			05/05/95
Client Sample ID:			SB-5A
Parameter	Units	PRL	10-12'
INORGANIC ANALYSIS			
INDIVIDUAL PARAMETERS			
Moisture content	%	0.1	12.2
ORGANIC ANALYSIS			
DIESEL RANGE ORGANICS-MOD. 8015			
Date Analyzed			14MAY95 RR
Date Extracted			05/10/95
Diesel Range Organic Compounds	mg/kg	10	ND
Pentacosane (Surrogate Std.)	%		72
Elapse Time, Receipt to Solvent Addition	Minutes	10	1095
PVOC/GRO IN SOIL-METHODS 8020/MOD. 8015			
Date Analyzed			10MAY95 E
Benzene	mg/kg	0.10	ND
Toluene	mg/kg	0.10	ND
Ethyl benzene	mg/kg	0.10	ND
Xylene	mg/kg	0.20	ND
1,3,5-Trimethylbenzene	mg/kg	0.10	ND
1,2,4-Trimethylbenzene	mg/kg	0.10	ND
Methyl tert-butyl ether	mg/kg	0.40	ND
Gasoline Range Organic Compounds	mg/kg	5.0	ND
Fluorobenzene (Surrogate)	%		107

Sample results are reported on a dry weight basis.

The surrogate recovery for DRO analysis of sample "SB-3A, 5-7'" was below PACE acceptance criteria of 65%. Spike recovery for the laboratory control sample and sample duplicate were within acceptance criteria and the low surrogate recovery is attributed to matrix affects.

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REPORT OF LABORATORY ANALYSIS

May 16, 1995
PACE Project Number: 950505530

Client Reference: Thomas

These data have been reviewed and are approved for release.

Paul D. Ernst
Project Manager

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Minneapolis, MN 55422
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REPORT OF LABORATORY ANALYSIS

FOOTNOTES
for pages 1 through 5

Client Reference: Thomas

HB	High boiling point hydrocarbons are present in sample.
ND	Not detected at or above the PRL.
PRL	PACE Reporting Limit

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PACE INCORPORATED
ENVIRONMENTAL LABORATORIES

REPORT OF LABORATORY ANALYSIS

QUALITY CONTROL DATA

May 16, 1995
PACE Project Number: 950505530

Client Reference: Thomas

Moisture content
Batch: 10 68165
Samples: 10 0123064, 10 0123072, 10 0123080, 10 0123099, 10 0123102
10 0123110, 10 0123129, 10 0123137, 10 0123145, 10 0123153

METHOD BLANK AND SAMPLE DUPLICATE:

Parameter	Units	PRL	Method Blank	100123099 SB-2A 7.5-9.5'	Duplicate of 10 0123099	RPD
Moisture content	%	0.1	ND	10.0	10.2	2%

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TEL: 612-544-5543
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Client Reference: Thomas

DIESEL RANGE ORGANICS-MOD. 8015
Batch: 10 68439
Samples: 10 0123064, 10 0123072, 10 0123080

METHOD BLANK:

Parameter	Units	PRL	Method Blank
Date Analyzed			11MAY95
Diesel Range Organic Compounds	mg/kg	10	ND
Pentacosane (Surrogate Std.)	%		102

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

Parameter	Units	PRL	Reference Value	Recv	Dupl Recv	RPD
Diesel Range Organic Compounds	mg/kg	10	200	80%	85%	6%

ENVIRONMENTAL LABORATORIES

REPORT OF LABORATORY ANALYSIS

QUALITY CONTROL DATA

May 16, 1995
PACE Project Number: 950505530

Client Reference: Thomas

DIESEL RANGE ORGANICS-MOD. 8015
Batch: 10 68446
Samples: 10 0123099, 10 0123102, 10 0123110, 10 0123129, 10 0123137
10 0123145, 10 0123153

METHOD BLANK:

Parameter	Units	PRL	Method Blank
Date Analyzed			13MAY95
Diesel Range Organic Compounds	mg/kg	10	ND
Pentacosane (Surrogate Std.)	%		71

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

Parameter	Units	PRL	Reference Value	Recv	Dupl Recv	RPD
Diesel Range Organic Compounds	mg/kg	10	200	100%	80%	22%

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ENVIRONMENTAL LABORATORIES

REPORT OF LABORATORY ANALYSIS

QUALITY CONTROL DATA

May 16, 1995
PACE Project Number: 950505530

Client Reference: Thomas

PVOC/GRO IN SOIL-8020/MOD. 8015
Batch: 10 68328
Samples: 10 0123072, 10 0123080, 10 0123102, 10 0123137, 10 0123145
10 0123153

METHOD BLANK:

Parameter	Units	PRL	Method Blank
Date Analyzed			10MAY95
Benzene	mg/kg	0.10	ND
Toluene	mg/kg	0.10	ND
Ethyl benzene	mg/kg	0.10	ND
Xylene	mg/kg	0.20	ND
1,3,5-Trimethylbenzene	mg/kg	0.10	ND
1,2,4-Trimethylbenzene	mg/kg	0.10	ND
Methyl tert-butyl ether	mg/kg	0.40	ND
Gasoline Range Organic Compounds	mg/kg	5.0	ND
Fluorobenzene (Surrogate)	%		111

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

Parameter	Units	PRL	Reference Value	Recv	Dupl Recv	RPD
Benzene	mg/kg	0.10	10	104%	104%	0%
Toluene	mg/kg	0.10	10	107%	107%	0%
Ethyl benzene	mg/kg	0.10	10	108%	107%	1%
Xylene	mg/kg	0.20	30	107%	109%	2%
1,3,5-Trimethylbenzene	mg/kg	0.10	10	109%	109%	0%
1,2,4-Trimethylbenzene	mg/kg	0.10	10	106%	106%	0%

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Client Reference: Thomas

ND	Not detected at or above the PRL.
PRL	PACE Reporting Limit
RPD	Relative Percent Difference

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ENVIRONMENTAL LABORATORIES

CHAIN-OF-CUSTODY RECORD
Analytical Request

Client: Enviroscience
Address: 2224 Heimstead Rd
Eau Claire, WI 54703
Phone: 715 835 4311

Report To: Enviroscience
Bill To: Enviroscience
P.O. # / Billing Reference:
Project Name / No.: Thomas

Pace Client No.: 015702
Pace Project Manager: PDE
Pace Project No.: 950505-530
*Requested Due Date: 5-15-95

Sampled By (PRINT): Bob Powers
Bob Powers — Sampler Signature
5-3-95 — Date Sampled
(SB-1A on 5-2-95)

ITEM NO.	SAMPLE DESCRIPTION	TIME	MATRIX	PACE NO.	NO. OF CONTAINERS	PRESERVATIVES: UNPRESERVED	H_2SO_4	HNO_3	VOA	Hot MeOH	ANALYSES REQUEST: DRO	% moisture	PVOC	REMARKS
1	Thomas SB-1A 2.5-4.5'	6:40 pm	Soil	12306.4	2	2					1	1		
2	SB-1A 5-7'	6:15 pm	Soil	12307.2	4	2			2		1	1	2	
3	SB-2A 5-7'	8:20 am	"	12308.0	4	2			2		1	1	2	
4	SB-2A 7.5-9.5'	8:30 am	"	12309.9	2	2					1	1		
5	SB-3A 5-7'	1:20	"	12310.2	4	2			2		1	1	2	
6	SB-3A 10-12'	1:40	"	12311.0	2	2					1	1		
7	SB-4A 2.5-4.5'	2:35	"	12312.9	2	2					1	1		
8	SB-4A 5-7'	2:45	"	12313.7	4	2			2		1	1	2	

COOLER NOS.	BAILERS	SHIPMENT METHOD OUT / DATE	SHIPMENT METHOD RETURNED / DATE

Additional Comments

ITEM NUMBER	RELINQUISHED BY / AFFILIATION	ACCEPTED BY / AFFILIATION	DATE	TIME
1	Bob Powers		5/5/95	1535

ORIGINAL

SEE REVERSE SIDE FOR INSTRUCTIONS

pace INCORPORATED
ENVIRONMENTAL LABORATORIES

207693

CHAIN-OF-CUSTODY RECORD
Analytical Request

Client: Enviroscience
Address: 2224 Heimstead Rd
Eau Claire, WI 54703
Phone: 715 835 9311

Report To: Enviroscience
Bill To: Enviroscience
P.O. # / Billing Reference
Project Name / No.: Thomas

Pace Client No.: 015702
Pace Project Manager: PDE
Pace Project No.: 95205505.532
*Requested Due Date: 5-15-95

Sampled By (PRINT): Bob Powers
Bob Powers 5-3-95
Sampler Signature / Date Sampled

ITEM NO.	SAMPLE DESCRIPTION	TIME	MATRIX	PACE NO.	NO. OF CONTAINERS	PRESERVATIVES: UNPRESERVED	H_2SO_4	HNO_3	VOA	MeOH	ANALYSES REQUEST: DRO	% moisture	PVOC	REMARKS
1	SB-5A 5-7'	9:45	Soil	12314.5	4	2			2		1	1	2	
2	SB-5A 10-12'	10:05	"	12315.3	4	2			2		1	1	2	
3														
4														
5														
6														
7														
8														

COOLER NOS.	BAILERS	SHIPMENT METHOD OUT / DATE	SHIPMENT METHOD RETURNED / DATE

Additional Comments

ITEM NUMBER	RELINQUISHED BY / AFFILIATION	ACCEPTED BY / AFFILIATION	DATE	TIME
1-2	Bob Powers		5/5/95	1535

ORIGINAL

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APPENDIX E

APPENDIX F

GROUNDWATER SAMPLING PROCEDURES

Equipment

The following is a list of equipment that was required for the groundwater monitoring well sampling:

- Disposable bailer
- Nylon rope
- pH meter
- Conductivity meter
- Thermometer
- Stainless steel bucket
- Graduated five gallon pails
- Sample bottles
- Sample labels
- Cooler
- Ice
- Disposable gloves
- Decontamination equipment
- Garbage bags
- Water level indicator

Groundwater Sampling Procedure

To ensure that each sample was representative of the ambient groundwater, a minimum of four well volumes were removed from each monitoring well prior to sampling. When possible, samples were collected when the pH, specific conductivity and temperature had been stabilized. Groundwater samples were collected using a dedicated, bottom-loading disposable bailer and new nylon rope. A bottom emptying bailer was used to minimize turbulence when transferring samples to the vials. The samples from the wells were collected in three 40ml glass vials and a one liter glass container. The samples were cooled on ice to 4°C.

Equipment Decontamination

All sampling equipment was decontaminated between samples. The decontamination procedures were as follows:

1. Alconox® wash
2. Tap water rinse .
3. Triple rinse with distilled water

Decontamination activities were performed at one convenient location. Equipment was decontaminated before any sampling began, between each sample, and upon completion of the sampling each day. All disposable equipment was properly disposed of after use.

Sample Handling

Sample packaging, chain-of-custody, and shipping procedures followed the guidelines of WDNR and laboratory requirements. Field samples were collected in appropriately

labeled sample containers and placed in a cooler on ice. Once the samples for the day were acquired, and the required paperwork completed, the samples were packed on ice and shipped to the laboratory.

Each cooler/shipment had a chain-of-custody form for the samples it contained. These forms were placed into a plastic Ziploc® bag and taped to the inside lid. Each cooler/shipment was securely sealed with several pieces of strapping tape attached to the front and rear sides.

Field Screening

As the samples were recovered from the bailer, a portion of the sample was placed in a plastic Ziploc® bag for organic vapor screening with a PID. The plastic bag was set aside for 15 minutes to allow for headspace development. Following headspace development, a small space was opened in the bag, and the PID probe was inserted. The sample was gently agitated while the probe was inserted in the bag, and the vapor concentration was recorded.

Field Documentation

All necessary information for water sampling was recorded on field sampling data sheets and in a field sampling log book. This information included sample type(s) taken, sample identification number, project name, project location, label identification (if applicable), all field measurements, casing volume calculations, the date, sample location, well identification, starting time for purging, ending time for purging, purging volume, general well condition, time of sampling, field sampler's name(s), physical characteristics of sample (i.e., color, turbidity, odor, etc.) and comments.

Laboratory Analytical Methodology

Groundwater samples sent to the laboratory for analysis were analyzed for Petroleum Volatile Organic Compounds (VOCs) using EPA Method 5030/8021, DRO using WDNR Modified DRO Methods, and Polynuclear Aromatic Hydrocarbons (PAHs).

Quality Assurance/Quality Control

The samples were transferred under chain-of-custody procedures to a qualified laboratory.

One duplicate sample, one field blank, and one trip blank were analyzed with each sampling round. A temperature blank was also collected per sampling event.

Investigative Waste

Any well purging liquid was contained and disposed of accordingly.

APPENDIX G

PACE INCORPORATED
ENVIRONMENTAL LABORATORIES

REPORT OF LABORATORY ANALYSIS

Enviroscience, Inc.
2224 Heimstead Rd.
Eau Claire, WI 54703

July 19, 1995
PACE Project Number: 950629505

Attn: Mr. Bob Powers

Client Reference: Thomas

Parameter	Units	PRL	10 0187593 MW-3A	10 0187607 MW-2A	10 0187623 MW-1A
PACE Sample Number:			10 0187593	10 0187607	10 0187623
Date Collected:			06/26/95	06/26/95	06/26/95
Time Collected:			10:30	13:30	12:15
Date Received:			06/28/95	06/28/95	06/28/95
Client Sample ID:			Thomas	Thomas	Thomas
ORGANIC ANALYSIS					
DIESEL RANGE ORGANICS-MOD. 8015					
Date Analyzed			15JUL95 CC	15JUL95 CC	15JUL95 CC
Date Extracted			07/02/95	07/02/95	07/02/95
Diesel Range Organic Compounds	mg/L	0.10	ND	ND	ND
Pentacosane (Surrogate Std.)	%		80	91	90
PVOC/GRO IN WATER-METHODS 8020/MOD. 8015					
Date Analyzed			07JUL95 E	05JUL95 I	04JUL95 B
Benzene	ug/L	1.0	ND	ND	ND
Toluene	ug/L	1.0	ND	ND	ND
Ethylbenzene	ug/L	1.0	ND	ND	ND
Xylenes	ug/L	2.0	ND	ND	ND
1,3,5-Trimethylbenzene	ug/L	1.0	ND	ND	ND
1,2,4-Trimethylbenzene	ug/L	1.0	ND	ND	ND
Methyl tert-butyl ether	ug/L	4.0	ND	ND	ND
Gasoline Range Organic Compounds	ug/L	50	ND	ND	ND
Fluorobenzene (Surrogate)	%		106	89.3	115

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PACE INCORPORATED
ENVIRONMENTAL LABORATORIES

REPORT OF LABORATORY ANALYSIS

July 19, 1995
PACE Project Number: 950629505

Client Reference: Thomas

Parameter	Units	PRL		
PACE Sample Number:			10 0187631	10 0187658
Date Collected:			06/26/95	06/26/95
Time Collected:			12:20	12:30
Date Received:			06/28/95	06/28/95
Client Sample ID:			Thomas MW-1A DUP	Thomas Field Blank
ORGANIC ANALYSIS				
DIESEL RANGE ORGANICS-MOD. 8015				
Date Analyzed			15JUL95 CC	-
Date Extracted			07/02/95	-
Diesel Range Organic Compounds	mg/L	0.10	ND	-
Pentacosane (Surrogate Std.)	%		79	-
PVOC/GRO IN WATER-METHODS 8020/MOD. 8015				
Date Analyzed			04JUL95 B	05JUL95 I
Benzene	ug/L	1.0	ND	ND
Toluene	ug/L	1.0	ND	ND
Ethylbenzene	ug/L	1.0	ND	ND
Xylenes	ug/L	2.0	ND	ND
1,3,5-Trimethylbenzene	ug/L	1.0	ND	ND
1,2,4-Trimethylbenzene	ug/L	1.0	ND	ND
Methyl tert-butyl ether	ug/L	4.0	ND	ND
Gasoline Range Organic Compounds	ug/L	50	ND	ND
Fluorobenzene (Surrogate)	%		116	89.7

These data have been reviewed and are approved for release.

Paul D. Ernst
Project Manager

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REPORT OF LABORATORY ANALYSIS

FOOTNOTES
for pages 1 through 2

Client Reference: Thomas

ND	Not detected at or above the PRL.
PRL	PACE Reporting Limit

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REPORT OF LABORATORY ANALYSIS

Mr. Bob Powers
Page 4

QUALITY CONTROL DATA

July 19, 1995
PACE Project Number: 950629505

Client Reference: Thomas

DIESEL RANGE ORGANICS-MOD. 8015
Batch: 10 71400
Samples: 10 0187593, 10 0187607, 10 0187623, 10 0187631

METHOD BLANK:

Parameter	Units	PRL	Method Blank
Date Analyzed			15JUL95
Diesel Range Organic Compounds	mg/L	0.10	ND
Pentacosane (Surrogate Std.)	%		74

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

Parameter	Units	PRL	Reference Value	Recv	Dupl Recv	RPD
Diesel Range Organic Compounds	mg/L	0.10	1.0	84%	75%	11%

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Client Reference: Thomas

PVOC/GRO IN WATER-METHODS 8020/MOD. 8015
Batch: 10 70896
Samples: 10 0187607, 10 0187658

METHOD BLANK:

Parameter	Units	PRL	Method Blank
Date Analyzed			05JUL95
Benzene	ug/L	1.0	ND
Toluene	ug/L	1.0	ND
Ethylbenzene	ug/L	1.0	ND
Xylenes	ug/L	2.0	ND
1,3,5-Trimethylbenzene	ug/L	1.0	ND
1,2,4-Trimethylbenzene	ug/L	1.0	ND
Methyl tert-butyl ether	ug/L	4.0	ND
Gasoline Range Organic Compounds	ug/L	50	ND
Fluorobenzene (Surrogate)	%		89.8

SPIKE AND SPIKE DUPLICATE:

Parameter	Units	PRL	100185027	Spike	Spike Recv	Spike Dupl Recv	RPD
Benzene	ug/L	1.0	ND	100	104%	103%	1%
Toluene	ug/L	1.0	ND	100	103%	102%	1%
Ethylbenzene	ug/L	1.0	ND	100	102%	102%	0%
Xylenes	ug/L	2.0	ND	300	106%	105%	1%
1,3,5-Trimethylbenzene	ug/L	1.0	ND	100	105%	103%	2%
1,2,4-Trimethylbenzene	ug/L	1.0	ND	100	102%	101%	1%

LABORATORY CONTROL SAMPLE:

Parameter	Units	PRL	Reference Value	Recv
Benzene	ug/L	1.0	100	102%
Toluene	ug/L	1.0	100	100%
Ethylbenzene	ug/L	1.0	100	99%
Xylenes	ug/L	2.0	300	102%
1,3,5-Trimethylbenzene	ug/L	1.0	100	101%
1,2,4-Trimethylbenzene	ug/L	1.0	100	96%
Methyl tert-butyl ether	ug/L	4.0	100	101%
Gasoline Range Organic Compounds	ug/L	50	1000	101%

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ENVIRONMENTAL LABORATORIES

REPORT OF LABORATORY ANALYSIS

QUALITY CONTROL DATA

July 19, 1995
PACE Project Number: 950629505

Client Reference: Thomas

PVOC/GRO IN WATER-METHODS 8020/MOD. 8015
Batch: 10 71019
Samples: 10 0187593

METHOD BLANK:

Parameter	Units	PRL	Method Blank
Date Analyzed			07JUL95
Benzene	ug/L	1.0	ND
Toluene	ug/L	1.0	ND
Ethylbenzene	ug/L	1.0	ND
Xylenes	ug/L	2.0	ND
1,3,5-Trimethylbenzene	ug/L	1.0	ND
1,2,4-Trimethylbenzene	ug/L	1.0	ND
Methyl tert-butyl ether	ug/L	4.0	ND
Gasoline Range Organic Compounds	ug/L	50	ND
Fluorobenzene (Surrogate)	%		112

SPIKE AND SPIKE DUPLICATE:

Parameter	Units	PRL	100189901	Spike	Spike Recv	Spike Dupl Recv	RPD
Benzene	ug/L	1.0	ND	100	101%	105%	4%
Toluene	ug/L	1.0	ND	100	96%	102%	6%
Ethylbenzene	ug/L	1.0	ND	100	96%	103%	7%
Xylenes	ug/L	2.0	ND	300	96%	102%	6%
1,3,5-Trimethylbenzene	ug/L	1.0	ND	100	90%	95%	5%
1,2,4-Trimethylbenzene	ug/L	1.0	ND	100	83%	87%	5%

LABORATORY CONTROL SAMPLE:

Parameter	Units	PRL	Reference Value	Recv
Benzene	ug/L	1.0	100	102%
Toluene	ug/L	1.0	100	101%
Ethylbenzene	ug/L	1.0	100	101%
Xylenes	ug/L	2.0	300	102%
1,3,5-Trimethylbenzene	ug/L	1.0	100	99%
1,2,4-Trimethylbenzene	ug/L	1.0	100	95%
Methyl tert-butyl ether	ug/L	4.0	100	83%
Gasoline Range Organic Compounds	ug/L	50	1000	97%

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Client Reference: Thomas

VOLATILE PETROLEUM RELATED COMPOUNDS
Batch: 10 70844
Samples: 10 0187623, 10 0187631

METHOD BLANK:

Parameter	Units	PRL	Method Blank
Date Analyzed			04JUL95
Benzene	ug/L	1.0	ND
Toluene	ug/L	1.0	ND
Ethylbenzene	ug/L	1.0	ND
Xylenes	ug/L	2.0	ND
1,3,5-Trimethylbenzene	ug/L	1.0	ND
1,2,4-Trimethylbenzene	ug/L	1.0	ND
Methyl tert-butyl ether	ug/L	4.0	ND
Gasoline Range Organic Compounds	ug/L	50	ND
Fluorobenzene (Surrogate)	%		115

SPIKE AND SPIKE DUPLICATE:

Parameter	Units	PRL	100184918	Spike	Spike Recv	Spike Dupl Recv	RPD
Benzene	ug/L	1.0	ND	100	101%	96%	5%
Toluene	ug/L	1.0	ND	100	106%	100%	6%
Ethylbenzene	ug/L	1.0	ND	100	107%	101%	6%
Xylenes	ug/L	2.0	ND	300	108%	100%	8%
1,3,5-Trimethylbenzene	ug/L	1.0	ND	100	108%	97%	11%
1,2,4-Trimethylbenzene	ug/L	1.0	ND	100	107%	96%	11%

LABORATORY CONTROL SAMPLE:

Parameter	Units	PRL	Reference Value	Recv
Benzene	ug/L	1.0	100	96%
Toluene	ug/L	1.0	100	101%
Ethylbenzene	ug/L	1.0	100	102%
Xylenes	ug/L	2.0	300	103%
1,3,5-Trimethylbenzene	ug/L	1.0	100	102%
1,2,4-Trimethylbenzene	ug/L	1.0	100	102%
Methyl tert-butyl ether	ug/L	4.0	100	96%
Gasoline Range Organic Compounds	ug/L	50	1000	106%

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Client Reference: Thomas

ND	Not detected at or above the PRL.
PRL	PACE Reporting Limit
RPD	Relative Percent Difference

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ENVIRONMENTAL LABORATORIES

CHAIN-OF-CUSTODY RECORD
Analytical Request

Client: Enviroscience
Address: 2224 Heimstead Rd
Eau Claire, WI 54703
Phone: 715 835 9311

Report To: Enviroscience
Bill To: Enviroscience
P.O. # / Billing Reference
Project Name / No.: Thomas

Pace Client No.
Pace Project Manager: Paul Ernst
Pace Project No.: 95062950S
*Requested Due Date:

Sampled By (PRINT): Bob Powers
Bob Powers 6-26-95
Sampler Signature / Date Sampled

ITEM NO.	SAMPLE DESCRIPTION	TIME	MATRIX	PACE NO.	NO. OF CONTAINERS	PRESERVATIVES: UNPRESERVED	H_2SO_4	HNO_3	VOA	HCl	ANALYSES REQUEST: PVOC	DRO	REMARKS
1	Thomas MW-3A	10:30	H_2O	18759.3	4					4	3	1	
2	Thomas MW-2A	11:30	"	18760.7	4					4	3	1	
3	Thomas MW-1A	12:15	"	18762.3	4					4	3	1	
4	Thomas MW-1A DUP	12:20	"	18763.1	4					4	3	1	
5	Thomas Field Blank	12:30	"	18765.8	3					3	3		
6													
7	Trip Blank - Hold @			18784.0	2								
8													

COOLER NOS.	BAILERS	SHIPMENT METHOD OUT/DATE	SHIPMENT METHOD RETURNED/DATE

Additional Comments

ITEM NUMBER	RELINQUISHED BY / AFFILIATION	ACCEPTED BY / AFFILIATION	DATE	TIME
	Bob Powers	Kari E Bisbee/Pace	6/28/95	1800

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PACE INCORPORATED
ENVIRONMENTAL LABORATORIES

REPORT OF LABORATORY ANALYSIS

Enviroscience, Inc.
2224 Heimstead Rd.
Eau Claire, WI 54703

May 16, 1995
PACE Project Number: 950509504

Attn: Mr. Bob Powers

Client Reference: Thomas

Parameter	Units	PRL			
PACE Sample Number:			10 0126063	10 0126071	10 0126080
Date Collected:			05/04/95	05/04/95	05/04/95
Time Collected:			10:30	10:30	13:00
Date Received:			05/05/95	05/05/95	05/05/95
			MW-1A	MW-1A Dup	MW-2A (SB-3A)
ORGANIC ANALYSIS					
DIESEL RANGE ORGANICS-MOD. 8015					
Date Analyzed			14MAY95 X	15MAY95 X	15MAY95 X
Date Extracted			05/10/95	05/10/95	05/10/95
Diesel Range Organic Compounds	mg/L	0.10	ND	ND	0.16 LB HB
Pentacosane (Surrogate Std.)	%		102	98	102
SW8310: MODIFIED LIST					
Date Extracted			05/10/95	05/10/95	05/10/95
Date Analyzed			11MAY95 1	11MAY95 1	11MAY95 1
Naphthalene	ug/L	1.5	ND	ND	ND
Acenaphthylene	ug/L	1.5	ND	ND	ND
1-Methylnaphthalene	ug/L	1.5	ND	ND	ND
2-Methylnaphthalene	ug/L	1.5	ND	ND	ND
Acenaphthene	ug/L	2.0	ND	ND	ND
Fluorene	ug/L	0.31	ND	ND	ND
Phenanthrene	ug/L	0.20	ND	ND	ND
Anthracene	ug/L	0.050	ND	ND	ND
Fluoranthene	ug/L	0.30	ND	ND	ND
Pyrene	ug/L	0.10	ND	ND	ND
Benzo(a)anthracene	ug/L	0.10	ND	ND	ND
Chrysene	ug/L	0.10	ND	ND	ND
Benzo(b)fluoranthene	ug/L	0.20	ND	ND	ND
Benzo(k)fluoranthene	ug/L	0.050	ND	ND	ND
Benzo(a)pyrene	ug/L	0.10	ND	ND	ND
Dibenzo(a,h)anthracene	ug/L	0.20	ND	ND	ND
Benzo(g,h,i)perylene	ug/L	0.20	ND	ND	ND
Indeno(1,2,3-cd)pyrene	ug/L	0.20	ND	ND	ND
Carbazole (Surrogate)	%		88	87	83
Terphenyl (Surrogate)	%		89	84	84

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REPORT OF LABORATORY ANALYSIS

Mr. Bob Powers
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May 16, 1995
PACE Project Number: 950509504

Client Reference: Thomas

Parameter	Units	PRL	10 0126063 05/04/95 10:30 05/05/95 MW-1A	10 0126071 05/04/95 10:30 05/05/95 MW-1A Dup	10 0126080 05/04/95 13:00 05/05/95 MW-2A (SB-3A)
PACE Sample Number:					
Date Collected:					
Time Collected:					
Date Received:					
Client Sample ID:					
ORGANIC ANALYSIS					
VOLATILE ORGANICS IN WATER-8021					
Date Analyzed			11MAY95 D	11MAY95 D	11MAY95 D
Chloromethane	ug/L	0.8	ND	ND	ND
Dichlorodifluoromethane	ug/L	1.2	ND	ND	ND
Vinyl chloride	ug/L	1.7	ND	ND	ND
Chloroethane	ug/L	0.8	ND	ND	ND
1,1-Dichloroethylene	ug/L	0.5	ND	ND	ND
Trichlorofluoromethane	ug/L	0.4	ND	0.4	ND
Methylene chloride	ug/L	1.0	ND	ND	ND
trans-1,2-Dichloroethylene	ug/L	0.4	ND	ND	ND
1,1-Dichloroethane	ug/L	0.6	ND	ND	ND
2,2-Dichloropropane	ug/L	0.5	ND	ND	ND
cis-1,2-Dichloroethylene	ug/L	0.4	ND	ND	ND
Chloroform	ug/L	1.2	ND	ND	ND
1,1,1-Trichloroethane	ug/L	0.7	ND	ND	ND
Carbon tetrachloride	ug/L	0.5	ND	ND	ND
1,2-Dichloroethane	ug/L	0.5	ND	ND	ND
1,1,2-Trichloroethylene	ug/L	1.0	ND	ND	ND
1,2-Dichloropropane	ug/L	0.7	ND	ND	ND
Bromodichloromethane	ug/L	0.8	ND	ND	ND
1,1,2-Trichloroethane	ug/L	0.4	ND	ND	ND
1,3-Dichloropropane	ug/L	0.7	ND	ND	ND
1,1,2,2-Tetrachloroethylene	ug/L	1.6	ND	ND	ND
Dibromochloromethane	ug/L	0.9	ND	ND	ND
1,2-Dibromoethane	ug/L	4.0	ND	ND	ND
1,1,2,2-Tetrachloroethane	ug/L	0.7	ND	ND	ND
1,2-Dibromo-3-chloropropane	ug/L	0.8	ND	ND	ND
Hexachlorobutadiene	ug/L	1.1	ND	ND	ND
Methyl tert-butyl ether	ug/L	1.0	ND	ND	ND
Benzene	ug/L	0.4	ND	ND	ND
Toluene	ug/L	0.6	ND	ND	ND
Chlorobenzene	ug/L	0.7	ND	ND	ND

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REPORT OF LABORATORY ANALYSIS

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May 16, 1995
PACE Project Number: 950509504

Client Reference: Thomas

Parameter	Units	PRL	10 0126063 05/04/95 10:30 05/05/95 MW-1A	10 0126071 05/04/95 10:30 05/05/95 MW-1A Dup	10 012608C 05/04/95 13:00 05/05/95 MW-2A (SB-3A)
PACE Sample Number:					
Date Collected:					
Time Collected:					
Date Received:					
Client Sample ID:					
ORGANIC ANALYSIS					
VOLATILE ORGANICS IN WATER-8021					
Ethyl benzene	ug/L	0.8	ND	ND	ND
Xylenes	ug/L	1.3	ND	ND	ND
Cumene	ug/L	1.2	ND	ND	ND
Bromobenzene	ug/L	1.0	ND	ND	ND
n-Propybenzene	ug/L	0.9	ND	ND	ND
2-Chlorotoluene	ug/L	1.0	ND	ND	ND
4-Chlorotoluene	ug/L	1.4	ND	ND	ND
1,3,5-Trimethylbenzene	ug/L	0.7	ND	ND	ND
tert-Butylbenzene	ug/L	2.0	ND	ND	ND
1,2,4-Trimethylbenzene	ug/L	0.7	ND	ND	ND
1,3-Dichlorobenzene	ug/L	0.9	ND	ND	ND
sec-Butylbenzene	ug/L	0.8	ND	ND	ND
1,4-Dichlorobenzene	ug/L	0.9	ND	ND	ND
p-Cymene	ug/L	0.9	ND	ND	ND
1,2-Dichlorobenzene	ug/L	1.0	ND	ND	ND
n-Butylbenzene	ug/L	1.2	ND	ND	ND
1,2,4-Trichlorobenzene	ug/L	1.1	ND	ND	ND
Naphthalene	ug/L	1.6	ND	ND	ND
1,2,3-Trichlorobenzene	ug/L	1.1	ND	ND	ND
di-Isopropyl ether	ug/L	1.0	ND	ND	ND
Fluorobenzene (Surrogate)	%		98.2	94.6	98.1

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REPORT OF LABORATORY ANALYSIS

May 16, 1995
PACE Project Number: 950509504

Client Reference: Thomas

PACE Sample Number:			10 0126098
Date Collected:			05/04/95
Time Collected:			15:00
Date Received:			05/05/95
Client Sample ID:			MW-3A
Parameter	Units	PRL	(SB-4A)
ORGANIC ANALYSIS			
DIESEL RANGE ORGANICS-MOD. 8015			
Date Analyzed			15MAY95 X
Date Extracted			05/10/95
Diesel Range Organic Compounds	mg/L	0.14	0.29 HB LB
Pentacosane (Surrogate Std.)	%		99
VOLATILE ORGANICS IN WATER-8021			
Date Analyzed			11MAY95 D
Chloromethane	ug/L	0.8	ND
Dichlorodifluoromethane	ug/L	1.2	ND
Vinyl chloride	ug/L	1.7	ND
Chloroethane	ug/L	0.8	ND
1,1-Dichloroethylene	ug/L	0.5	ND
Trichlorofluoromethane	ug/L	0.4	ND
Methylene chloride	ug/L	1.0	ND
trans-1,2-Dichloroethylene	ug/L	0.4	ND
1,1-Dichloroethane	ug/L	0.6	ND
2,2-Dichloropropane	ug/L	0.5	ND
cis-1,2-Dichloroethylene	ug/L	0.4	ND
Chloroform	ug/L	1.2	ND
1,1,1-Trichloroethane	ug/L	0.7	ND
Carbon tetrachloride	ug/L	0.5	ND
1,2-Dichloroethane	ug/L	0.5	ND
1,1,2-Trichloroethylene	ug/L	1.0	ND
1,2-Dichloropropane	ug/L	0.7	ND
Bromodichloromethane	ug/L	0.8	ND
1,1,2-Trichloroethane	ug/L	0.4	ND
1,3-Dichloropropane	ug/L	0.7	ND
1,1,2,2-Tetrachloroethylene	ug/L	1.6	ND
Dibromochloromethane	ug/L	0.9	ND
1,2-Dibromoethane	ug/L	4.0	ND
1,1,2,2-Tetrachloroethane	ug/L	0.7	ND

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REPORT OF LABORATORY ANALYSIS

May 16, 1995
PACE Project Number: 950509504

Client Reference: Thomas

Parameter	Units	PRL	
PACE Sample Number:			10 0126098
Date Collected:			05/04/95
Time Collected:			15:00
Date Received:			05/05/95
Client Sample ID:			MW-3A (SB-4A)
ORGANIC ANALYSIS			
VOLATILE ORGANICS IN WATER-8021			
1,2-Dibromo-3-chloropropane	ug/L	0.8	ND
Hexachlorobutadiene	ug/L	1.1	ND
Methyl tert-butyl ether	ug/L	1.0	ND
Benzene	ug/L	0.4	ND
Toluene	ug/L	0.6	ND
Chlorobenzene	ug/L	0.7	ND
Ethyl benzene	ug/L	0.8	ND
Xylenes	ug/L	1.3	ND
Cumene	ug/L	1.2	ND
Bromobenzene	ug/L	1.0	ND
n-Propybenzene	ug/L	0.9	ND
2-Chlorotoluene	ug/L	1.0	ND
4-Chlorotoluene	ug/L	1.4	ND
1,3,5-Trimethylbenzene	ug/L	0.7	ND
tert-Butylbenzene	ug/L	2.0	ND
1,2,4-Trimethylbenzene	ug/L	0.7	ND
1,3-Dichlorobenzene	ug/L	0.9	ND
sec-Butylbenzene	ug/L	0.8	ND
1,4-Dichlorobenzene	ug/L	0.9	ND
p-Cymene	ug/L	0.9	ND
1,2-Dichlorobenzene	ug/L	1.0	ND
n-Butylbenzene	ug/L	1.2	ND
1,2,4-Trichlorobenzene	ug/L	1.1	ND
Naphthalene	ug/L	1.6	ND
1,2,3-Trichlorobenzene	ug/L	1.1	ND
di-Isopropyl ether	ug/L	1.0	ND
Fluorobenzene (Surrogate)	%		93.8

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REPORT OF LABORATORY ANALYSIS

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May 16, 1995
PACE Project Number: 950509504

Client Reference: Thomas

These data have been reviewed and are approved for release.

Paul D. Ernst
Project Manager

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Client Reference: Thomas

HB	High boiling point hydrocarbons are present in sample.
LB	Low boiling point components are present in sample.
ND	Not detected at or above the PRL.
PRL	PACE Reporting Limit

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PACE INCORPORATED
ENVIRONMENTAL LABORATORIES

REPORT OF LABORATORY ANALYSIS

QUALITY CONTROL DATA

May 16, 1995
PACE Project Number: 950509504

Client Reference: Thomas

DIESEL RANGE ORGANICS-MOD. 8015
Batch: 10 68399
Samples: 10 0126063, 10 0126071, 10 0126080, 10 0126098

METHOD BLANK:

Parameter	Units	PRL	Method Blank
Date Analyzed			14MAY95
Diesel Range Organic Compounds	mg/L	0.10	ND
Pentacosane (Surrogate Std.)	%		100

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

Parameter	Units	PRL	Reference Value	Recv	Dupl Recv	RPD
Diesel Range Organic Compounds	mg/L	0.10	1.0	100%	110%	10%

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Client Reference: Thomas

MDH 465D: VOLATILE ORGANICS IN LIQUID
Batch: 10 68462
Samples: 10 0126063, 10 0126071, 10 0126080, 10 0126098

METHOD BLANK:

Parameter	Units	PRL	Method Blank
Date Analyzed			11MAY95
Dichlorodifluoromethane	ug/L	1.5	ND
Chloromethane	ug/L	1.5	ND
Vinyl Chloride	ug/L	1.5	ND
Bromomethane	ug/L	1.5	ND
Chloroethane	ug/L	1.0	ND
Dichlorofluoromethane	ug/L	1.0	ND
Trichlorofluoromethane	ug/L	0.5	ND
Ethyl ether	ug/L	5.0	ND
1,1,2-Trichlorotrifluoroethane	ug/L	1.0	ND
Acetone	ug/L	40.0	ND
1,1-Dichloroethylene	ug/L	0.5	ND
Allyl chloride	ug/L	2.0	ND
Methylene Chloride	ug/L	1.0	ND
Methyl tert-Butyl Ether	ug/L	4.0	ND
Trans-1,2-dichloroethylene	ug/L	0.5	ND
1,1-Dichloroethane	ug/L	0.5	ND
Methyl ethyl ketone	ug/L	25.0	ND
2,2-Dichloropropane	ug/L	0.5	ND
cis-1,2-Dichloroethylene	ug/L	0.5	ND
Chloroform	ug/L	0.5	ND
Bromochloromethane	ug/L	1.0	ND
Tetrahydrofuran	ug/L	20.0	ND
1,1,1-Trichloroethane	ug/L	0.5	ND
1,1-Dichloropropene	ug/L	1.0	ND
Carbon Tetrachloride	ug/L	0.5	ND
Benzene	ug/L	0.5	ND
1,2-Dichloroethane	ug/L	0.5	ND
1,2-Dichloropropane	ug/L	0.5	ND
1,1,2-Trichloroethylene	ug/L	0.5	ND
Dibromomethane	ug/L	1.5	ND
Bromodichloromethane	ug/L	0.5	ND

REPORT OF LABORATORY ANALYSIS

QUALITY CONTROL DATA

May 16, 1995
PACE Project Number: 950509504

Client Reference: Thomas

MDH 465D: VOLATILE ORGANICS IN LIQUID
Batch: 10 68462
Samples: 10 0126063, 10 0126071, 10 0126080, 10 0126098

METHOD BLANK:

Parameter	Units	PRL	Method Blank
Methyl isobutyl ketone	ug/L	8.0	ND
cis-1,3-Dichloro-1-propene	ug/L	0.5	ND
Toluene	ug/L	0.8	ND
trans-1,3-Dichloro-1-propene	ug/L	0.5	ND
1,1,2-Trichloroethane	ug/L	0.5	ND
1,3-Dichloropropane	ug/L	0.8	ND
1,1,2,2-Tetrachloroethylene	ug/L	1.0	ND
Dibromochloromethane	ug/L	1.0	ND
1,2-Dibromoethane	ug/L	4.0	ND
Chlorobenzene	ug/L	0.8	ND
1,1,1,2-Tetrachloroethane	ug/L	0.5	ND
Ethyl benzene	ug/L	0.8	ND
m-Xylene	ug/L	0.8	ND
p-Xylene	ug/L	0.8	ND
o-Xylene	ug/L	0.8	ND
Styrene	ug/L	0.8	ND
Bromoform	ug/L	1.0	ND
Cumene	ug/L	1.0	ND
1,1,2,2-Tetrachloroethane	ug/L	1.0	ND
1,2,3-Trichloropropane	ug/L	4.0	ND
Bromobenzene	ug/L	1.0	ND
n-Propylbenzene	ug/L	1.0	ND
2-Chlorotoluene	ug/L	1.0	ND
1,3,5-Trimethylbenzene	ug/L	0.8	ND
4-Chlorotoluene	ug/L	1.5	ND
tert-Butylbenzene	ug/L	0.8	ND
1,2,4-Trimethylbenzene	ug/L	0.8	ND
sec-Butylbenzene	ug/L	1.0	ND
p-Cymene	ug/L	1.0	ND
1,3-Dichlorobenzene	ug/L	1.0	ND
1,4-Dichlorobenzene	ug/L	1.0	ND
n-Butylbenzene	ug/L	1.2	ND

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QUALITY CONTROL DATA

May 16, 1995
PACE Project Number: 950509504

Client Reference: Thomas

MDH 465D: VOLATILE ORGANICS IN LIQUID
Batch: 10 68462
Samples: 10 0126063, 10 0126071, 10 0126080, 10 0126098

METHOD BLANK:

Parameter	Units	PRL	Method Blank
1,2-Dichlorobenzene	ug/L	1.0	ND
1,2-Dibromo-3-chloropropane	ug/L	0.8	ND
1,2,4-Trichlorobenzene	ug/L	1.2	ND
Hexachlorobutadiene	ug/L	2.0	ND
Naphthalene	ug/L	1.5	ND
1,2,3-Trichlorobenzene	ug/L	1.5	ND
Fluorobenzene (Surrogate)	%		99.2
1,4-Dichlorobutane (Surrogate Standard)	%		100

SPIKE AND SPIKE DUPLICATE:

Parameter	Units	PRL	100114626	Spike	Spike Recv	Spike Dupl Recv	RPI
Dichlorodifluoromethane	ug/L	1.5	ND	20.0	92%	77%	18%
Chloromethane	ug/L	1.5	ND	20.0	101%	82%	21%
Vinyl Chloride	ug/L	1.5	ND	20.0	98%	87%	12%
Bromomethane	ug/L	1.5	ND	20.0	58%	50%	15%
Chloroethane	ug/L	1.0	ND	20.0	107%	102%	5%
Trichlorofluoromethane	ug/L	0.5	ND	20.0	106%	99%	7%
Ethyl ether	ug/L	5.0	ND	20.0	100%	112%	11%
1,1,2-Trichlorotrifluoroethane	ug/L	1.0	ND	20.0	99%	90%	10%
Acetone	ug/L	40.0	ND	200	88%	126%	36%
Allyl chloride	ug/L	2.0	ND	20.0	97%	78%	22%
Methyl tert-Butyl Ether	ug/L	4.0	ND	20.0	91%	104%	13%
cis-1,2-Dichloroethylene	ug/L	0.5	ND	20.0	100%	99%	1%
Bromochloromethane	ug/L	1.0	ND	20.0	95%	106%	11%
1,1-Dichloropropene	ug/L	1.0	ND	20.0	103%	100%	3%
1,2-Dichloroethane	ug/L	0.5	ND	20.0	99%	108%	9%
1,2-Dichloropropane	ug/L	0.5	ND	20.0	102%	107%	5%
Dibromomethane	ug/L	1.5	ND	20.0	99%	120%	19%
1,1,2-Trichloroethane	ug/L	0.5	ND	20.0	100%	116%	15%
1,1,2,2-Tetrachloroethylene	ug/L	1.0	ND	20.0	110%	104%	6%

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

May 16, 1995
PACE Project Number: 950509504

Client Reference: Thomas

MDH 465D: VOLATILE ORGANICS IN LIQUID
Batch: 10 68462
Samples: 10 0126063, 10 0126071, 10 0126080, 10 0126098

SPIKE AND SPIKE DUPLICATE:

Parameter	Units	PRL	100114626	Spike	Spike Recv	Spike Dupl Recv	RPD
Dibromochloromethane	ug/L	1.0	ND	20.0	93%	105%	12%
1,2-Dibromoethane	ug/L	4.0	ND	20.0	93%	95%	2%
1,1,1,2-Tetrachloroethane	ug/L	0.5	ND	20.0	116%	126%	8%
Ethyl benzene	ug/L	0.8	ND	20.0	99%	97%	2%
p-Xylene	ug/L	0.8	ND	20.0	101%	107%	6%
o-Xylene	ug/L	0.8	ND	20.0	97%	105%	8%
1,1,2,2-Tetrachloroethane	ug/L	1.0	ND	20.0	113%	145%	25%
1,2,3-Trichloropropane	ug/L	4.0	ND	20.0	101%	131%	26%
Bromobenzene	ug/L	1.0	ND	20.0	95%	103%	8%
2-Chlorotoluene	ug/L	1.0	ND	20.0	133%	137%	3%
1,2,4-Trimethylbenzene	ug/L	0.8	ND	20.0	87%	99%	13%
sec-Butylbenzene	ug/L	1.0	ND	20.0	94%	103%	9%
1,3-Dichlorobenzene	ug/L	1.0	ND	20.0	103%	107%	4%
n-Butylbenzene	ug/L	1.2	ND	20.0	91%	110%	19%
1,2-Dibromo-3-chloropropane	ug/L	0.8	ND	20.0	90%	127%	34%
1,2,4-Trichlorobenzene	ug/L	1.2	ND	20.0	102%	114%	11%

LABORATORY CONTROL SAMPLE:

Parameter	Units	PRL	Reference Value	Recv
Dichlorodifluoromethane	ug/L	1.5	20.0	76%
Chloromethane	ug/L	1.5	20.0	75%
Vinyl Chloride	ug/L	1.5	20.0	92%
Bromomethane	ug/L	1.5	20.0	56%
Chloroethane	ug/L	1.0	20.0	102%
Dichlorofluoromethane	ug/L	1.0	20.0	83%
Trichlorofluoromethane	ug/L	0.5	20.0	95%
Ethyl ether	ug/L	5.0	20.0	138%
1,1,2-Trichlorotrifluoroethane	ug/L	1.0	20.0	89%
Acetone	ug/L	40.0	200	60%
1,1-Dichloroethylene	ug/L	0.5	20.0	90%
Allyl chloride	ug/L	2.0	20.0	89%

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Client Reference: Thomas

MDH 465D: VOLATILE ORGANICS IN LIQUID
Batch: 10 68462
Samples: 10 0126063, 10 0126071, 10 0126080, 10 0126098

LABORATORY CONTROL SAMPLE:

Parameter	Units	PRL	Reference Value	Recv
Methylene Chloride	ug/L	1.0	20.0	96%
Methyl tert-Butyl Ether	ug/L	4.0	20.0	86%
Trans-1,2-dichloroethylene	ug/L	0.5	20.0	94%
1,1-Dichloroethane	ug/L	0.5	20.0	94%
Methyl ethyl ketone	ug/L	25.0	200	60%
2,2-Dichloropropane	ug/L	0.5	20.0	101%
cis-1,2-Dichloroethylene	ug/L	0.5	20.0	91%
Chloroform	ug/L	0.5	20.0	104%
Bromochloromethane	ug/L	1.0	20.0	95%
Tetrahydrofuran	ug/L	20.0	200	74%
1,1,1-Trichloroethane	ug/L	0.5	20.0	105%
1,1-Dichloropropene	ug/L	1.0	20.0	96%
Carbon Tetrachloride	ug/L	0.5	20.0	100%
Benzene	ug/L	0.5	20.0	91%
1,2-Dichloroethane	ug/L	0.5	20.0	93%
1,2-Dichloropropane	ug/L	0.5	20.0	95%
1,1,2-Trichloroethylene	ug/L	0.5	20.0	96%
Dibromomethane	ug/L	1.5	20.0	83%
Bromodichloromethane	ug/L	0.5	20.0	106%
Methyl isobutyl ketone	ug/L	8.0	40.0	77%
cis-1,3-Dichloro-1-propene	ug/L	0.5	20.0	107%
Toluene	ug/L	0.8	20.0	91%
trans-1,3-Dichloro-1-propene	ug/L	0.5	20.0	97%
1,1,2-Trichloroethane	ug/L	0.5	20.0	97%
1,3-Dichloropropane	ug/L	0.8	20.0	101%
1,1,2,2-Tetrachloroethylene	ug/L	1.0	20.0	107%
Dibromochloromethane	ug/L	1.0	20.0	104%
1,2-Dibromoethane	ug/L	4.0	20.0	93%
Chlorobenzene	ug/L	0.8	20.0	108%
1,1,1,2-Tetrachloroethane	ug/L	0.5	20.0	114%
Ethyl benzene	ug/L	0.8	20.0	98%
m-Xylene	ug/L	0.8	20.0	91%

REPORT OF LABORATORY ANALYSIS

Mr. Bob Powers
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QUALITY CONTROL DATA

May 16, 1995
PACE Project Number: 950509504

Client Reference: Thomas

MDH 465D: VOLATILE ORGANICS IN LIQUID
Batch: 10 68462
Samples: 10 0126063, 10 0126071, 10 0126080, 10 0126098

LABORATORY CONTROL SAMPLE:

Parameter	Units	PRL	Reference Value	Recv
p-Xylene	ug/L	0.8	20.0	101%
o-Xylene	ug/L	0.8	20.0	93%
Styrene	ug/L	0.8	20.0	89%
Bromoform	ug/L	1.0	20.0	77%
Cumene	ug/L	1.0	20.0	97%
1,1,2,2-Tetrachloroethane	ug/L	1.0	20.0	123%
1,2,3-Trichloropropane	ug/L	4.0	20.0	107%
Bromobenzene	ug/L	1.0	20.0	103%
n-Propylbenzene	ug/L	1.0	20.0	90%
2-Chlorotoluene	ug/L	1.0	20.0	109%
1,3,5-Trimethylbenzene	ug/L	0.8	20.0	96%
4-Chlorotoluene	ug/L	1.5	20.0	90%
tert-Butylbenzene	ug/L	0.8	20.0	94%
1,2,4-Trimethylbenzene	ug/L	0.8	20.0	99%
sec-Butylbenzene	ug/L	1.0	20.0	93%
p-Cymene	ug/L	1.0	20.0	94%
1,3-Dichlorobenzene	ug/L	1.0	20.0	97%
1,4-Dichlorobenzene	ug/L	1.0	20.0	100%
n-Butylbenzene	ug/L	1.2	20.0	98%
1,2-Dichlorobenzene	ug/L	1.0	20.0	105%
1,2-Dibromo-3-chloropropane	ug/L	0.8	20.0	72%
1,2,4-Trichlorobenzene	ug/L	1.2	20.0	98%
Hexachlorobutadiene	ug/L	2.0	20.0	113%
Naphthalene	ug/L	1.5	20.0	105%
1,2,3-Trichlorobenzene	ug/L	1.5	20.0	113%

1710 Douglas Drive North
Minneapolis, MN 55422
TEL: 612-544-5543
FAX: 612-525-3377

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Client Reference: Thomas

SW8310: MODIFIED LIST
Batch: 10 68412
Samples: 10 0126063, 10 0126071, 10 0126080

METHOD BLANK:

Parameter	Units	PRL	Method Blank
Date Analyzed			11MAY95
Naphthalene	ug/L	1.5	ND
Acenaphthylene	ug/L	1.5	ND
1-Methylnaphthalene	ug/L	1.5	ND
2-Methylnaphthalene	ug/L	1.5	ND
Acenaphthene	ug/L	2.0	ND
Fluorene	ug/L	0.31	ND
Phenanthrene	ug/L	0.20	ND
Anthracene	ug/L	0.050	ND
Fluoranthene	ug/L	0.30	ND
Pyrene	ug/L	0.10	ND
Benzo(a)anthracene	ug/L	0.10	ND
Chrysene	ug/L	0.10	ND
Benzo(b)fluoranthene	ug/L	0.20	ND
Benzo(k)fluoranthene	ug/L	0.050	ND
Benzo(a)pyrene	ug/L	0.10	ND
Dibenzo(a,h)anthracene	ug/L	0.20	ND
Benzo(g,h,i)perylene	ug/L	0.20	ND
Indeno(1,2,3-cd)pyrene	ug/L	0.20	ND
Carbazole (Surrogate)	%		89
Terphenyl (Surrogate)	%		90

LABORATORY CONTROL SAMPLE:

Parameter	Units	PRL	Reference Value	Recv
Naphthalene	ug/L	1.5	10	73%
Acenaphthylene	ug/L	1.5	20	75%
1-Methylnaphthalene	ug/L	1.5	10	70%
2-Methylnaphthalene	ug/L	1.5	10	70%
Acenaphthene	ug/L	2.0	10	75%
Fluorene	ug/L	0.31	2.0	75%
Phenanthrene	ug/L	0.20	1.0	90%

Client Reference: Thomas

SW8310: MODIFIED LIST
Batch: 10 68412
Samples: 10 0126063, 10 0126071, 10 0126080

LABORATORY CONTROL SAMPLE:

Parameter	Units	PRL	Reference Value	Recv
Anthracene	ug/L	0.050	1.0	88%
Fluoranthene	ug/L	0.30	2.0	90%
Pyrene	ug/L	0.10	1.0	92%
Benzo(a)anthracene	ug/L	0.10	1.0	83%
Chrysene	ug/L	0.10	1.0	83%
Benzo(b)fluoranthene	ug/L	0.20	2.0	90%
Benzo(k)fluoranthene	ug/L	0.050	1.0	87%
Benzo(a)pyrene	ug/L	0.10	1.0	84%
Dibenzo(a,h)anthracene	ug/L	0.20	2.0	85%
Benzo(g,h,i)perylene	ug/L	0.20	2.0	85%
Indeno(1,2,3-cd)pyrene	ug/L	0.20	1.0	86%

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Client Reference: Thomas

ND	Not detected at or above the PRL.
PRL	PACE Reporting Limit
RPD	Relative Percent Difference

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Minneapolis, MN 55422
TEL: 612-544-5543
FAX: 612-525-3377

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207690

pace INCORPORATED
ENVIRONMENTAL LABORATORIES

CHAIN-OF-CUSTODY RECORD
Analytical Request

Client: Envirosscience
Address: 2224 Heimstead Rd.
Eau Claire, WI 54703
Phone: 715 835 9311

Report To: Envirosciense
Bill To: Envirosciense
P.O. # / Billing Reference
Project Name / No.: Thomas

Pace Client No.
Pace Project Manager
Pace Project No.: 9505398504
*Requested Due Date: 5-15-95

Sampled By (PRINT): Bob Powers
Bob Powers 5-4-95
Sampler Signature / Date Sampled

ITEM NO.	SAMPLE DESCRIPTION	TIME	MATRIX	PACE NO.	NO. OF CONTAINERS	PRESERVATIVES: UNPRESERVED	H_2SO_4	HNO_3	VOA	HCl	ANALYSES REQUEST: DRO	PAH	VOC	REMARKS
1	MW-1A (SB-5A)	10:30	Water		5	1				4	1	1	3	126006.3
2	MW-2A (SB-3A)	1:00			5	1				4	1	1	3	126008.0
3	MW-3A (SB-4A)	3:00			5	1				4	1	1	3	126009.8
4														
5														
6	MW-1A DUP													126007.1
7	Dave Holland 5-9													
8														

COOLER NOS.	BAILERS	SHIPMENT METHOD OUT DATE	SHIPMENT METHOD RETURNED DATE

Additional Comments

ITEM NUMBER	RELINQUISHED BY · AFFILIATION	ACCEPTED BY · AFFILIATION	DATE	TIME
	Bob Powers / Envir	Dave Holland / Pace	5/9/95	1535

ORIGINAL

SEE REVERSE SIDE FOR INSTRUCTIONS

MAY-08-95 MON 11:29 AM EC ENVIRO
7158359352 P.02

APPENDIX H

APPENDIX C

of

Phase IV - Site Remediation

Notification to Treat or Dispose of
Petroleum Contaminated Water
(Form 4400-120)

State of Wisconsin
Department of Natural Resources

NOTIFICATION TO TREAT OR DISPOSE OF PETROLEUM CONTAMINATED SOIL & WATER

Form 4400-120 Rev. 10-95

This form is required by the Department of Natural Resources (DNR) to ensure that the remediation of petroleum contaminated soil and water is in compliance with NR 158, NR 500-540, NR 419 and NR 445, Wis. Adm. Code. Failure to comply with applicable statutes and administrative rules may lead to violations of subchapters III and IV of Ch. 144, Wis. Stats. and may result in forfeitures of not less than $10 or more than $25,000 for each violation, pursuant to ss. 144.426(1), 144.74(1), 144.99, Wis. Stats., or fines of not less than $100 or more than $150,000 or imprisonment for not more than 10 years, or both, pursuant to s. 144.74(2), Wis. Stats. Each day of a continuing violation constitutes a separate violation. Except for the remediation of virgin petroleum spills, this form needs to be submitted to the DNR 10 business days prior to the commencement of the remediation. Personally identifiable information found on this form is not intended to be used for any other purpose.

DIRECTIONS: 1) complete both sides of the form. 2) Have the responsible party sign the form. This signature certifies that the information on this form and in all supporting documents is accurate. 3) Submit the form with supporting documentation, lab reports and any maps to the appropriate District Air Management Program at least 10 business days prior to the commencement of remediation. 4) Submit a copy of this form to the DNR project manager and retain a copy for your records.

PART I - GENERAL INFORMATION

Site Name & Address: Thomas Service Station Former STH 77 Montreal, WI	Date of Form Completion:
Site Number: 03-26-000788	Do Other Remediation Systems Exist at This Site: ☐ Yes ☒ No
County: Iron	Site Type: ☒ LUST ☐ ERP ☐ CERCLA ☐ Other, Explain:
Responsible Party Name & Address:	Responsible Party Signature: Telephone Number: ( )
Consulting Firm Name & Address: LEVEL ONE, Inc. ATTN: Steve Palzkill 302 E. Thomas Street Rice Lake, WI 54868	Consulting Firm Contact: LEVEL ONE, Inc. ATTN: Steve Palzkill Telephone Number: (715 234-1009

PART II - SOIL AND WATER DATA (Attach Lab Reports and Calculations)

Type of Contamination: ☐ Gasoline ☒ Diesel ☐ Fuel Oil ☐ Waste Oil ☐ Chlorinated Organics ☐ Other: _____

Soil Concentration:

GRO:	_____	mg/kg/10^6	x	2800 lb/yd^3	x	_____	yd^3	=	0 lb
DRO:	400	mg/kg/10^6	x	2800 lb/yd^3	x	237	yd^3	=	265.4 lb
Benzene:	_____	mg/kg/10^6	x	2800 lb/yd^3	x	_____	yd^3	=	0 lb
Chlorinated Organics:	_____	mg/kg/10^6	x	2800 lb/yd^3	x	_____	yd^3	=	_____ lb
Other:	VOC	mg/kg/10^6	x	2800 lb/yd^3	x	_____	yd^3	=	0 lb

Water Concentration:

GRO: _____ mg/L DRO: _____ mg/L Benzene: _____ mg/L

Chlorinated Organics: _____ mg/L Other: _____ mg/L

PART III - TREATMENT OR DISPOSAL FACILITY INFORMATION

Treatment/Disposal Facility Name & Address:	Facility ID: Air Pollution Control Permit Number:
Facility Contact: Telephone Number: ( )	Facility Located in 10-county Area in Southeast Wisconsin? ☐ Yes ☐ No Distance to Nearest Residence or Business:
Headquarter Address:	Portable Sources Only: Has a Portable Source Relocation Notification (Form 4500-25) Been Submitted for This Location? ☐ Yes ☐ No

PART III - SOIL VACUUM EXTRACTION OR GROUNDWATER REMEDIATION

Site Contact : Telephone Number: ( )	Proposed Operations: (Attach Calculations) Anticipated Start-Up Date:
Site Located in 10-county Area in Southeast Wisconsin? ☐ Yes ☐ No	Estimated Project Duration:
Distance to Nearest Residence or Business:	Number of Wells:
Pilot Test/Soil Venting Only: (Attach Lab Reports and Calculations) Date of Test:	Number of Emission Points: Stack Height:
Flow Rate (scfm):	Maximum Equipment Flow Rate (scfm or gpm):
Total Withdrawal of Air (scf):	Total VOC Emission Rate (lb/hr):
Total VOC Emission Rate (lb/hr):	Benzene Emission Rate (lb/hr):
Benzene Emission Rate (lb/hr):	Benzene Emission Rate (lb/yr):

PART III - OTHER REMEDIATION METHODS (Attach Lab Reports and Calculations)

Proposing Other Remediation Method? ☐ Yes Method Name: _____

Attach a project description for other remediation methods including landspreading, passive aeration and bioremediation. At a minimum, the information submitted should include the following items (with any supporting lab reports and calculations):

- √ Address/Location of Remediation Site - Indicate if this location is in the 10-county area in Southeast Wisconsin and the distance to the nearest residence or business. Include a map or site plan if appropriate.
- √ Description of Remediation Method.
- √ Project Contact & Telephone Number.
- √ Anticipated Start-Up and Estimated Project Duration.
- √ Highest Estimated Hourly VOC Emissions.
- √ Highest Estimated Hourly and Annual Benzene Emissions.
- √ Emission Testing Methodology.
- √ Final Destination of Soil.

APPENDIX D

of

Phase IV - Site Remediation

General Permit Information and Application

GENERAL PERMIT TO DISCHARGE UNDER THE WISCONSIN POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of Chapter 147, Wisconsin Statutes, any facility engaged in

PIT/TRENCH DEWATERING

located in the State of Wisconsin and meeting the applicability criteria listed in Section A of this General Permit, is permitted to discharge these wastewaters directly to

surface waters of the state and/or indirectly to groundwaters of the state

in accordance with the effluent limitations, monitoring requirements and other conditions set forth in this permit.

This permit shall become effective on the date of signature.

This permit to discharge shall expire at midnight, March 30, 2001.

State of Wisconsin Department of Natural Resources
For the Secretary

By Mary Jo Kopecky
Mary Jo Kopecky, Director
Bureau of Wastewater Management
Division of Environmental Quality

Dated MAR 31 1996

EXAMPLE

A. APPLICABILITY CRITERIA

(1) Facilities Covered: With the exceptions listed in (2) below, this permit applies to dewatering discharges from:

(a) construction pits,

(b) sewer extension construction,

(c) pipe trenches, or

(d) other similar operations.

(2) Facilities **Not** Covered: This permit does not apply to discharges:

(a) from pit dewatering operations associated with coal, salt, food by-products, or other storage piles that have wastewater contaminated with pollutants other than suspended solids,

(b) of contaminated groundwater (treated or untreated),

(c) from construction sites covered by the general WPDES construction site storm water discharge permit issued pursuant to ch. NR 216, Wis. Adm. Code, and performed in conformance with s. NR 216.46,

(d) to wetlands, unless the Department determines, in writing, that the facility's discharge meets the wetland protection requirements of Ch. NR 103, Wis. Adm. Code,

(e) to outstanding resource waters as defined in s. NR 102.10, Wis. Adm. Code. This permit does not authorize discharges that would lower the water quality of downstream outstanding resource waters,

(f) to exceptional resource waters as defined in s. NR 102.11, Wis. Adm. Code. This permit does not authorize new discharges that would lower the water quality of downstream exceptional water resources,

(g) that contain pollutants in quantities which would be harmful to animal, plant, or aquatic life. No discharge is allowed that would violate the surface water quality standards in chs. NR 102 and NR 105, Wis. Adm. Code, or the groundwater quality standards in ch. NR 140, Wis. Adm. Code, or

(h) of any of the following 21 bioaccumulating toxic substances:

Acrolein	Dieldrin	Mercury
alpha - BHC	Endosulfan	PCB
beta - BHC	Endrin	Pentachlorobenzene
gamma - BHC (Lindane)	Fluoranthene	1,2,4,5-Tetrachlorobenzene
tech. - BHC	Heptachlor	2,3,7,8-Tetrachlorodibenzo-p-dioxin
Chlordane	4,4'-DDT	Toxaphene
3,3'-Dichlorobenzidine	Hexachlorobenzene	2,4,6-Trichlorophenol

B. REQUIREMENTS FOR ALL COVERED FACILITIES

All facilities covered by this General Permit shall meet the requirements of this section.

(1) Retention and Submittal of Reports, Records, and Monitoring Results

Reports, records, and monitoring results required by this permit shall be retained by the permittee for the duration of this permit or three years after this data is generated, whichever is longer. All reports, records, and monitoring results required by this permit shall be submitted to the Department office identified in the cover letter accompanying this permit.

The permittee shall submit a report to the Department, on a form provided by the Department or an acceptable equivalent form, summarizing monitoring results obtained during the previous calendar year. The report shall be postmarked no later than February 15 of the following year.

(2) Authorized Signature

Reports, records, and monitoring results required by this permit shall be signed:

(a) for a corporation, by a principal executive officer of at least the level of Vice President or a duly authorized representative having overall responsibility for the operation of the facility for which this permit is issued,

(b) for a unit of government, by a principle executive officer, a ranking elected official, or other duly authorized representative,

(c) for a limited liability company, by a member or manager,

(d) for a partnership, by a general partner, and

(e) for a sole proprietorship, by the proprietor, except that

(f) the individual required to sign in accordance with this subsection may authorize another individual to sign such reports in his or her absence.

(3) Other Permits

This permit does not relieve the permittee from having to comply with applicable federal, state, and local requirements.

(4) Dikes and Berms

Where treatment facilities are contained by dikes or berms, no above ground leakage is allowed on the outer surface of such dikes or berms.

(5) Adequate Design

Constructed wastewater disposal or treatment facilities shall have at least sufficient capacity to contain all wastewater discharges and any precipitation resulting from a 10-year, 24-hour storm event which falls within or flows into the area of disposal or treatment.

C. ADDITIONAL REQUIREMENTS FOR GROUNDWATER DISCHARGES

Discharges to groundwater shall meet the requirements outlined in this section, including the effluent limitations and monitoring requirements specified in Table 1. Samples taken in compliance with the monitoring requirements specified in Table 1 shall be taken at each outfall following treatment (if applicable) and prior to discharge to groundwaters. The samples taken shall be representative of the discharge.

Table 1

Limitations for Groundwater Discharges		Monitoring Requirements	
Parameter	Daily Maximum	Sample[a] Frequency	Sample[b,c] Type
Flow (Gallons Per Day)	-	Quarterly	Estimate
Oil and Grease	15 mg/l	Quarterly	Grab

(a) Quarterly sample frequency means performing the associated monitoring four times per year; once anytime during each of the four annual quarters (Jan.-Feb.-March, April-May-June, July-Aug.-Sept., Oct.-Nov.-Dec.). If there is no discharge during a quarter, the permittee shall state this on the discharge monitoring report form.

(b) Estimate means a reasonable approximation of the average daily flow based on a water balance, an uncalibrated weir, calculations from the velocity and cross section of the discharge, intake water meter readings, discharge water meter readings, or any other method approved by the Department.

(c) A grab sample means a single sample taken at one moment of time or a combination of several smaller samples of equal volume taken in less than a two minute period.

(1) Solids Removal

Solids shall be removed from seepage areas, if needed, to maintain the absorptive capacity of the soils and prevent plugging.

(2) Sample Frequency

The sample frequency for flow and oil and grease shall be quarterly, unless the Department specifies a daily, weekly, or monthly frequency in the cover letter accompanying this permit. The Department shall evaluate factors such as the frequency of the discharge, volume of the discharge, and duration of the discharge to determine if a sample frequency of daily, weekly, or monthly is more appropriate.

(3) Removal of Oil and Grease Monitoring

The Department may waive, by letter, monitoring for oil and grease based on an inspection of a given site demonstrating that oil and grease is not a concern, monitoring results, or documented practices implemented at a given site that prevent oil and grease from entering the pit or trench.

D. ADDITIONAL REQUIREMENTS FOR SURFACE WATER DISCHARGES

Discharges to surface waters shall meet the requirements outlined in this section, including the effluent limitations and monitoring requirements specified in Table 2. Samples taken in compliance with the monitoring requirements specified in Table 2 shall be taken at each outfall following treatment (if applicable) and prior to discharge to surface waters. The samples taken shall be representative of the discharge.

Table 2

Limitations for Surface Water Discharges		Monitoring Requirements	
Parameter	Daily[(a)] Maximum	Sample[(b)] Frequency	Sample[(c,d)] Type
Flow (Gallons Per Day)	-	Quarterly	Estimate
Oil and Grease	15 mg/l	Quarterly	Grab
Total Suspended Solids	40 mg/l	Quarterly	Grab

(a) Daily maximum effluent limitation means the limitation placed on each effluent characteristic which is to be compared with each single daily analysis. Compliance is achieved when the result of each analysis is equal to or less than the maximum daily effluent limitation.

(b) Quarterly sample frequency means performing the associated monitoring four times per year; once anytime during each of the four annual quarters (Jan.-Feb.-March, April-May-June, July-Aug.-Sept., Oct.-Nov.-Dec.). If there is no discharge during a quarter, the permittee shall state this on the discharge monitoring report form.

(c) Estimate means a reasonable approximation of the average daily flow based on a water balance, an uncalibrated weir, calculations from the velocity and cross section of the discharge, intake water meter readings, discharge water meter readings, or any other method approved by the Department.

(d) A grab sample means a single sample taken at one moment of time or a combination of several smaller samples of equal volume taken in less than a two minute period.

(1) Floating Solids and Foam

There shall be no discharge of floating solids or visible foam in other than trace amounts.

(2) Suspended Solids Treatment

Wastewater shall be treated for suspended solids removal (usually by gravity sedimentation) prior to discharge to surface waters.

(3) Solids Removal

Solids shall be removed from settling equipment to maintain hydraulic capacity and prevent carry over of solids.

(4) Sample Frequency

The sample frequency for flow, oil and grease, and total suspended solids shall be quarterly, unless the Department specifies a daily, weekly, or monthly frequency in the cover letter accompanying this permit. The Department shall evaluate factors such as the frequency of the discharge, volume of the discharge, duration of the discharge, and size and class of the receiving water to determine if a sample frequency of daily, weekly, or monthly is more appropriate.

(5) Removal of Oil and Grease Monitoring

The Department may waive, by letter, monitoring for oil and grease based on an inspection of a given site demonstrating that oil and grease is not a concern, monitoring results, or documented practices implemented at a given site that prevent oil and grease from entering the pit or trench.

E. STANDARD REQUIREMENTS

(1) NR 205: The conditions in ss. NR 205.07(1) and NR 205.07(3), Wis. Adm. Code, are included by reference in this permit. The permittee shall be responsible for meeting these requirements. Some of these requirements are outlined below in paragraphs (2) through (8). Requirements not specifically outlined below can be found in ss. NR 205.07(1) and NR 205.07(3), Wis. Adm. Code.

(2) Inspection and Entry: The permittee shall allow an authorized representative of the Department, upon the presentation of credentials, to:

(a) Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records are required under the conditions of the permit;

(b) Have access to and copy, at reasonable times, any records that are required under the conditions of the permit;

(c) Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices or operations regulated or required under the permit; and

(d) Sample or monitor at reasonable times, for the purposes of assuring permit compliance, any substances or parameters at any location.

(3) Planned Changes: In accordance with ss. 147.02(4)(b) and 147.14(1), Stats., the permittee shall report to the Department any facility expansion, production increase or process modifications which will result in new, different or increased discharges of pollutants. The report shall either be a new permit application or, if the new discharge will not violate the effluent limitations of the permit, a written notice of the new, different or increased discharge. The notice shall contain a description of the new activities, an estimate of the new, different or increased discharge of pollutants and a description of the effect of the new or increased discharge on existing waste treatment facilities. Following receipt of this report, the Department may issue an individual permit to specify and limit any pollutants not previously regulated in the general permit.

(4) Water Quality Sampling and Testing Procedures: Sampling and laboratory testing procedures shall be performed in accordance with Chapters NR 218 and NR 219, Wis. Adm. Code and shall be performed by a laboratory certified in accordance with the requirements of ch. NR 149, except groundwater field samples collected for pH, conductivity and temperature.

(5) Recording of Results: For each effluent measurement or sample taken, the permittee shall record the following information.

(a) The date, exact place, method and time of sampling or measurements;
(b) The individual who performed the sampling or measurements;
(c) The date the analysis was performed;
(d) The individual who performed the analysis;
(e) The analytical techniques or methods used; and
(f) The results of the analysis.

(6) Noncompliance Notification:

(a) The permittee shall report the following types of noncompliance by a telephone call to the Department's district office within 24 hours after becoming aware of the noncompliance.

1. Any noncompliance which may endanger health or the environment.
2. Any violation of an effluent limitation resulting from an unanticipated bypass.
3. Any violation of an effluent limitation resulting from an upset.
4. Any violation of a maximum daily discharge limitation for those pollutants specifically designated in the permit to be reported within 24 hours.

(b) A written report describing the noncompliance reported in par. (6)(a) shall be submitted to the Department within 5 days after the permittee becoming aware of the noncompliance. The Department may waive the written report on a case-by-case basis based on the oral report received within 24 hours. The written report shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times; the steps taken or planned to reduce, eliminate and prevent reoccurrence of the noncompliance; and if the noncompliance has not been corrected, the length of time it is expected to continue.

(7) Spill Reporting: The permittee shall notify the Department in accordance with ch. NR 158, in the event that a spill or accidental release of any material or substance results in the discharge of pollutants to the waters of the state at a rate or concentration greater than the effluent limitations established in the permit, or the spill or accidental release of the material is unregulated in the permit, unless the spill or release of pollutants has been reported to the Department in accordance with the requirements for Noncompliance Notification.

(8) Bypass: The permittee may bypass waste treatment facilities if this is necessary for the essential maintenance of the facilities and if the bypass does not exceed permit effluent limitations. The permittee may also bypass if the

bypass is due to runoff in excess of the 10 year, 24 hour rainfall event and the bypass is designated as a specific discharge point in the WPDES permit. All other bypasses of waste treatment facilities, including diversion of wastewater from land disposal systems to surface waters, are prohibited unless the following conditions are met:

(a) The bypass is necessary to prevent loss of life, personal injury or severe property damage;

(b) There are no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes or maintenance during normal periods of equipment downtime; and

(c) The permittee submitted written notice 10 days before the date of the bypass and the Department's district office wastewater supervisor had approved the bypass in writing prior to its occurrence; or

(d) In the event of an unanticipated bypass, the permittee notified the Department verbally within 24 hours and in writing within 5 days of each unanticipated bypass.

(9) Requests for Withdrawal of General Permit: The department shall withdraw a point source from coverage by a general permit and issue an individual permit upon written request of the discharger.

(10) Reasons for Coverage Under an Individual Permit: The department may require any point source covered by a general permit to apply for and obtain an individual permit if:

(a) The point source is a significant contributor of pollution or if the point source is more appropriately regulated by an individual permit. Any person may submit a written request that the department take action under this section;

(b) The point source is not in compliance with the terms and conditions of the general permit;

(c) A change occurs in the availability of demonstrated technology or practices for the control or abatement of pollutants from the point source or class of discharger;

(d) Effluent limitations or standards are promulgated for a point source or class of point sources covered by the general permit and are different than the conditions contained in the general permit;

(e) A water quality management plan containing requirements applicable to the point source is approved.

(11) Reporting of Monitoring Results: The permittee shall use the following conventions when reporting effluent monitoring results:

(a) Effluent concentrations less than the level of detection shall be reported as < less than (<) the value of the level of detection. For example, if a substance is not detected at a detection level of 0.1 mg/L, report the effluent concentration as <0.1 mg/L.

(b) Effluent concentrations equal to or greater than the level of detection, but less than the level of quantitation, shall be reported as observed and the level of quantitation shall be specified.

(c) For the purposes of calculating an average or a mass discharge value, the permittee may substitute a 0 (zero) for any effluent concentration that is less than the level of detection.

(12) Daily Maximum Effluent Limitations: Daily maximum effluent limitation means the limitation placed on each discharge parameter which is to be compared with each single daily analysis. Compliance is achieved when the result of each analysis is equal to or less than the maximum daily effluent limitation.

PIT/TRENCH DEWATERING
Briefing Memo
WPDES Permit No. WI-0049344-1
February 1996
Revised March 1996

GENERAL PERMIT COVERAGE

General Permits (GP) are designed to cover discharges from a class of facilities or industries that are similar in nature. When a GP is issued, all facilities meeting its requirements are covered by the GP. GP's currently exist for groundwater remediations, quarrying operations, swimming pools and numerous other types of facilities. For facilities that are eligible for coverage under a GP, the Department sends a cover letter and a copy of the permit to the facility. The cover letter includes the Department's determination that a facility's discharge is covered under the GP and may specify alternate requirements outlined in the permit such as modified sampling frequencies for certain parameters or the inclusion of monitoring for parameters in addition to those requiring regular monitoring.

MORE THAN ONE GP CAN APPLY

A facility may need to be covered under more than one GP, depending on the different types of wastestreams that a facility discharges. A facility that manufacturers concrete block could also mine gravel on site. The wastewater from the concrete block operation could be discharged in compliance with one GP and the wastewater from the gravel mining operation could be discharged in compliance with a different GP. However, a facility that requires an individual permit for any part of its discharge shall have all of its discharges covered under an individual permit. The only exception would be for a facility that commences a discharge that is eligible for a GP, after a specific permit has already been issued or reissued for the facility. For example, a facility that currently has an individual permit may begin a process that results in the discharge of noncontact cooling water. The noncontact cooling water discharge can be covered under a GP, as long as it meets the requirements of the GP, until the individual permit can be reissued or modified to include the noncontact cooling water discharge.

GENERAL DESCRIPTION OF OPERATIONS COVERED UNDER THIS GP

This permit is applicable to facilities with point source discharges of water from low areas such as pits, trenches, ponds, etc., that do not contain process wastes that would contain pollutants other than suspended solids and oil and grease. These types of discharges were previously covered under the stormwater oil/water separator GP, permit No. WI-0046531-1.

A. Pit/Trench Dewatering Wastewater

The wastewaters covered under this general permit are primarily contaminated with suspended solids, with no other pollutants of concern requiring treatment for removal beyond simple gravity settling. Oil and grease may be associated with these discharges as a result of

the presences of machinery near the pit or trench. Examples of some facilities that may be regulated by this general permit include: construction pits, sewer extension construction, pipe trenches, and other similar operations.

Dewatering wastewater may be removed for treatment by syphoning, pumping, or other means. A variety of treatment equipment may be used, but treatment commonly consists of seepage or settling. Common types of seepage areas include: ponds, trenches, low areas, and grassed swales. Common types of settling equipment include: steel tanks, concrete tanks, and ponds (lined and unlined). A few important design considerations for settling equipment include: inlet structure, outlet structure, overall dimensions and shape, prevention of short circuiting, maintaining hydraulic capacity, prevention of carryover of removed particles, un-hindered settling depth, sludge compaction, sludge removal, overflow rate, and hydraulic retention time. Treatment equipment may have baffles, inclined plates, chemical addition, etc. Solids removed during treatment are stored and disposed of in a manner to prevent any pollutant from the materials from entering the waters of the state.

The presence of oil and grease at levels exceeding the permit limits may require the use of an oil/water separator.

RATIONALE FOR PERMIT REQUIREMENTS

A. APPLICABILITY CRITERIA

(1) Facilities Covered

This permit is applicable to discharges of pit/trench dewatering water directly to surface waters or indirectly to groundwaters via seepage. The types of facilities covered under this general permit typically have dewatering discharges that contain suspended solids and low levels of oil and grease as the main contaminants.

(2) Facilities Not Covered

Pit Dewatering Operations not Allowed Under this Permit

This permit does not authorize wastewater pit dewatering discharges resulting from storage of coal, salt, food by-products, or other storage facilities that have wastewater contaminated with pollutants other than suspended solids. These discharges likely require the limitations and oversight associated with an individual permit.

Contaminated Groundwater

Since pit dewatering discharges may include infiltrated groundwater that is contaminated, this permit contains a condition that states that this permit does not authorize discharges of contaminated groundwater (treated or untreated). This permit does not contain the conditions and limitations necessary for adequate regulation of contaminated groundwater discharges. The Remedial Action GP may be appropriate in these situations.

Construction Sites Covered Under A Stormwater Permit

If a discharge is appropriately covered by the WPDES construction site storm water discharge permit, then this permit does not apply to the discharge. This is designed to avoid duplicate permitting of a facility.

Wetlands

Discharges covered under this permit shall meet the wetland protection requirements of ch. NR 103, Wis. Adm. Code, and shall not significantly adversely impact wetlands. For discharges that impact wetlands, a facility will need to submit information that allows the Department to determine if a discharge meets code requirements.

Outstanding And Exceptional Resource Waters

Discharges to outstanding and exceptional resource waters are not authorized by this permit. Regulation of discharges to outstanding and exceptional resource waters requires an individual permit which provides the oversight and discharge limitations necessary to protect these types of receiving waters.

Surface Water and Groundwater Standards

The discharges from facilities eligible for this permit are not expected to exceed any surface water or groundwater standards. Facilities with discharges that may violate surface water quality standards or groundwater quality standards require the oversight available under an individual permit.

Bioaccumulating Toxic Substances

The discharges from facilities eligible for this permit are not expected to contain any of the 21 bioaccumulating toxic substances. This permit categorically does not authorize discharge of any of the 21 bioaccumulating toxic substances. Regulation of these compounds requires an individual permit.

B. REQUIREMENTS FOR ALL COVERED FACILITIES

The following requirements apply to all facilities covered by this permit. Facilities discharging to either groundwaters or surface waters are required to meet the following requirements.

(1) Records Retention and Submittal

The permit requires annual reporting of monitoring results. All results shall be submitted to the Department, **postmarked no later than February 15** of the year following the previous calendar year (for example, all monitoring results for the year 1996 are to be postmarked by February 15, 1997). Facilities shall maintain any data they generate while covered under this permit for either the duration of this permit or

three years after the data is generated, whichever is longer. The cover letter accompanying this permit will identify where submittals should be sent.

(2) Authorized Signature

Any duly authorized individual may sign required reports, in accordance with the signatory requirements of this permit.

(3) Other Permits

Other permits or approvals may be required of the facility. The facility is responsible for obtaining necessary approvals. For example, any work performed below, or within 500 feet of the ordinary high water mark of navigable waters, in wetland areas, or within areas subject to local floodplain and shoreland regulations, must conform to all such county or local ordinances. Also, all applicable state permits and/or contracts required by Chapters 30, 31, and 87, Stats. (or Wisconsin Administrative Code adopted under these laws), and federal permits must be obtained as necessary.

(4) Dikes and Berms

Leakage through dikes or berms may cause sloughing or washouts; the integrity of the containment area must be maintained.

(5) Adequate Design

Chapter NR 205 identifies the design rainfall amount and probable intensity of 10-year and 25-year, 24-hour rainfall events for locations in Wisconsin. For facilities where a wastewater disposal or treatment facility is needed to meet permit requirements, this permit only requires that treatment systems be capable of handling the water resulting from a storm having a 10-year, 24-hour event frequency which falls within or flows into the area of the treatment/disposal system. This design parameter is common to industrial treatment facilities in Wisconsin. Treatment systems must have sufficient capacity to allow adequate retention time for settling. Precipitation must be taken into account for exposed settling systems.

C. ADDITIONAL REQUIREMENTS FOR GROUNDWATER DISCHARGES

A discharge to groundwaters in Wisconsin includes wastewater infiltration from irrigation, drain fields, ditches, and ponds that may impact water beneath the ground surface.

Table 1 - Discharge Limitations and Monitoring Requirements for Groundwater Discharges

The following abbreviations are typically used when referring to the concentration of a substance in a discharge:

mg/l = milligrams per liter $\approx$ parts per million
μg/l = micrograms per liter $\approx$ parts per billion

Flow

An estimate of the average daily flow performed at least quarterly will be sufficient to assure that the facility is aware of the loading to the seepage area. An estimate means a reasonable approximation of flow based on any of the following: (a) water balance, (b) an uncalibrated weir, (c) calculations from the velocity and cross section of the discharge, (d) intake water meter readings where the intake, or a specific portion of it, is discharged, (e) discharge water meter readings, and (f) any of the more complex methods listed in section NR 218.05(1), Wis. Adm. Code. The Department may approve additional methods for estimating flow.

Oil and Grease

The oil and grease daily maximum effluent limit is 15 mg/l. The oil and grease limit is based on the ability of simple oil/water separator equipment to easily remove oil and grease from the discharge to concentrations below 15 mg/l. Oil and grease monitoring is required on at least a quarterly basis using a grab sample.

(1) Solids Removal

Occasional removal of solids from seepage areas is necessary to insure that these areas can continue to absorb wastewater. Solids in wastewater can cover soils and clog spaces between soil particles, resulting in decreased seepage capacity.

(2) Sample Frequency

Since it is likely that discharges covered under this permit may not extend over long periods of time, a provision has been added that will allow the Department the flexibility of specifying a daily, weekly, or monthly sample frequency in the cover letter accompanying this permit, for flow and oil and grease. The default sample frequency of quarterly may not adequately capture a representative portion of the discharge for short duration discharges. The Department will evaluate a number of factors outlined in the permit to determine if a modified sampling frequency for the parameters is needed.

(3) Removal of Oil and Grease Monitoring

Since there may be circumstances in which oil and grease monitoring is inappropriate or unwarranted, the permit contains language that would allow the Department to waive, by letter, oil and grease monitoring.

D. ADDITIONAL REQUIREMENTS FOR SURFACE WATER DISCHARGES

Surface water discharges include ditches, storm sewers and pipes that convey wastewater to creeks, streams, rivers and lakes in Wisconsin.

Table 2 - Discharge Limitations and Monitoring Requirements for Surface Water Discharges

The following abbreviations are typically used when referring to the concentration of a substance in a discharge:

mg/l = milligrams per liter ≈ parts per million
μg/l = micrograms per liter ≈ parts per billion

Flow

An estimate of the average daily flow performed on at least a quarterly basis is required by the permit. An estimate means a reasonable approximation of flow based on any of the following: (a) water balance, (b) an uncalibrated weir, (c) calculations from the velocity and cross section of the discharge, (d) intake water meter readings where the intake, or a specific portion of it, is discharged, (e) discharge water meter readings, and (f) any of the more complex methods listed in section NR 218.05(1), Wis. Adm. Code. The Department may approve additional methods for estimating flow.

Oil and Grease

The oil and grease daily maximum effluent limit is 15 mg/l. The oil and grease limit is based on the ability of simple oil/water separator equipment to easily remove oil and grease from the discharge to concentrations below 15 mg/l. Oil and grease monitoring is required on at least a quarterly basis using a grab sample.

Total Suspended Solids (TSS)

The TSS daily maximum effluent limit is 40 mg/l (milligrams per liter). The TSS limit is based on the ability of simple settling equipment to easily remove suspended solids from the discharge to concentrations below 40 mg/l. Water is basically clear at 40 mg/l of TSS. TSS monitoring is required on at least a quarterly basis using a grab sample.

(1) Floating Solids and Foam

This is a Best Professional Judgement (BPJ) condition dating back to the Refuse Act Permit Program and the Corp of Engineer's River and Harbor Act of 1899. This condition is achievable by application of best practicable control technology.

(2) Suspended Solids Treatment

Wastewater from operations covered by this permit are expected to contain suspended solids that must be removed prior to discharge to surface waters. For most of the operations, permit effluent limits for suspended solids are achievable through the use of simple gravity separation (settling) treatment technology.

(3) Solids Removal

Over time, settling equipment fills up with settled solids, resulting in decreased volume and residence time for wastewater and ultimately, ineffective solids treatment. Solids must be removed upon occasion to insure effective settling occurs and that permit limits are met.

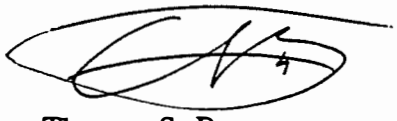
(4) Sample Frequency

Since it is likely that discharges covered under this permit may not extend over long periods of time, a provision has been added that will allow the Department the flexibility of specifying a daily, weekly, or monthly sample frequency in the cover letter accompanying this permit, for flow, oil and grease, and TSS. The default sample frequency of quarterly may not adequately capture a representative portion of the discharge for short duration discharges. The Department will evaluate a number of factors outlined in the permit to determine if a modified sampling frequency for the parameters is needed.

(5) Removal of Oil and Grease Monitoring

Since there may be circumstances in which oil and grease monitoring is inappropriate or unwarranted, the permit contains language that would allow the Department to waive, by letter, oil and grease monitoring.

Respectfully submitted,



Thomas S. Bauman
Industrial Wastewater Section
Bureau of Wastewater Management

cc: Bureau of Water Resources Management
U.S. EPA, Region V, Permits Branch
Southern District
Southeast District
Lake Michigan District
North Central District
Northwest District
Western District

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
WPDES GENERAL PERMIT PROGRAM
WASTEWATER DISCHARGE INFORMATION SUMMARY
(Revision Date - December 15, 1989)

Please print or type requested information (except for the signature).

1. General facility information.

A. Name of Facility _____
(Full official, legal name of the facility)

B. Mail Address _____
(Number and Street, Box and/or Route, City, State, Zip Code)

C. Location Address _____
(Number and Street, City, Town or Village) or (Highway or road with distance and direction from nearest city)

D. County _____

E. Agent's Name _____ Title _____ Telephone Number (____)_____
(Agent at this address who can answer questions regarding this form)

F. Official Representative's Name _____ Title _____
(Official representative signing this form if he/she is located at the facility, see item No. 18)

G. Certified Operator's Name _____
(Operator Certified per Chapter NR 114)

2. Parent company or organization, if any, with direct control over facility.

A. Company Name _____
(Full official, legal name of the parent company)

B. Mail Address _____
(Number and Street, Box and/or Route, City, State, Zip Code)

C. Official Representative's Name _____ Title _____
(Official representative signing this application if he/she is located at this address, see item No. 18.)

3. Check here ☐ if it is planned that present discharges will be continued.

4. The principal business or activity of the facility resulting in discharge is (be specific) (include SIC codes if known):

_____

5. A. Are wastewaters (including cooling waters) discharged to a land disposal system: Yes ☐ No ☐

If yes, enter type of system _____ and
(e.g. unsealed settling pond, absorption pond, earthen lagoon, field spreading, spray irrigation, septic tanks system, etc.)

location of land disposal system _____
(Use quarter, quarter, section, town, range description and nearest road intersection)

Size of system _____
(Acres)

B. Are wastewaters (including cooling water) discharged to surface waters: Yes ☐ No ☐

If yes, identify the lake, stream or tributary which receives the wastewater discharge:

_____

C. Are solids or sludges generated as a result of treatment or control of wastewater: Yes ☐ No ☐
If yes, identify how the material is stored and disposed of:

_____

D. Attach a line drawing (to scale) showing the water flow through the facility, the points of discharge, and the treatment facilities. Indicate if the discharge is direct or via a storm sewer or other conveyance. Estimate the approximate distance to the receiving waters. For all land disposal systems, identify the system as a discharge point to groundwaters. For absorption ponds, unsealed settling ponds and other land disposal systems that have an overflow discharge, identify the seepage to groundwater as one discharge point and any overflow from the pond to surface waters as a second discharge point. Number all discharge points and sampling points on the drawing. For stormwater runoff, washwater, and other overland flows, be sure to show the drainage patterns. Indicate the paved and non-paved areas including the dimensions and total surface of the areas.

6. Provide information on all wastewater discharges other than discharges to the sanitary sewer and publicly owned treatment works (POTW). Describe the wastewater type such as boiler blowdown, ion exchange wastewater, noncontact cooling water, stormwater, washwater, cooling tower blowdown, condensate, etc. and the source such as air compressor, refrigeration unit, furnace, degreasers, etc. For each discharge point, identify if the discharge is to groundwater or surface water. Include discharge volumes for each discharge point, including discharges to groundwater.

Discharge Point Number Corresponding to attached drawing	Wastewater Type and Source Description	Type of Treatment and Percent Treated	Volume of Discharge, per operating day (gal./day)		Maximum Discharge Temperature °F
			Average	Maximum	

Note: If discharge flows and/or temperatures are significantly different during summer or winter conditions, make separate entries above such as Outfall 001 (summer) and Outfall 001 (winter). Make a special note if discharge only occurs during summer. (Summer conditions include the months of May through October.)

7. Do any plans exist to significantly change the quantity or quality of any of the discharges listed in no.6 above?

Yes ☐ No ☐ If yes, attach a brief summary of the planned changes and the effects on the discharge(s).

8. Are any of the discharges listed above regulated by a WPDES permit other than that referred to in the cover letter accompanying this form? If so, specify which discharges and list the WPDES permit number.

9. Do you have any reason to believe that any of the discharges listed above in #6 may contain oil, heavy metals, PCB's or other substances as a result of your facility operations? Yes ☐ No ☐

If yes, provide a description of substances, the wastewater stream, and outfall: _____

_____

10. Are water treatment additives used in any cooling water and/or boiler makeup water discharged? Yes ☐ No ☐

If yes, attach copies of MSDS sheets and indicate the chemical supplier's name, product commercial name and product number, and quantity added per frequency of use (gal./day, lbs./week, etc.):

Cooling water additives: _____

Boiler makeup water additives: _____

Indicate if cooling tower blowdown is continuous or intermittent: _____

11. Show ☐ average daily production or ☐ use of raw material (check which is used):

A. On an annual basis _____ (specify units used)

B. For a maximum month _____ (use same units)

C. Principal procucts or services are _____

12. Check here ☐ if discharges occur all year, or check the months in which they normally occur:

☐ Jan., ☐ Feb., ☐ Mar., ☐ April, ☐ May, ☐ June, ☐ July, ☐ Aug., ☐ Sept., ☐ Oct., ☐ Nov., ☐ Dec.

13. Enter the number of days per week when such discharges normally occur _____ days per week.

14. Enter the percent of normal operations under 8 hr/day _____ 8-16 hrs/day _____ 16-24 hrs/day _____.

15. Number of employes _____ normally, and _____ maximum.

16. Sanitary wastes and process wastes not described in numbers 5 or 6, are disposed of: (check which)

	Sanitary Waste	Process Waste	
A.	☐	☐	in a septic tank system and/or subsurface absorption system.
B.	☐	☐	in a privately owned treatment system owned by you or others (identify others)_____
C.	☐	☐	in a publicly owned system operated by _____
D.	☐	☐	by other means. Describe: _____

E. Summarize types of wastes (i.e. boiler blowdown, cooling tower blowdown, domestic, etc.) discharged to the sanitary sewer. _____

17. Have any of the presently permitted discharge outfalls been discontinued or abandoned, or is it planned that they will be in the future? If so, attach an explanation identifying any such outfalls by number and the expected date of discontinuation or abandonment.

Yes ☐ No ☐

8. This form must be signed by the official representative of the facility who is: the owner, the sole proprietor for a sole proprietorship, a general partner for a partnership, or an executive officer of at least the level of vice president for a corporation, having overall responsibility for the operation of the facility.

_____ _____

Typed or Printed Name of Official Representative | Title

_____ _____

Signature of Official Representative | Date Signed

_____

Telephone Number

NOTE: If you do not return this form we will not be able to continue to permit your discharge. Wastewater discharge without a WPDES permit or misrepresentation of any information required by this form is a violation of ch. 147, Wis. Stats., which may be subject to enforcement by the Wisconsin Department of Justice.

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